No.

Ministry of Agriculture and Fisheries (MAF)
Government of the Democratic Republic of Timor-Leste

THE STUDY
ON
COMMUNITY-BASED INTEGRATED WATERSHED MANAGEMENT IN LACLO AND COMORO RIVER BASINS
IN
THE DEMOCRATIC REPUBLIC OF TIMOR-LESTE

FINAL REPORT

Volume III: Annexes

MARCH 2010

JAPAN INTERNATIONAL COOPERATION AGENCY

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THE STUDY ON COMMUNITY-BASED INTEGRATED WATERSHED MANAGEMENT IN LACLO AND COMORO RIVER BASINS IN THE DEMOCRATIC REPUBLIC OF TIMOR-LESTE

FINAL REPORT
Volume III: Annexes

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Annex – A
Estimation of Erosion Potential

Appendix-A Estimation of Erosion Potentials

1. General

In order to estimate and compare the potential of the soil surface erosion in the watersheds, the Universal Soil Loss Equation (USLE) method was applied. USLE is a model that predicts long-term average annual rate of erosion on a field slope based on the rainfall pattern, soil type, topography, crop system and management practice. USLE can only predict the amount of the soil loss that results from sheet or rill erosion on a single slope and does not account for additional losses that might occur from gully erosion, wind or tillage erosion. Since data and information required for the USLE was not available in the country, USLE estimation was made on several assumptions.

2. Procedure for Using USLE

(1) Formula of USLE

The Formula of USLE is shown below:

$$A=R\times K\times L\times S\times C\times P \qquad \text{(unit : t/ha/year)}$$

where,

A : Average annual soil loss
R : Rainfall erosivity factor
K : Soil erodibility factor
L : Slope length factor
S : Slope steepness factor
C : Crop and management factor
P : Support practice/Erosion Control factor

Soil loss was calculated by the formula for each cell of grid of 0.9ha (30m×30m) using the ArcGIS software.

(2) Determination of Values for each Factor

1) Rainfall erosivity factor (R)

The rain erosivity index (REI) is employed as the rain erosivity factor. The REI was calculated by the following formula used by the Ministry of Forestry in Indonesia.

$$Re = 2.21 \times \sum_{i=1}^{12} Ri^{1.36}$$

where,

Re: Rain Erosivity Index
Ri: Monthly rainfall (cm)
i : Month (January to December)

The Monthly rainfall data was obtained from the monthly rainfall map complied by ALGIS.

2) Soil erodiblity factor (K)

K factor depends on the characteristics of soil. According to the result of the field survey and soil survey conducted by AusAID in 2002-3, that indicates the texture of soil samples

from Aileu district are categorized as sandy loam, clay and clay loam[1], the K value for watersheds was determined as 0.22.

3) Slope Length factor (L)

Slope Length factor (L) is calculated based on the following equation.

$$L = \sqrt{\lambda / 22.1}$$

where, λ : slope length

In this calculation, the slope length was classified into 6 classes based on the present condition as following table.

Slope Length for Classified Land Uses

Land use	Slope Length (m)/Slope (%)
(1) Coffee plantation, paddy field and Settlement area	
a) class-1	8 m / 0-8%
b) class-2	8 m / 8-15%
c) class-3	4 m / 15-25%
d) class-4	3 m / 25-40%
e) class-5	2 m / over 40 %
(2) Others	50 m

Source: JICA Study Team

4) Slope Steepness factor (S)

Slope Steepness factor was calculated by the formula as shown below.

$$S = (65.41 \sin^2 \theta + 4.56 \theta + 0.065)$$

where, θ : slope steepness

Slope steepness data was acquired from the satellite elevation data. The steepness values of 50% in gradient is applied for all the slope with a steepness over 50%.

5) Cover and Management factor (C)

Cover and Management factor is based on the type and condition of vegetation and crops. Therefore, the factor was determined in accordance with the categories of the Land-use and vegetation map (shown as Figure 3.8) as shown below.

Value of C factor in the watersheds

Type of Land use	C factor
1. Forests	
1-1: Dense forest (natural)	0.01
1-2: Medium forest (natural)	0.50
1-3: Sparse forest (natural)	0.50
2. Shrub land	0.02
3. Grassland (including grazing lands and upland farms)	0.02
4. Coffee plantation	0.01
5. Bare land (including grazing lands and upland farms)	1.00
6. Sandbar/River bed	0.00
7. Paddy field	0.05
8. Settlements	0.10

Source: JICA Study Team

[1] Working Report, Mr.Kimio Miura/JICA Agricultural Policy Advisor,2005

6) Support Practice / Erosion Control factor (P)

P factor indicates the effectiveness of soil conservation works (e.g., Terracing work, contour cropping, etc) introduced in the site. Due to the lack of the data, the assumption value was decided by type of Land-use and Vegetation as the following table.

Value of P factor in the watersheds

Type of Land use	P factor
1. Forests	
1-1: Dense forest (natural)	1.00
1-2: Medium forest (natural)	1.00
1-3: Sparse forest (natural)	1.00
2. Shrub land	1.00
3. Grassland (including grazing lands and upland farms)	1.00
4. Coffee plantation	0.80
5. Bare land (including grazing lands and upland farms)	1.00
6. Sandbar/River bed	1.00
7. Paddy field	0.02
8. Settlements	1.00

Source: JICA Study Team

3. Result of USLE

The average annual soil loss was calculated by using USLE under the above conditions.

It is difficult to directly evaluate the values/data of the estimated soil erosion potentials since they are the results of the rough estimation without any field validation and reliable data/value as calculation factors.

Therefore, in order to make the relative evaluation of the results of USLE, the values/data of the estimation were classified into five (5) classes, namely, i) severe, ii) high, iii) moderate, iv) low, and v) very low. Five-grading classification method was employed by splitting the total range of the data into five classes as shown below.

Criteria for evaluation of potential of soil erosion

Potential level	Very low	Low	Moderate	High	Severe
Estimated amount of annual soil loss by USLE calculation (t/ha/yr)	0-250	250-500	500-750	750-1,000	1,000-

Source: JICA Study Team

In accordance with the result of USLE calculation for grid as shown in the Attachment 1, the erosion potentials is estimated by administrative unit and sub-watershed. Results of the estimation were used for the assessment of soil erosion potentials in the watersheds rather than for the identification of total sediment loads produced. Attachment 2 shows the erosion potential by suco and the following table presents its summary by the sub-watershed.

Potentials of Soil Erosion in the Watersheds

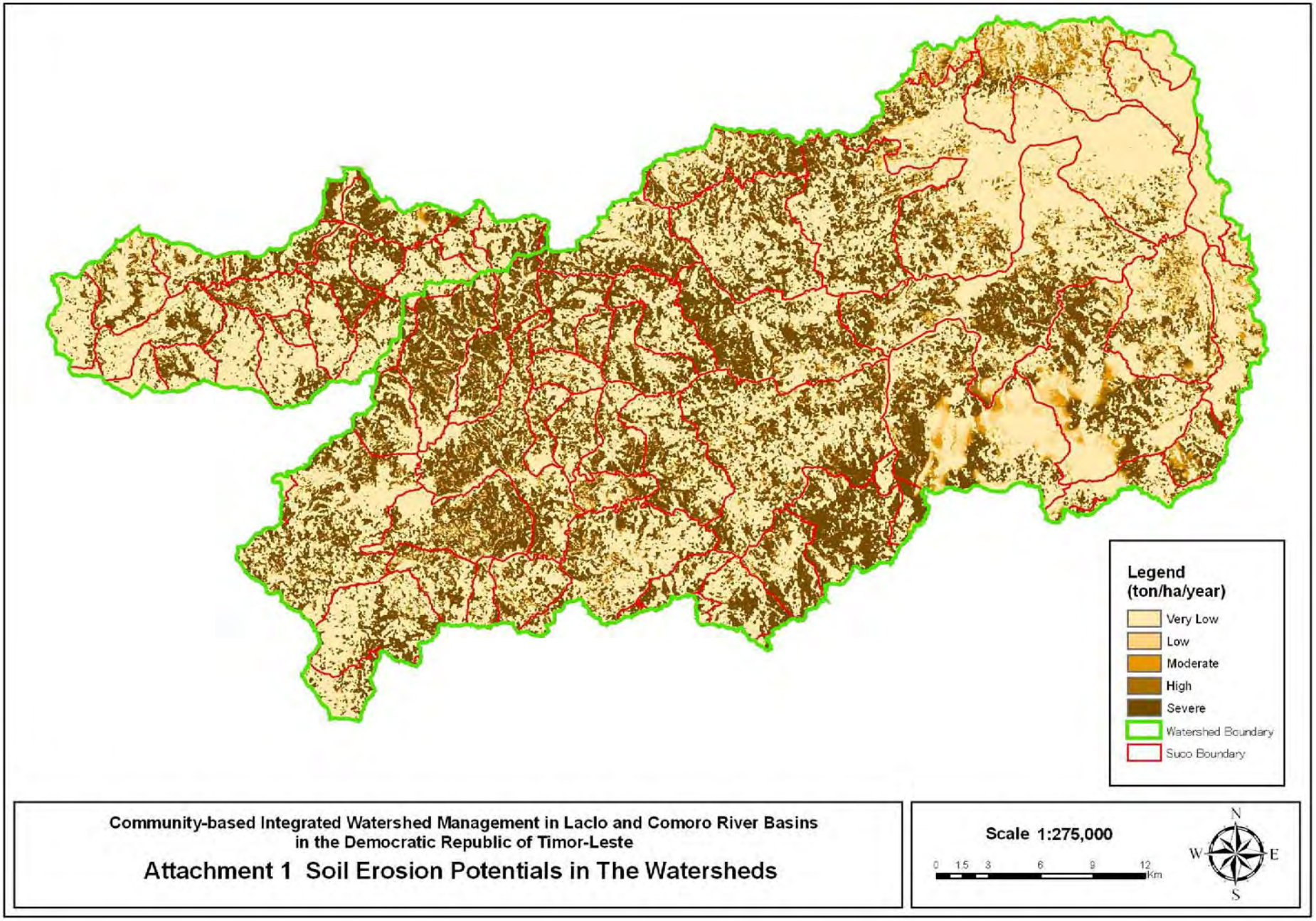
Watershed	Sub-watershed	Unit	Potential level of soil erosion					
			Very low	Low	Moderate	High	Severe	Total
Comoro	Downstream of Comoro	ha	286	14	21	34	381	737
		%	38.8	1.9	2.8	4.6	51.7	100.0
	Bemos	ha	2,648	69	94	84	1,495	4,391
		%	60.3	1.6	2.1	1.9	34.0	100.0
	Balele	ha	6,013	213	231	237	2,630	9,325
		%	64.5	2.3	2.5	2.5	28.2	100.0

Watershed	Sub-watershed	Unit	Potential level of soil erosion					
			Very low	Low	Moderate	High	Severe	Total
	Buamara	ha	2,453	47	60	76	817	3,452
		%	71.1	1.4	1.7	2.2	23.7	100.0
	Anggou	ha	1,826	54	50	45	331	2,307
		%	79.2	2.3	2.2	2.0	14.3	100
	Subtotal	**ha**	**13,225**	**398**	**457**	**477**	**5,654**	**20,212**
		%	**65.4**	**2.0**	**2.3**	**2.4**	**28.0**	**100**
Laclo	Downstream of Laclo	ha	5120	327	254	287	196	6,183
		%	82.8	5.3	4.1	4.6	3.2	100
	Sumasse	ha	10,911	1,268	965	721	2,901	16,765
		%	65.1	7.6	5.8	4.3	17.3	100
	Ue Coi	ha	5,898	737	414	304	1,424	8,778
		%	67.2	8.4	4.7	3.5	16.2	100
	Lihubani	ha	10,033	908	834	754	4,437	16,966
		%	59.1	5.4	4.9	4.4	26.2	100
	Lohun	ha	9,652	1,093	871	704	4,841	17,161
		%	56.2	6.4	5.1	4.1	28.2	100
	Noru	ha	6,872	279	353	418	4,930	12,852
		%	53.5	2.2	2.7	3.3	38.4	100
	Eraibanaubere	ha	6,505	335	412	459	5,817	13,528
		%	48.1	2.5	3.0	3.4	43.0	100
Laclo	Malikan	ha	3261	123	141	159	1,947	5,630
		%	57.9	2.2	2.5	2.8	34.6	100
	Daisoli	ha	6,735	510	554	553	4,134	12,487
		%	53.9	4.1	4.4	4.4	33.1	100
	Monofunihun	ha	6,298	588	636	705	6,089	14,316
		%	44.0	4.1	4.4	4.9	42.5	100
	Manotahe	ha	3,748	193	202	214	2,092	6,450
		%	58.1	3.0	3.1	3.3	32.4	100
	Subtotal	**ha**	**75,031**	**6,362**	**5,635**	**5,279**	**38,810**	**131,117**
		%	**57.2**	**4.9**	**4.3**	**4.0**	**29.6**	**100**
Total		**ha**	**88,256**	**6,760**	**6,092**	**5,756**	**44,464**	**151,329**
		%	**58.3**	**4.5**	**4.0**	**3.8**	**29.4**	**100**

Source: JICA Study Team

As shown in the table above, about 28 % of the Comoro watershed and 30 % of the Laclo watershed are considered highly susceptible to surface soil erosion. Especially, the sub-watersheds such as the downstream of the Comoro watershed, Bemos and Balele sub-watersheds in Comoro watershed and Eraibanaubere, Monofunihun, Malikan, Daisoli and Manotahe sub-watersheds of the Laclo watershed have relatively high potentiales of soil surface erosion.

It is crucial to introduce the countermeasures for soil erosion control as well as proper land use and management in those highly potential areas.


Legend
(ton/ha/year)
Very Low
Low
Moderate
High
Severe
Watershed Boundary
Suco Boundary
Community-based Integrated Watershed Management in Laclo and Comoro River Basins
in the Democratic Republic of Timor-Leste
Attachment 1 Soil Erosion Potentials in The Watersheds
Scale 1:275,000
0 1.5 3 6 9 12
Km
N
W
E
S

Attachment 2 Potentials of Soil Erosion by suco in the watersheds

Unit : ha

District	District	SubDistric	Suco	Potential Level					Total
				Very low	Low	Moderate	High	Severe	
Comoro	Aileu	Aileu	Aisirimou	8	0	0	0	0	8
			Saboria	1	0	0	0	1	2
			Seloi Craic	673	14	17	22	276	1,002
		Laulara	Cotolau	421	9	12	15	168	627
			Fatisi	531	18	27	32	571	1,178
			Madabeno	712	7	8	8	210	945
			Talitu	572	8	11	13	306	910
			Tohumeta	393	5	9	13	346	767
		Remexio	Acumau	14	1	1	2	41	59
	Dili	Dom Aleixo	Comoro	134	5	10	20	157	326
		Vera Cruz	Dare	597	46	63	47	653	1,407
		Railaco	Deleco	221	6	9	12	85	332
			Fatuquero	469	16	17	20	225	748
			Lihu	1,306	44	45	49	405	1,849
			Matata	93	1	1	1	5	101
			Railoco Craic	966	6	10	15	153	1,150
			Railoco Leten	1,005	12	15	18	287	1,337
			Samalete	771	5	7	10	202	994
			Taraco	663	25	31	33	320	1,072
			Tocoluli	411	5	6	6	52	480
	Liquica	Bazartete	Fahilebo	1,169	105	91	73	414	1,852
			Leorema	1,014	12	12	13	137	1,188
			Tibar	477	22	25	26	430	981
			Ulmera	603	26	30	30	206	896
	Sub total			13,225	398	457	477	5,654	20,212
Laclo	Aileu	Aileu Vila	Aisirimou	1,086	131	138	155	1,453	2,963
			Bandudato	1,209	198	193	191	1,265	3,056
			Fahiria	1,908	209	229	248	1,768	4,362
			Fatubosa	1,915	37	49	51	854	2,906
			Hoholau	103	0	0	0	0	103
			Lahae	727	50	59	67	446	1,348
			Lausi	350	13	16	14	123	516
			Saboria	841	74	90	107	1,094	2,207
			Seloi Craic	159	14	14	14	145	346
			Seloi Malere	630	50	51	51	512	1,293
			Suco Liurai	3,548	191	200	211	2,020	6,170
		Laulara	Cotolau	1	0	0	0	0	1
			Madabeno	163	3	4	4	37	211
			Talitu	5	0	1	1	11	18
		Liquidoe	Acubilitoho	676	35	44	55	453	1,262
			Bereleu	1,429	72	94	105	959	2,660
			Betulau	412	76	66	53	231	839
			Fahisoi	540	27	27	32	173	799
			Faturilau	4,194	212	272	310	2,750	7,738
			Manucasa	478	27	29	29	216	778
			Namoleso	610	22	30	44	331	1,037
		Remexio	Acumau	1,316	64	74	77	986	2,517
			Fadabloco	1,027	21	26	34	656	1,764
			Fahisoi	690	30	38	44	593	1,394
			Faturasa	2,296	125	157	170	2,075	4,823
			Hautoho	819	22	26	35	621	1,522
			Maumeta	294	14	23	32	167	530
			Suco Liurai	1,133	115	130	131	861	2,371
			Tulataqueo	2,545	81	100	109	1,522	4,357
	Ainaro	Maubisse	Fatu Besi	780	53	66	64	394	1,357
			Manelobas	27	2	2	1	38	70
			Maubisse	17	3	4	3	20	46
			Maulau	2,443	152	152	157	1,136	4,040
			Suco Liurai	658	12	17	16	228	932
	Dili	Metinaro	Duyung (Sereia)	368	115	86	50	73	692
			Sabuli	4	1	1	1	10	17
	Manatuto	Laclo	Hohorai	2,933	163	178	177	1,653	5,104
			Lacumesac	9,366	611	493	401	1,562	12,433
			Uma Naruc	5,288	435	384	365	2,333	8,806
			Umacaduac	3,149	454	365	429	264	4,661
		Laclubar	Batara	3,413	633	433	272	1,731	6,482
			Fatumaquerec	927	57	113	114	615	1,826
			Funar	3,848	785	428	269	1,838	7,168

*Note: *1 I+A108 The following ranges of estimated soil losses were used for classification. Very Low: 0-250 t/ha/yr, Low : 250-500 t/ha/yr, Medium: 500-750 t/ha/yr, High: 750-1000 t/ha/yr, Very high: >1,000 t/ha/yr*

Attachment 2 Potentials of Soil Erosion by suco in the watersheds

Unit : ha

District	District	SubDistric	Suco	Potential Level					Total
				Very low	Low	Moderate	High	Severe	
Laclo	Manatuto	Laclubar	Manelima	50	4	4	4	35	97
			Orlalan	887	54	54	49	244	1,288
			Sanana'in	2,340	484	321	217	653	4,014
		Manatuto	Ailili	914	30	21	12	15	992
			Aiteas	244	28	19	14	20	326
			Cribas	1,615	198	133	83	262	2,291
			Iliheu	1,416	55	40	42	26	1,580
	Manufahi	Turiscai	Caimauc	495	10	13	18	289	824
			Fatucalo	997	47	57	66	1,686	2,853
			Lesuata	835	40	47	54	722	1,698
			Liurai	783	20	25	24	560	1,412
			Manumera	106	1	2	3	49	161
			Matorec	27	1	1	1	30	60
	Sub total			75,031	6,362	5,635	5,279	38,810	131,117
Total				88,256	6,761	6,092	5,756	44,464	151,329

*Note: *1 It shows the level of potentials of soil erosion. Area classified as Class 1 has the lowest potential, while that classified as Class 7 has the highest potential. The following ranges of estimated soil losses were used for classification. Very Low: 0-250 t/ha/yr, Low : 250-500 t/ha/yr, Moderate: 500-750 t/ha/yr, High: 750-1000 t/ha/yr, Severe: >1,000 t/ha/yr*

Annex – B

Result of Market Survey

Appendix-B Result of Market Survey[1]

1. Survey objectives

a. To identify problems and possible measures in supplying agricultural goods
b. To identify potential crops and market needs on demand side
c. To analyze overall situation regarding marketing

2. Survey procedures

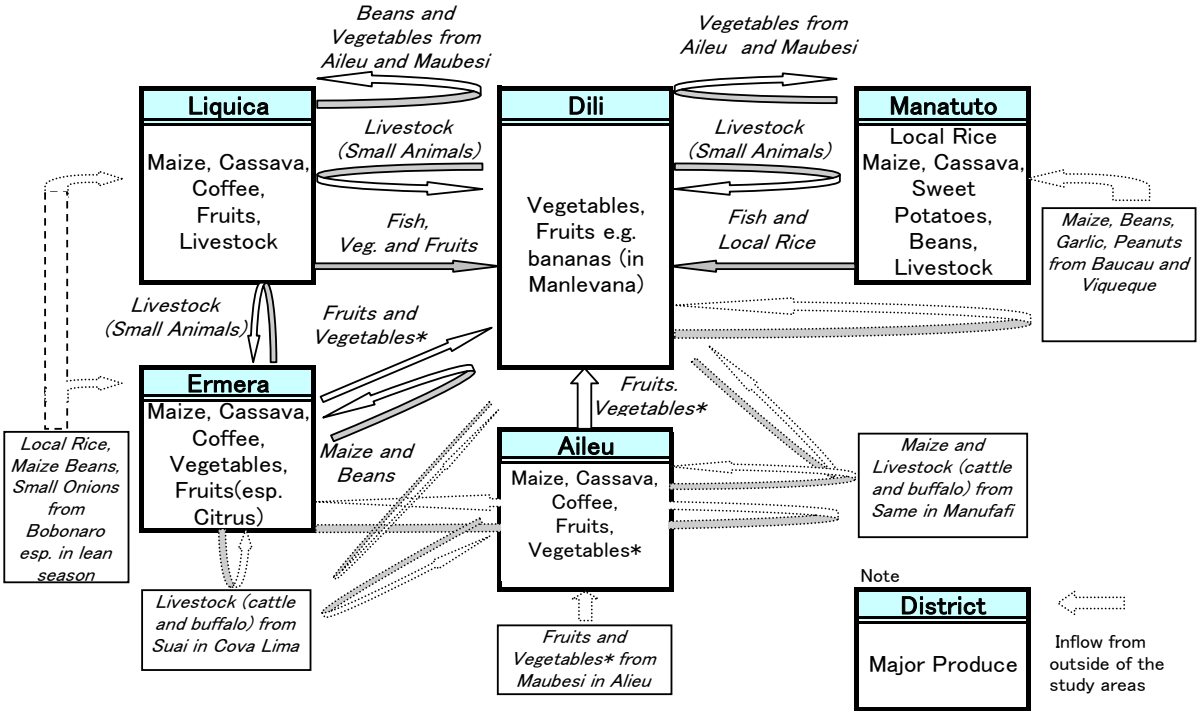
a. Literature Review and Interview Survey
b. Supply analysis by commodity
c. Demand analysis by district market

Literature review and interview with retailers, farmers and district officers were conducted to provide data to these analyses. Supply Analysis has identified general constraints on marketing development (e.g., transportation costs) and commodity specific conditions (See **Attachment 1**). Demand Analysis, though difficult to generalize, has indicated price tendency and distribution mechanism in the Study area (**Attachment 2**)[2]. With these analyses, overall analysis is conducted.

3. Major Findings

(1) General view

In the Study area, there are major produce according to districts, i.e., coffee in Ermera and Liquica, vegetables in Aileu, and local rice in Manatuto. Some produces e.g., maize and beans also inflow to the Study area from "outside" districts, e.g., Baucau especially in lean seasons. The figure below indicates the overall distribution of domestic products with major produces of each district. The one overleaf shows locations of local markets.

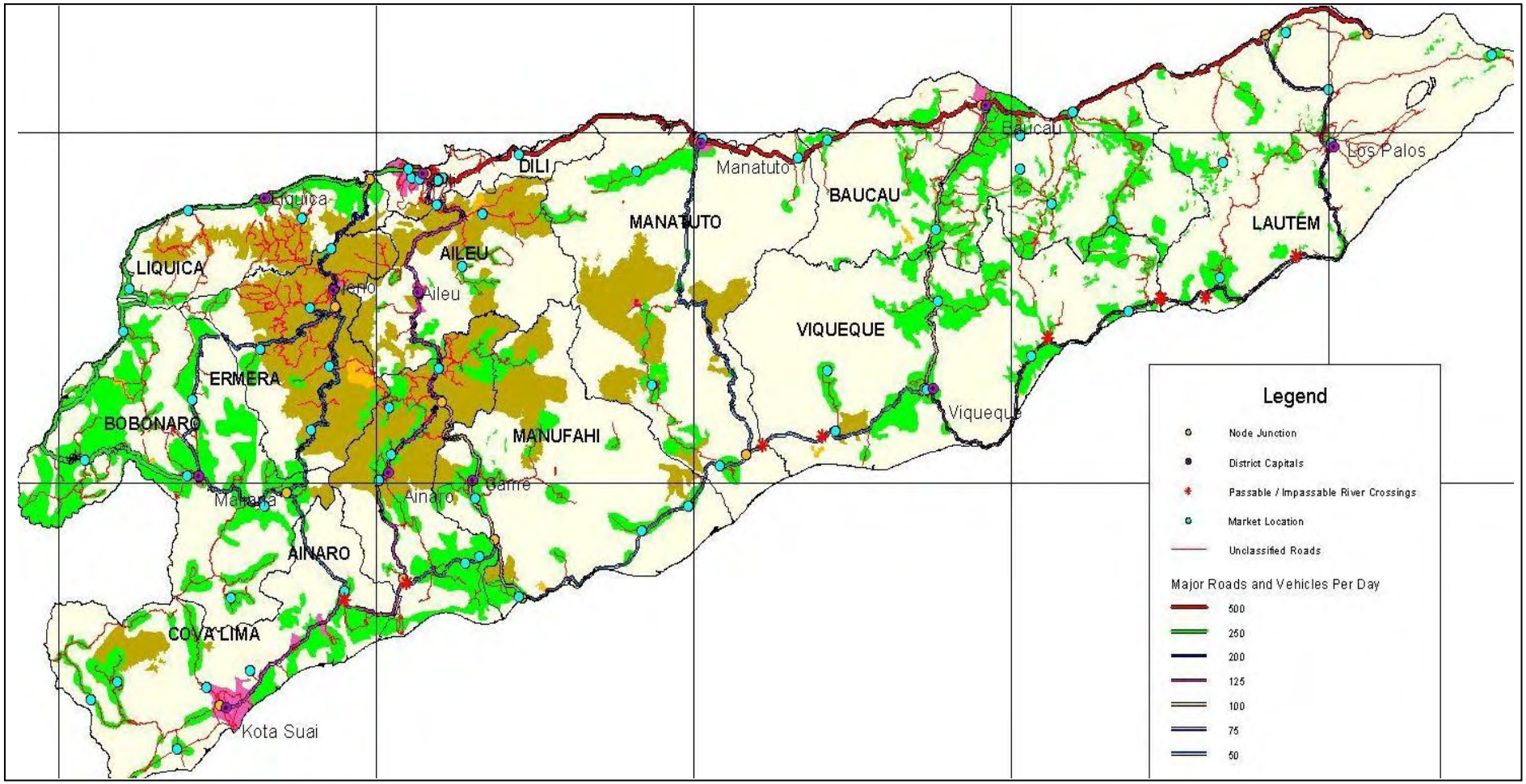


Domestic Distribution and Production of Major Commodities in the Study Area

*Note) * upland vegetables such sweet potatoes and cabbages Source: Interview with farmers and transportation staff.*

[1] This paper presents the result of the market survey conducted in February 2007.

[2] Prices reported here cannot be generalized without further detailed surveys. As other studies also pointed out, measuring price is considerably difficult: it depends on equipment people use for sale (e.g. a cup or pile) and quantity a consumer buys.



Location of Local Markets in Timor Leste (Main Ireland)

Source: MAFF ALGIS

(2) Common Conditions

There are three common conditions for marketing development regardless of the produce, which include i) low production, ii) high transportation costs and iii) low demand for goods.

Low production

At present, many farmers have little incentive for marketing. This is associated with the fact that agricultural production is low and not sufficient to cover home consumption. This tendency is particularly true of staple crops i.e., maize and rice. For many farmers, food security at household level is more significant than earning money through marketing. The other two conditions below also are included in factors making farmers less interested in marketing.

Lack of access to market /High transportation costs

For many farmers, a major marketing channel is to sell the produce to consumers and retailers in a local marketplace on a particular day of a week, so-called "a weekly bazaar day." A weekly bazaar is held at district and sub-district level.

Interview Survey identified that most of the farmers face difficulty to access district markets due to lack of transportation means. Transportation costs among districts are also limiting factors for marketing development. Especially after civil crisis, the fare of microlet and mini-bus, which farmers and traders generally use for move, has increased, thus affecting the price of the produce or their income (See table below).

Fare of Microlet and Mini-bus

Unit: US$/way

Travel	Current fare		Fare before Crisis	
	With Produce	Without Produce	With Produce	Without Produce
Dili-Ermera	3	2	1.5	1
Dili-Liquica	2.5	1.5	1.5	1
Dili-Aileu	3	2	2	1.5
Dili-Manatuto	3	2	1.5	1-1.5
Liquica-Ermera	5	2	2.5	?
Dili-Baucau	5	3	3	2
Town/Dili –Manleuana/Dili	1	0.25	0.5	0.1
Dili-Maliana/Bobonaro	8	5	5	3
Manatuto-Baucau	3	2	n.a	n.a
(Taxi in Dili)	2	1	1	0.5-1

Note: Fares with the produce includes transportation cost of one bag at US$1/bag-US$2/bag but are subject to change according to the volumes of bags for a person to bring.
Source: Interview with farmers and transportation staff.

Low purchasing power of goods

Many retailers/farmers interviewed through the survey pointed out that the purchasing power of consumers had decreased since civil crisis from May 2006. This is probably because many people have lost jobs. This opinion is heard from farmers and retailers in a local marketplace; at village level, it is often said that traders, who used to come to the village, has halted their activities probably due to security reasons. Government of Timor Leste is now making great efforts to improve security and labor conditions.

(2) Conditions by Commodity

Rice

As regards local rice, only 25 % of total production is distributed through markets[3]. For sale in the market, farmers generally do milling themselves with majority manually beating paddy in a traditional way and small portion utilizing a machine at cost of US$1.00/bag (=38 kg). When selling to traders or barter with other produce, they tend to provide paddy.

In Manatuto, a major producer of local rice in the Study area, there is the Manatuto Logistics Center (CLM) as a major buyer of rice. The CLM is a cooperative agency supported by USAID and GTZ. The role of CLM is to establish and maintain a national stock of staple foods especially rice, to provide a buffer against bad harvests or sudden price rises. Under the auspices of the MAFF, CLM purchase domestic rice, stabilize prices, and establish links between distributors and consumers. It buys paddy from farmers at US$0.14/kg and sells rice to Manatuto consumers and traders in Dili at US$0.32-0.33/kg[4].

Imported rice is mainly from Vietnam and Thailand. After landed in Dili, it is distributed to other districts with substantial proportion going to Baucau (via Manatuto) and Ermera[5]. Relatively-wealthy retailers (e.g., owners of Kiosk) deal with this produce, as small retailers can not make transport arrangement for procurement.

Price depends on various factors. In general the smaller quantity to be purchased, the higher price per kg is to be paid. Availability in stock and transpiration are major factors of price determination for imported rice. It is reported that the price of imported rice increases with distance from Dili[6].

Major deficits of quantity for consumption are calculated in Dili and Ermera[7]. In terms of quality of taste, local rice is preferred to by the nation rather than imported rice; in

[3] MAFF, *Commodity Profile Series No.1 Version 2-Rice*, May 2006

[4] Reference is made from USAID homepage. Before the civil crisis in 2006, CLM is one of Centers Logistics National. CLN has the central office in Dili and three district offices in Manatuto, Maliana and Suwai; however, due to civil crisis, as of Jan 2007, only Manatuto Office (CLM) is operating. The information of prices was revised through interview with CLM. In case of Dili, wholesale price is US$0.33, slightly higher than that in Manatuto (US$0.32) due to transportation.

[5] WFP Emergency Needs Assessment Branch (ODAN), *Timor Leste: Market Profile for Emergency Food Security Assessments*, April, 2006.

[6] Care International Timor-Leste , *Rice Marketing Survey Report*, August 2004

[7] Same as 4.

terms of availability and volume after cooking[8], imported one is more popular than local one, as the former helps to attain food security.

Major constraints for development include 1) poor quality and quantity due to poor post-harvesting techniques; 2) disincentive for farmers who have subsistence purpose in terms of low and unstable price and access to market; and 3) lack of marketing experiences of local farmers.

Market Profile of Rice

Price/ Season	a) Local Rice Farm Gate: US$0.11-US$0.13 /kg (Paddy at Manatuto) Wholesale: US$0.38-US$0.74 /kg (Milled Rice at Baucau) / August-December*1 Retail: US$ 0.71/kg (by a small cup at Dili)*1 b) Imported Rice Wholesale at Dili :US$ 0.25/kg - US$0.32/kg*1 Retail: US$0.26/kg – US$0.56/kg*1
Major Areas for Production	a) Production Area Baucau, Bobonaro, Viqueque and **Manatuto***2 b) Surplus Area No surplus District but production in Viqueque and **Manatuto** in the east; and Bobonaro and Covalima in the west nearly reach their demand *3
Major Deficit Area	**Dili** and **Eremera *3**
Market Channels	a) Direct sale by Farmers b) Farmers => Retailers c) Farmers => Wholesalers/Traders => Retailers (major in **Manatuto** with CLM)
Major constraints*4	- Low yield due to low production techniques and insect and mice attack - Crop lost due to poor post-harvest techniques such as storage - Farmers sill producing for subsistence purpose (i.e., lack of marketing experiences of local farmers) - Disincentive for farmers to sell due to prices they consider low and unstable price and lack of buyers in the market - Availability of imported rice - Broken rice due to mixed varieties of rice
Potential	- Potential areas for irrigation

Source: *1 Interview Results *2 MAFF, *Commodity Profile Series No.1 Version 2-Rice*, May 2006, *3 WFP Emergency Needs Assessment Branch (ODAN), *Timor Leste: Market Profile for Emergency Food Security Assessments*, April, 2006, *4 Summarized from the above documents; FAO, Special Report FAO/WFP *Crop and Supply Assessment Mission to Timor-leste*, June 2003 and Care International Timor-Leste, *Rice Marketing Survey Report*, August 2004; and interview confirmation.

Maize

Only 15 % of total production of maize is distributed through markets[9]. In season (April and May), farmers bring and sell their own produce mainly in form of combs. During lean season, it is also increasingly common that traders outside a district come to a weekly bazaar in deficit areas, which retailers purchase for sale.

Districts in the eastern area, particularly from Los Palos (Lautem) and Viqueque, are major producers and many of them had surpluses. It is considered that these surpluses

[8] E.g., Care International Timor-Leste , *Rice Marketing Survey Report*, August 2004

[9] ETTA *et al.*, 2001: ETTA, ADB, World Bank and UNDP 2001, *the 2001 Survey of Sucos, Initial Analysis and Implications for Poverty Reduction*, Dili, Timor-Leste.

satisfy the marketing needs for Manatuto, Dili as well as other districts. Liquica and Ermera have also enjoyed maize from some western districts i.e., Maliana in Bobonaro, in off season. Aileu produces less amounts of maize while importing some quantity from these western districts in lean season.

Dili shows relative high price of maize. Another interesting observation is that the price of the produce from west districts such as Bobonaro tends to be high around June[10], which probably reflects the short period of food shortage in the western/southern areas of the country.

Major constraints include low yield due to shortage of seeds and insect and mice attack and crops lost due to poor storage techniques, vulnerable to insect and mice infestations. Potential for marketing development is increase of produce available for market which would result from adoptions of improved varieties and improved storage techniques against weevil damage, as currently encouraged by MAFF and Seeds of Life.

Market Profile of Maize

Price/ Season	Wholesale: US$0.14-US$0.5 /kg *1 Retail: US$ 0.4 – US$0.83 /kg *1 (The price in Dili is generally high) Season: April – May
Major Areas for Production	a) Production Area Baucau, Viqueque, Covalima, Bobonaro and Lautem *2 b) Surplus Area Los Palos (Lautem) and Viqueque in the east; and Bobonaro and Covalima in the west*3
Major Deficit Area	**Dili** , **Ermera** and Baucau*3
Market Channels	a) Direct sale by Farmers (major channel) b) Farmers => Retailers (major channel) c) Farmers => Wholesalers/Traders => Retailers
Major constraints	- Low yield due to shortage of seeds and insect and mice attack *2 - Crops lost due to poor storage techniques, vulnerable to insect and mice infestations *4
Potential	- Production increase - Dissemination of good storage techniques

Source: *1 Interview Results *2 FAO, Special Report FAO/WFP *Crop and Supply Assessment Mission to Timor-leste*, June 2003, *3 WFP Emergency Needs Assessment Branch (ODAN), *Timor Leste: Market Profile for Emergency Food Security Assessments*, April, 2006, *4 ACIL, *Agricultural Marketing in East Timor*, July 2002.

Fruits & Vegetables

In general, many farmers bring fresh vegetables and fruits to a marketplace in a weekly bazaar day. They tend not to care about price of the produce for sale; rather their intention is to sell the produce to consumers and retailers quickly. Many retailers deal with non-perishable commodities such as onions, garlic and beans, sometimes with involvement of traders in procurement.

[10] WFP Emergency Needs Assessment Branch (ODAN), *Timor Leste: Market Profile for Emergency Food Security Assessments*, April, 2006.

Ainaro, Aileu and Ermera are major producers of upland vegetables and fruits (such as potatoes and cabbages), providing them to Dili. The district of Dili plays a role as a distribution center to neighborhood districts. Retailers in Liquica and Manatuto also often go to markets in Dili to purchase those high-value horticultural crops. Some retailers in Dili markets also enjoy selling imported vegetables by buying from wholesale super markets in Dili. Manatuto have some inflows of vegetables from Baucau.

It is often said that farmers can determine prices of their own produce; retailers have implicit agreement among themselves regarding prices.

Major constraints include low yield due to lack of farm inputs, difficulty of sale estimation (high risk/low return) and non-uniformed quality of the produce with poor post-harvest techniques. Potential includes purely-organic produce and almost all-year-round production in case of Aileu[11].

Market Profile of Fruits and Vegetables

Price/Season	Price: refer to Supply Analysis Fruits Banana: all season, Orange :June, Pineapple: Oct-Nov, Mango: Nov-Dec Vegetables April-November (Aileu); July-November (Others)*1
Major Areas for Production	a) Production Area Almost all districts: Fresh Vegetables and Fruits(Mango, Pineapple, and Banana) Aileu : Horticultural Crops(e.g., Carrot and Cabbage) *2 Ainaro : Horticultural Crops(e.g., Carrot and Cabbage)*2 Baucau: Onions*2 Bobonaro: Beans*3 b) Surplus Area Ainaro in general; **Aileu** and **Ermera** in particular in the Study area
Major Deficit Area	**Dili** in general**; Manatuto and Liquica** in particular in the Study area
Market Channels	a) Direct sale by Farmers (e.g., Leafy vegetables) b) Farmers => Retailers (Major channel) c) Farmers => Wholesalers/Traders => Retailers (some cases in trades of beans, onions, garlic and horticulture)
Major constraints	- Low yield due to lack of farm inputs (fertilizers, pesticides, and seeds)*1 - Difficulty of estimating of volume of sale - Non-uniformed quality of produce with poor post-harvest techniques (e.g. handling) - High transportation cost to fetch Dili
Potential	- The possibility for farmers to produce all year round (in Aileu)*1 - Pure organic produce*1

Source: *1 MAFF, *Restructuring the Agricultural Service Centres to Achieve Timor Leste's Development Goals*, April 2006 *2 MAFF, *Cultivation Area and Production of Horticultural Crops 2004-2005*, *3MAFF *National Recapitulated Data of Production of legume and root crops 2004.Other parts are based on interview results.*

[11] MAFF, *Restructuring the Agricultural Service Centres to Achieve Timor Leste's Development Goals*, April 2006

Coffee

Coffee has been the major cash crop in this country. In the Study area, Ermera and Liquica are recognized as major production districts.

Producers either sell cherries mainly to Co-operative Café Timor (CCT) or process into parchment for sale to other buyers (e.g., Timor Global PTE Ltd and Timor Corp).

In the Sutdy area, CCT are operating business in Aileu (Aileu), Railaco (Ermera), Bazartete (Liquica), Maubesse (Ainaro) and Turiscai (Manufahi). Local coop (CCO) members, who have received training from CCT on how to grow coffee and have been registered as members, pick up cherries in the harvest season from May to September. And they take them to the closest road, from where CCO buyers run trucks to collect and bring them to one of their two wet processing facilities in Maubesi (Ainaro) and Estado (Ermera)[12].

Number of CCO and its members in the study Area

District	Sub-district	CCO	Members	Ratio(%) (Members/total HH)
Aileu	Aileu	73	2,999	87%
Ermera	Railaco	20	895	52%
Liquica	Bazartete	5	293	8%
Ainaro	Maubisse	69	3,303	75%
Manufahi	Turiscai	24	947	87%
Total		191	8,437	58%

Sources: DAFTAR CCO TAHUN 2006, CCT; and Census Timor-Leste 2004 (2004)

Timor Global PTE Ltd (TG) is another buyer of coffee. They have purchased parchments mainly from growers in Fatobessi and Hatolia in Ermera. As of January 2007, TG is establishing a wet-processing factory in Railaco in Ermera as well as nursery development, warehouses and demonstration plots. According to TG, those could be utilized in providing training and supports to farmers in the future, though detailed has not yet determined. Likewise, Timor Corp, according to interview with farmers in Maubesse, sends trucks to Ermera for procurement of parchment; however, in other districts, farmers have to go to a processing factory in Dili.

CCT pays in 2005/06 US$0.20-22/kg for cherry, depending on the international price. It also purchases parchment of US$0.75-0.90 / kg, though not major. TG, on the other hand, focuses on procurement of parchment, paying US$0.95-1.40 / kg. It also pays US$0.25-US$0.30/kg for cherry. Payment by other buyers ranges from 0.85 /kg – 1.20/kg for parchment.

Major constraints include falling price in the international market; low yield due to poor tree management including of shading tree; ambiguous land tenure system; and inconsistency in quality due to lack of understanding of quality issues and extension services. Potential include development of niche markets e.g. organic coffee.

[12] Wet processing facilities in Aifu and Liquica have been closed due to shortage of water.

Market Profile of Coffee

<table>
<tr><td>Price/ Season</td><td>a) Price
<table>
<tr><th></th><th>Cherry</th><th>Parchment</th><th>Note</th></tr>
<tr><td>CCT</td><td>0.20-0.22 (Major)</td><td>0.75-0.90</td><td>Price depends on world price
Members only(Need to be a member)</td></tr>
<tr><td>Timor Global</td><td>0.25-0.30</td><td>0.95-1.40 (Major)</td><td>Price depends on quality
Mainly from Hatubesi and Hatulia in Ermera</td></tr>
<tr><td>Others</td><td></td><td>0.85-1.20</td><td></td></tr>
</table>
b) Season: May-September (Arabica)</td></tr>
<tr><td>Major Areas for Production</td><td>a) Production/Surplus Area
Ermera, Manufahi, and Liquica</td></tr>
<tr><td>Market Channels</td><td>a) Direct sale by Farmers (to a lesser degree)
b) Farmers => CCT =>Export (Cherry)
c) Farmers => Other buyers such as Timor Global (Parchment)</td></tr>
<tr><td>Major constraints*2</td><td>- Falling prices in the global market.
- High cost for certification of "organic coffee"
- International cost competitiveness (e.g. high labor cost)
- Low Production due to poor tree management
- Inconsistency of quality due to lack of under staining of quality issues and extension services
- Ambiguous land tenure system</td></tr>
<tr><td>Potential</td><td>- Development of niche market (high quality and organic)
- Farmers willing to process by themselves</td></tr>
</table>

Source: Interview Results and Oxfam, *Overview of the Coffee Sector in Timore Leste Update November 2003 to February 2004*

Livestock

Many farmers hold a variety of animals. Small animals including chickens, pigs and goats are common and hence most frequently found in the market. Cattle and buffalos are also sold sometimes in local market but more often than not taken by traders, who fetch from Dili to major production areas, directly to slaughter houses, using hired trucks. Liquica, Same and Maliana are major providers of beef. Many retailers in Dili are from those abattoir companies.

The most important areas for cattle production are Bobonaro, Oecussi, Viqueque and Covalima. Live cattle are exported through West Timor to Indonesia by traders who come across the border and by CCT. While potential for export is being confirmed, domestic demand for beef is generally low: it is estimated that only 10% of the population easting meat, since most households especially in rural areas can not afford to buy it[13].

Prices of livestock in Dili are as shown in the table below. The prices in district markets are generally lower than those in Dili, though not so much sold. For example, it is confirmed that the price of meat in Aileu (US$ 3.00/kg) is lower than in Dili (US$3.50/kg). As regards fluctuation, it is reported that prices of livestock tend to be

[13] WFP Emergency Needs Assessment Branch (ODAN), *Timor Leste: Market Profile for Emergency Food Security Assessments*, April, 2006

low during food shortage periods, because farmers are forced to sell their animals as a coping strategy[14].

Major constraints include environmentally and monetary high cost of feeding and poor reproductive performance and animal diseases. Free grazing, in particular, is identified as a cause of land use problem. Lack of farmers' interesting in market is also another bottleneck against marketing development. On the other hand there is the big potential for livestock development for exports in Indonesia, given increasing demand for Bali cattle, though needs to examine sites for production.

Market Profile of Livestock

Price in Dili	Farmers	Retailers	Major Production Areas for Dili
Goat	20 for small (14 kg) 35 for medium 65-80 for large	25 for small (14 kg) 40 for medium 70-85 for large	Manatuto, Liquica, Maliana
Pigs	10-12 for baby 35-40 for small 60 for medium 75-80 for large	16-20 for baby 48 for small 70 for medium 90-100 for large	Manatuto, Liquica, Maliana
Chickens	5/head (Large) 4/head (Small)	8/head (Large) 5/head (Small)	(Liquica)
Buffalo/Small	275/head	3.5/kg	Same, Liquica, Suai and Maliana
/Medium	300/head	3.5/kg	Same, Liquica, Suai and Maliana
/Large	350-500/head	3.5/kg	Same, Liquica, Suai and Maliana
Cattle/Small	250/head	3.5/kg	Same, Liquica, Suai and Maliana
/Medium	275-300/head	3.5/kg	Same, Liquica, Suai and Maliana
/Large	300-350/head	3.5/kg	Same, Liquica, Suai and Maliana
Other Aspects			
Major Areas for Production	a) Production/Surplus Area Liquica and Manatutao mainly for small animals Same and Suai mainly for large animals		
Market Channels	a) Direct sale by Farmers (for small animals, to a lesser degree) b) Farmers => Retailers fetching from production areas		
Major constraints	- Limitation of natural grazing areas - Low nutritional status of natural pastures - High cost of feeding with low production of rice and maize - Poor reproductive performance of Bali cattle - Lack of basic veterinary services - Lack of proper slaughter facilities - Shortage of improved breeding stock		
Potential	- Development of Bali cattle production for export		

Source: Interview results and ACIL, *Agricultural Marketing in East Timor*, July 2002,

[14] WFP Emergency Needs Assessment Branch (ODAN), Timor Leste: Market Profile for Emergency Food Security Assessments, April, 2006

Potential Cash Crops

At present, with limited scope for domestic marketing, the Government of Timor Leste, together with donors and NGOs, is exploring potential of several commodities for exporting in addition to the traditional cash crop, i.e., coffee. Vanillas and candlenuts, for example, are promoted by CCT and GTZ, respectively (See **Attachment** 3 for CCT activities). A recent study has also identified the potentiality of mung beans, groundnuts, tamarind and cashews for exporting to West Timor, though the emergence of traders and development of supply chain network are prerequisite[15]. The following table summarizes some potential commodities, which are of particular implication for the Study area.

Potential Cash Crops for the Study Area

Produce	Supply Condition	Production Area	Prospects for Demand/ Buyers
Vanilla	Labor intensive crop CCT and PARDTL support production.	Ermera and Liquica Aileu (less area)	CCT
Clove	Clove exists; however, there is no buyer at this moment, except part of Laulara (Aileu) where CCT supports.	Aileu	CCT West Timor in Indonesia
Cashews	Relatively easy to be grown and do processing; however, currently there is few production area and therefore initial investment (e.g., technical training) is needed.	Manatuto and Aileu	West Timor in Indonesia
Candlenuts	Relatively easy to be grow; however, currently there is few production area and therefore initial investment (e.g., technical training) is needed. GTZ supports production and processing in eastern District such as Baucau and Viqueque.	Manatuto	GTZ (previously GTZ had contract with University of Hawaii for exporting; but now the contract has finished and it is necessary to look for another buyer) CRS

Source: ACIL, *Agricultural Marketing in East Timor*, July 2002, MAFF; and GTZ, *West Timor Market Study*, October 2006

Forest Products

Although not studying many samples, the market survey has identified some forest products i.e., firewood and honey. Firewood is a major source of energy for many households in Timor Leste. Despite the fact that cutting trees are now prohibited by the government regulation, there are many kiosks and shops that sell firewood. A major species are *Eucalyptus Alba* and *Eucalyptus Deglupta*. Neighborhood districts such as Liquica and some eastern sub-districts in Dili surrounding a town (e.g., Hera and Metinaro) are major sources for consumption in Dili. Firewood is also one of major marketed goods in this country. Incidentally it is found that one bunch sold in Dili has the weight around 1.0-2.0 kg in general; and it is said that a family with 5 members consume 6 bunches for drinking and cooking per day. These kinds of information will provide estimation of firewood consumption over the country.

[15] GTZ, *West Timor Market Study*, October 2006

As regards honey, the interview with MAFF has identified that Remixco in Aileu and Laklubar in Manatuto have potential for production. Species of bees include *Apis dorsata* and *Apis Melifhera.* Trees for honey are *Albizia spp.* and *Eucalyptus europhilla.* Major constraints are low demand for honey and thus low price for growers. Previously, traders come to these areas; however, current marketing condition force producers to go to Dili with lower prices.

4. Implications for the Watershed Management Plan

Through the overall analysis, there are some implications for watershed management plans. They can be summarized as follows.

- There are common conditions regardless of the produce for marketing development, i.e., 1) low production; 2) lack of access to markets/high transportation costs; and 3) low purchasing power of the population. Arguably, among them, the issue of low production could be considered as the utmost target of the watershed management plan, as the other two conditions may require holistic approach such as economic growth and infrastructure development to overcome the problems. Strategies for watershed management thus should include the increase of availability of the produce, which, in long term, leads rural farmers to explore for marketing. For example, improvement of storage technique and increase of vegetable production would be effective approach immediately to ensure food security at household level and ultimately to provide the produce for marketing.
- With respect to cash crops, coffee could continue attaining great attention in terms of production and processing. In addition to coffee, with current efforts by the government and its partners, there are several commodities that have potential for export marketing. Development of production of these crops could be considered in watershed management as a mean to diversification of income resources. Given the fact that the number of private traders is substantially limited and it is difficult to find new marketing channel for exports in the country, development could be in line with initiatives taken by existing organizations. Coordination with MAFF and existing agencies such as CCT is a key factor to lead farmers to launch new production.
- As for forest products, the marketing of firewood reveals the fact that rural households cut trees not only for cooking and drinking but also for earning income from sale. This fact should be taken into account in implementing activities that attempt to prevent the use of trees as firewood.

Attachment.1 Supply Analysis Matrix by Commodity and Major Production Area

Commodity	Major Problems in Price Aspect	Major Problems in Quantity Aspect	Major Problems in Quality Aspect	Dili	Ermera	Liquica	Aileu	Manatuto
Paddy	・Inefficient access to/ High cost of transport(*1) ・Low Price of imported rice (*8)	・Only 25% of production for marketing (*1). ・5% of Post harvest loss and low milling rate(50%) (*1)	Broken rice due to mixed varieties(*1)		x(*4)			x(*4)
Maize	・Inefficient access to/ High cost of transport(*1)	・Only 19% of production for marketing (*2 P53). ・Crops lost due to poor storage techniques affected by weevil and mice infestations (*3) ・Hardly available in some season. ・Low Yield due to shortage of seeds(*4)	Introduced variety (Arjuna) is more difficult to pound but local variety is less yielding.(*12)		x(*4)	x(*4)	x(*4)	
Tuber crops	・Inefficient access to/ High cost of transport(*1)	・Around 20-30% of production for marketing (*3 P16,17). ・	(no major problem identified)		x(*4)	x(*4)	x(*4)	x(*10)
Fruits	・Inefficient access to/ High cost of transport(*1)	(no major problem identified)	・Rough Handling and Transportation resulting in bruising (e.g., banana) (*3 P12) ・Small size of the produce in some cases		x (*9) (esp. Citrus)		x(*3)	
Vegetables	・Inefficient access to/ High cost of transport(*1) ・High cost of labour for production for markets(*11)	・Low yield due to lack of farm inputs (*11) ・Difficult to sell completely. (But Aileu can produce vegetables all year round)	・Small size of the produce in some cases (*3 P12) ・Not good appearance due to rain damage				x(*3)	
Coffee	・Falling prices in the global market(*6 P3). ・high cost for certification of "organic coffee" (*6 P3) ・International cost competitiveness (e.g. high labor cost)(*6 P3) ・Inefficient access to/ High cost of transport(*6 P3)	・Low Production due to poor tree management(*6 P3)	・Inconsistency of quality due to lack of understanding of quality issues and extension services (*6 P3)		x (*7 P25)	x (*7 P25)		
Other Cash Crops/Vanilla	・Labor intensives crops(*3) ・Lack of basic knowledge of production and processing(*3). ・New attempt: Spending initial 4 years for harvesting for production (*3).				X(*11)	X(*11)		
Other Cash Crop/Candlenuts	・Farmers with lack of interest in harvesting the nuts (*3 P36). ・Lack of knowledge of value-adding processes (*3 P36) ・Lack of investment capital for development of processing industries (*3 P36) (But there is potential in terms of costs and skills and of physical conditions with many areas growing trees.)							x (*3*11)
livestock	・High cost of feeding with low production of rice and maize(*3 P44)	・Poor reproductive performance of Bali cattle(*) ・Lack of basic veterinary services (*3 P43) ・Low nutritional status of natural pastures ・Less interests of farmers in marketing.	・Lack of proper slaughter facilities (*3 P44) ・Shortage of improved breeding stock(*3 P44) ・Lack of quality checking system		x (*7 P14)	x (*7 P14)(esp. Chicken)		x (*7 P14)
Honey	・Producers feel that the price is too low.	・production system is of gathering (not production with hive)	(no major problem identified)				x (*3)	x (*7 P14)

Reference

*1MAFF, Commodity Profile Series No.1 Version 2-Rice, May 2006/ *2ETTA, ADB, WB and UNDP, The 2001 Survey of Sucos P53, October 2001/ *3ACIL, Agricultural Marketing in East Timor, July 2002./*4FAO, Special Report FAO/WFP Crop and Supply Assessment Mission to Timor-leste, June 2003 /*5JICA, Report on Analyses of Village Profile Survey, August 2006/ *6Oxfam, Overview of the Coffee Sector in Timore Leste Update November 2003 to February 2004/ *7ACIAR, Agriculture: New Directions for a new nation East Timor 2003/ *8MAFF, Restructuring the Agricultural Service Centres to Achieve Timor Leste's Development Goals (April 2006)/ *9JICA, Programme-formulation Study on Agribusiness (written in Japanese) (August, 2005)/ *10MAFC,Crops Area and Production by District 2002/ *11 Interview Results /*12 Seeds of Life Maize quality and cooking techniques of East Timorese farmers. Oct 2003

Attachment.2 Demand Analysis Matrix (Major Commodities by District Market)

Consumption District	Major Commodities	Major Production Area	Selling Price	Buying Price	Season (low price)	Non-season (high price)	Market Flows
Aileu	Cabbage	Aileu	0.25 - 0.50 /kg	22.00 - 24.00 /Bag	Octobers	Jan	Farmers-Retailers
	Egg Plant	Aileu	0.40 - 0.50 /kg	16.00 - 14.00 /Bag	Octobers	Jan	Farmers-Retailers
	Garlic	Aileu	1.33 - 1.67 /kg	40.00 - 35.00 /Bag	August	Jan	Farmers-Retailers
	Leafy Vegetables	Aileu	0.59 - 1.18 /kg		N.A	Jan	Farmers
	Livestock	Same, Suai, and Aileu	3.00 - 3.50 /kg	About 280 - /cattle(in Aielu)	Nil	Nil	Retailers go to the production area
	Maize	Aileu and Same	0.40 - 0.83 /kg	0.20 - 0.80 /kg	April-May	August-Jan	Farmers-Retailers
	Orange	Aileu	0.80 - 1.00 /kg	27.00 - 30.00 /Bag	June	Jan	Farmers-Retailers
	Potetos	Aileu/Maubesi	1.00 - 2.00 /kg	20.00 - 30.00 /Bag	Octobers	Jan	Farmers-Retailers
	Red Beans	Maubesi	2.50 - /kg	1.00 -	N.A	Jan	Farmers-Retailers(Retailers go to Maubesi)
	Rice Imported (Bag)	Dili	0.39 - 0.41 /kg	0.37 - 0.39 /kg	Nil	Nil	Retailers go to the production area
	Small onion	Aileu/Maubesi	0.50 - 1.00 /kg	30.00 - 27.00 /Bag	April	Jan	Farmers-Retailers or Farmers (Selling Price become Buying Price)

Comments by Interviewees:
Maize, cassava and sweet potatoes are generally well sold.
Barter is allowed with salt and maize.
Demand is low as compared to before civil crisis.
Transportation cost is increasing.

Observation:
Major produce in the market come from local productions areas.
Maize and livestock come from other districts.
There is a relatively greater number of retailers who deal with fresh vegetables.
Roof area is owned by one family.

Attachment.2 Demand Analysis Matrix (Major Commodities by District Market)

Consumption District	Major Commodities	Major Production Area	Selling Price	Buying Price	Season (low price)	Non-season (high price)	Market Flows
Dili	Banana	Dili(Manlevana)	1.00 - /bunch	0.50 - /bunch	Nil	Nil	Farmers-Retailers or Own (Selling Price become Buying Price)
	Cabbage	Aileu	0.50 - /Unit	0.25 - /Unit	N.A	N.A	Farmers-Retailers or Own (Selling Price become Buying Price)
	Carrot	Aileu, Ainaro(Maubesi)	0.50 - /kg	15.0 - 35.00 /Bag	N.A	N.A	Farmers-Retailers or Own (Selling Price become Buying Price)
	Egg Plant	Dili(Manlevana)	0.50 - 0.63 /kg	0.25 - 0.38 /kg	Oct-Jan	April	Farmers-Retailers or Own (Selling Price become Buying Price)
	Egg Plant	Aileu, Ainaro(Maubesi)	1.00 - /kg	2.50 - 5.00 /Bucket	N.A	N.A	Farmers-Retailers or Own (Selling Price become Buying Price)
	Garlic Imported	Indonesia	2.50 /kg	0.80 - 1.25 /kg	May	September and	Traders-Retailers
	Kidney Beans	Ermera Aileu Maubesi	#### - 1.00 /kg	#REF! - 0.90 /kg	N.A	N.A	Farmers-Retailers or Own (Selling Price become Buying Price)
	Kidney Beans	Aileu, Ainaro(Maubesi)	1.00 - /kg	7.00 - 25.00 /Bag	N.A	N.A	
	Leafy Vegetable	Dili(Manlevana),etc.	0.71 - /Kg	0.24 - /Kg	N.A	N.A	Mainly Farmers
	Maize	Bobonaro(Maliana),Viqueque, Baucau	0.71 - /kg	0.20 - 0.40 /kg	April-May	Jan	Farmers-Retailers or Own (Selling Price become Buying Price)
	Pineapple	Aileu	0.50 - /Unit	0.33 - /Unit	N.A	N.A	Farmers-Retailers
	Potetos	Ermera, Aileu, Maubesi, Imported	#### - 2.00 /kg	#REF! - 1.18 /kg	N.A	N.A	Farmers-Retailers
	Red Beans	Maliana	1.00 - 1.25 /kg	0.16 - 0.50 /kg	April	Dec.-Jan.	Farmers-Traders-Retailers
	Rice Local	Baucau	0.71 - /kg	0.38 - 0.56 /kg	August-Dec	Jan.-July	Going to Baucau Market (How about coming?)
	Small Onion	Maliana	1.67 - /kg	0.80 - 1.50 /kg	April	Dec.-Jan.	Farmers-Traders-Retailers
	Small Onion	Baucau/Dili (Lita Store)	2.00 - 2.50 /kg	1.25 - 2.50 /kg	September	March	Going to Baucau Market (How about coming?)
	Tomato	Dili(Manlevana)	0.75 - 1.20 /kg	0.63 - 1.07 /kg	Oct-Jan	April	Farmers-Retailers or Own (Selling Price become Buying Price)
	Tomato	Manatuto	1.00 - /kg	0.52 - 1.17 /kg	N.A	N.A	Farmers-Retailers
	Firewood	Liquica, Ermera, Hela, Metinaro	0.10 - 0.25 /bunch	1.00 - /15 bunches	Nill	Nill	Own/ Cutters-Retailers

Comments by Interviewees:

Well-demanded good includes maize, onions and fresh vegetables.
Local rice is one of the most profitable.
Demand is low with increasing competition in Dili markets.

Observation:

Manlevana in Dili is one of the major producers of fresh vegetables in the market.
Lita store is also one of the main wholesalers for imported vegetables.
There is a wide range of goods including see weeds and tofu.
Many retailers are to pay fee for a sale space to an owner of land but he refused it.

Attachment.2 Demand Analysis Matrix (Major Commodities by District Market)

Consumption District	Major Commodities	Major Production Area	Selling Price	Buying Price	Season (low price)	Non-season (high price)	Market Flows
Ermera	Buffalo	Same	3.00 - /kg	250 /head(medium)	Nill	Nill	Retailers go to the production area
	Banana	Ermera/Gleno	0.56 /kg	0.28	N.A	N.A	Farmers-Retailers
	Coconuts	Ermera/Gleno	0.50 /unit	0.25 /unit	Nill	Nill	Farmers-Retailers
	Egg Plant	Ermera/Gleno	0.29 /kg		N.A	N.A	Farmers
	Garlic Local	Ermera/Atsabe	2.50 /kg	30.00 - 20.00 /box	N.A	N.A	Farmers-Retailers
	Garlic Local	Baucau	2.50 - /kg	1.67 /kg	N.A	N.A	
	Leafy Vegetables	Ermera/Gleno	1.00 - /kg	0.80 - /kg	Nill	Nill	Farmers-Retailers or Own (Selling Price become Buying Price)
	Maize	from Dili markets	0.50 - 0.63 /kg	0.30 - 0.50 /kg	April-May	Jan	Retailers go to Dili to purchase
	Maize	Ermera/Atsabe	0.83 - /kg	0.80 - /kg	N.A	N.A	Farmers-Retailers
	Mango	Ermera/Gleno	0.10 /kg	0.08 - /kg	Nill	Nill	Farmers-Retailers or Own (Selling Price become Buying Price)
	Orange	Ermera(Gleno, Railaco)	0.71 /kg	0.33 /kg	Nill	Nil	Farmers-Retailers
	Pig	Liquica, Ermera (Gleno)	3.00 - /kg	70.00 /head(medium)	Nill	Nill	Retailers go to the production area
	Pineapple	Ermera/Gleno	0.56 /kg	0.28	Jan-Feb-Mar.	N.A	Farmers-Retailers
	Rice Imported(Bag)	Dili	0.34 - 0.42 /kg	0.31 - 0.39 /kg	Nill	Nill	Retailers go to Dili to purchase
	Small onion	Ermera/Atsabe	1.00 /kg	0.95 - 1.43 /kg	N.A	N.A	Farmers-Retailers
	Taro	Ermera/Gleno	0.57 /kg		N.A	N.A	Farmers
	Tomato	Ermera/Railaco	0.53 - 1.05 /kg	0.45 - 0.60 /kg	July	Jan	Farmers-Retailers

Comments by Interviewees:
Well-demanded good includes maize, meat and imported flour.
Dried maize is not available in local areas and thus imported from Dili.
Transpiration is expensive.
Demand is low as compared to before.

Observation:
Major produce in the market come from local productions areas such as Atsabe, Gleno and Railaco.
Many vegetables have good quality like tomatoes from Railaco.

Attachment.2 Demand Analysis Matrix (Major Commodities by District Market)

Consumption District	Major Commodities	Major Production Area	Selling Price	Buying Price	Season (low price)	Non-season (high price)	Market Flows
Liquica	Banana Large=1.7kg)	Liquica	1.00 /Bunch	0.50 /Bunch	Nill	Nill	Farmers-Retailers
	Banana(Small=0.5 kg)	Liquica	0.50 /Bunch	0.25 /Bunch	Nill	Nill	Farmers-Retailers or Own (Buying =Selling Price)
	Beans	Baucau	1.00 -	0.50 - 0.63 /kg	N.A	N.A	Farmers-Traders coming to Liquica-Retailers
	Chilli	Baucau	2.50 - /kg	1.20 /kg	N.A	N.A	Farmers-Traders coming to Liquica-Retailers
	Garlic Imported	from Dili markets	2.50 /kg	25.00 /Bag	Nill	Nill	Retailers go to Dili to purchase
	Ginger	Baucau	2.50 - /kg	16.0 /White Buckets	N.A	N.A	Farmers-Traders coming to Liquica-Retailers
	Leafy Vegetables	Liquica	0.50 /kg	0.20 /kg	Nill	Nill	Farmers-Retailers or Own (Buying =Selling Price)
	Maize	Maliana	0.40 - 0.63 /kg	0.14 - 0.50 /kg	April-May	Jan-Feb.	Farmers-Traders coming to Liquica-Retailers
	Mango	Liquica	0.10 /kg		N.A	Dec.-Jan.	Farmers-Retailers or Own (Buying =Selling Price)
	Pineapple(Large=1.5kg)	Liquica	0.75 - 1.00 /Unit	0.25 - 0.50 /Unit	Oct-Nov	Jan-Feb	Farmers-Retailers
	Pineapple(Small=0.8 kg)	Liquica	0.50 /Unit	0.25 /Unit	Oct-Nov	Jan-Feb	Farmers-Retailers
	Tomato	Liquica	1.00 - 2.50 /kg	0.75 - 1.50 /kg	Jan-Feb.	July-August	Farmers-Retailers

Comments by Interviewees:
Well-demanded good includes red beans and vegetables .
Transportation cost is expensive.
Demand is low as compared to before.

Observation:
There is a fruits market along with a main road, where they sell quality produce.
The fruits market is supported by Haburas.

Attachment.2 Demand Analysis Matrix (Major Commodities by District Market)

Consumption District	Major Commodities	Major Production Area	Selling Price	Buying Price	Season (low price)	Non-season (high price)	Market Flows
Manatuto	Banana(large=2.4 kg)	Manatuto	1.00 - bunch	0.50 bunch	Nill	Nill	Own/Farmers-Retailers
	Cabbage	Dili（Aileu/Maubesi/Liqui	0.50 - 0.75 /Unit	0.33 - 0.50 /kg	September	April	Farmers-Traders(in Dili Market)-Retailers
	Kidney Beans	Dili(Maubesi)	1.67 - /kg	0.83 - 1.67 /kg	Nill	Nill	Retailers go to Dili to purchase
	Labu Japarang	Baucau	0.33 - /kg	0.13 /kg	Nill	Nill	Farmers/Traders coming to Manatuto-Retailers
	Leafy Vegetables(Kankun)	Manatuto/Baucau	1.00 /Pile	5.00 /bag	Nill	Nill	Farmers-Retailers
	Leafy Vegetables(Others)	Manatuto	1.00 /Pile	0.67 /Pile	Nov-Feb.		Farmers/Traders coming to Manatuto-Retailers
	Garlic Local	Baucau/Dili	5.00 /kg	3.75 - 6.25 /kg	April-July	Aug-Dec.	Farmers-Traders coming to Manatuto -Retailers
	Maize	Baucau	0.08 /comb	0.05 /comb	April-May	Jan-Feb	Farmers-Traders coming to Manatuto -Retailers
	Mango	Manatuto	0.25 - /kg	0.13 /kg	Nill	Nill	Own/Farmers-Retailers
	Peanuts	Baucau	0.50 - 1.50 /kg	7.00 - 10.00 /Bag	March	Dec.-Jan.	Farmers/Traders coming to Manatuto-Retailers
	Potetos	Dili(Imported,Maubesi, Alieu)	2.00 /kg	1.10 /Bag	Nill	Nill	Retailers go to Dili to purchase
	Rice Imported(Bag)	Dili	0.34 - 0.42 /kg	0.33 - 0.39 /kg	Nil	Nil	Retailers go to Dili to purchase
	Rice Imported(Cup)	Dili	0.56 - /kg	0.32 - 0.42 /kg	Nill	Nill	Retailers go to Dili to purchase
	Small Onion	Baucau/Dili	1.67 - 3.33 /kg	0.83 - 1.67 /kg	April-July	Aug-Dec.	Farmers-Traders coming to Manatuto -Retailers
	Firewood	Manatuto	0.10 - /kg	- /kg	Nill	Nill	Own

Comments by Interviewees:
Transpiration is expensive.
Demand is low as compared to before.
Firewood is not so well demanded in market as people around here cut trees by themselves.

Observation:
Imported rice is sold in local markets by small retailers.
Banana from Natabora sub-district is of good quality.

Attachment.3 List of CCT supporting groups

Produce	District	Sub-District	Name of Group	Number of Members	Areas	Number of Trees
Vanilla	Ermera	Ermera	Borhei	29	7.62	7,034
		Hatolia	Leimia Rai Ikun	54	12.51	6,911
			Klibur Unidade	14	3.82	975
			Halibur Fini	12	0.99	1,005
			Fitung Nabilan	48	9.73	9,602
			Moris Labaruk	27	6.95	9,740
			Asulau	55	10.62	22,329
			Manraek	50	19.73	24,691
			Kailulik	47	4.68	4,814
		Letefoho	Vanili Moris Foun	13	6.74	900
		Astabe	Kailulik	6	0.56	172
		Sub-Total		**355**	**83.95**	**88,173**
	Liquica	Liquica	Halibur Hamutuk	27	6.55	3,774
			Moris Hakmatek	97	30.86	12,639
			Manu Kokoroek	42	11.44	6,957
			Serviso Ba Nafatin	53	11.47	8,525
			Sirazol Haburas	60	18.05	7,673
		Bazartete	Aifunan Laran H	11	3.30	357
		Bazartete	Leo Kuda Talin	37	14.09	4,765
		Maubara	Maubara Lisa	5	0.23	1,666
		Sub-Total		**332**	**95.99**	**46,356**
	Aileu	Aileu	Ularema M. Foun	14	3.85	445
		Laulala	Talitu Buras	38	5.91	2,747
		Sub-Total		**52**	**9.76**	**3,192**
	Manatuto	Soibada	Salau M. Foun	1 WG	0.50	n.a
	Manufahi	Same	Same Buras	20	5.03	3,376
		Fatuberliu	Wekiar Ailaran	38	4.69	1,485
	Ainaro	Ainaro	Soru Craik	9	2.54	5,665
	Baucau	Baucau	Aubaca Diak	5 WG	2.60	n.a
	Lautem	Lospalos	Fuiloro	2 WG	1.50	n.a
	Bobonaro	Bobonaro	Illgole	77	20.81	n.a
Cloves	Ermera	Ermera	Cengkeh Ermera	39	n.a	217
	Aileu	Laulara	Laulara	37	n.a	1,345
			Balibar	18	n.a	422
			Lorico Balibar	25	n.a	660
			Fatuloda Balibar	23	n.a	395

Source: DAFTAR CBO TAHUN 2007, CCT
Note: WG means "working group"

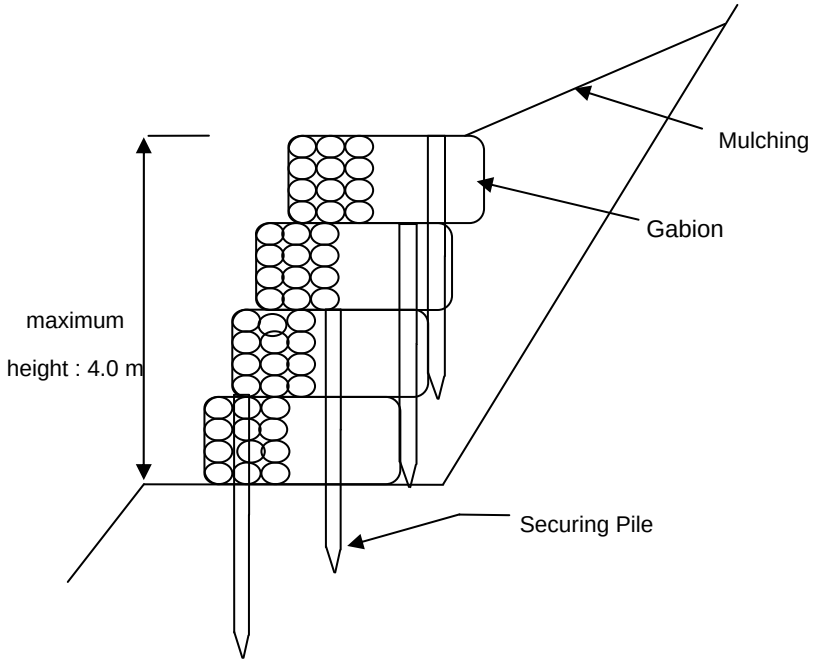
Annex – C

Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Sub-program

Annex-C Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Program

1. Slope Protective measures

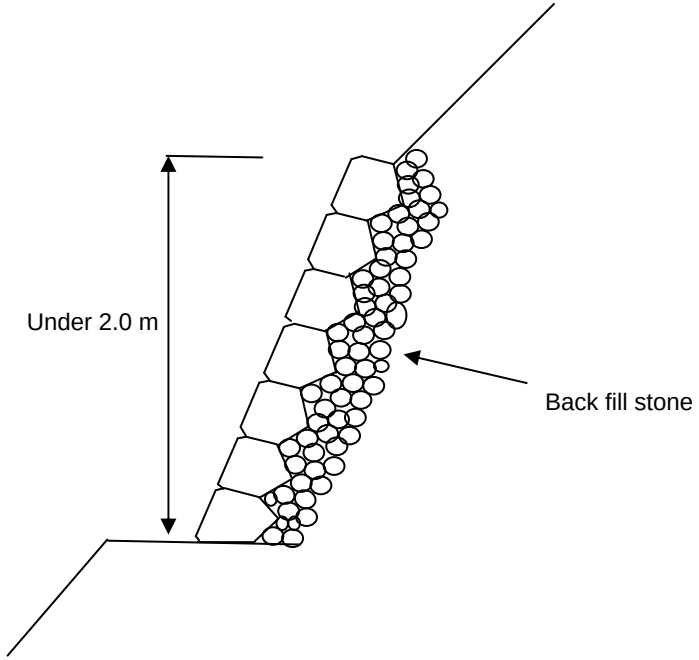
1) Gabion Retention Work



Side View

2) Dry Masonry Retention work

Side View

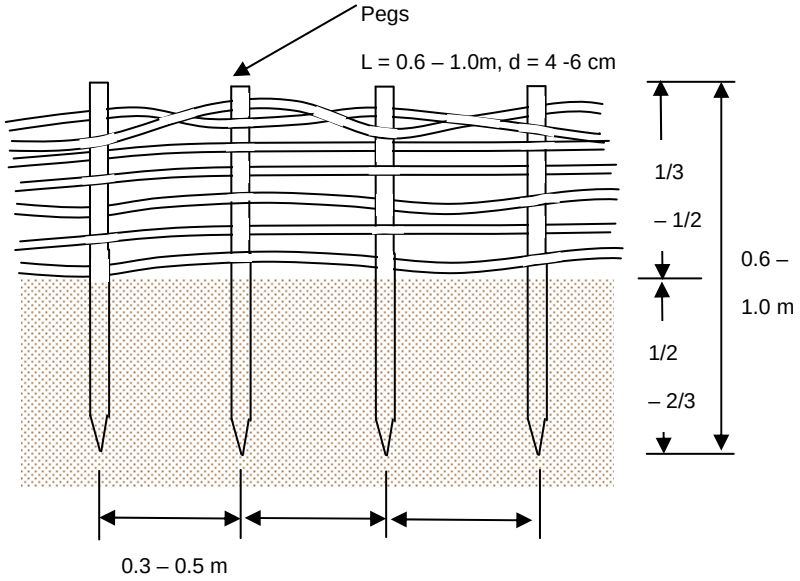


Annex-C Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Program

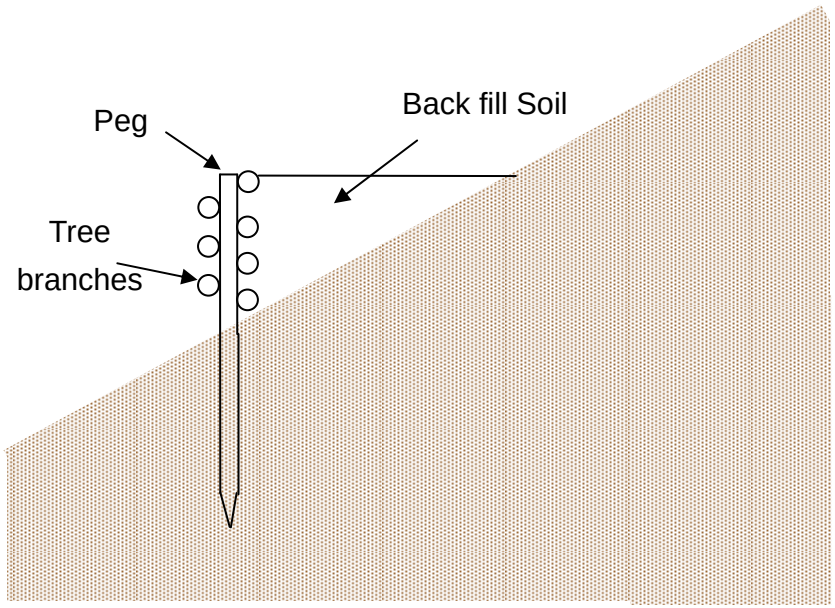
1. Slope Protective measures

3) Tree branch wattling

Front View



Side View

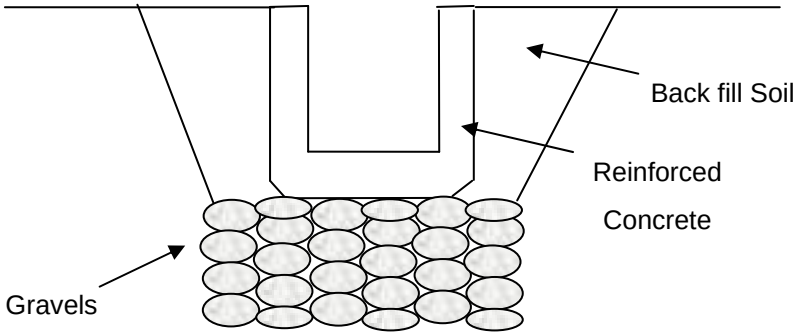


Annex-C Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Program

1. Slope Protective measures

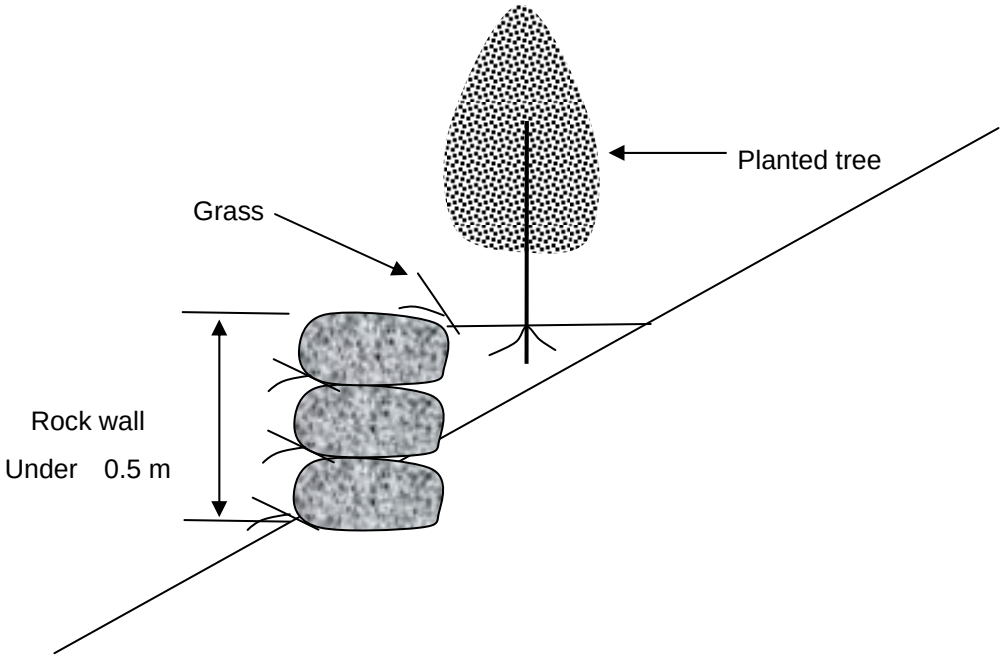
4) Open Water Channel Work

Front View



5) Contour rock walls with tree/grass plantation

Side View

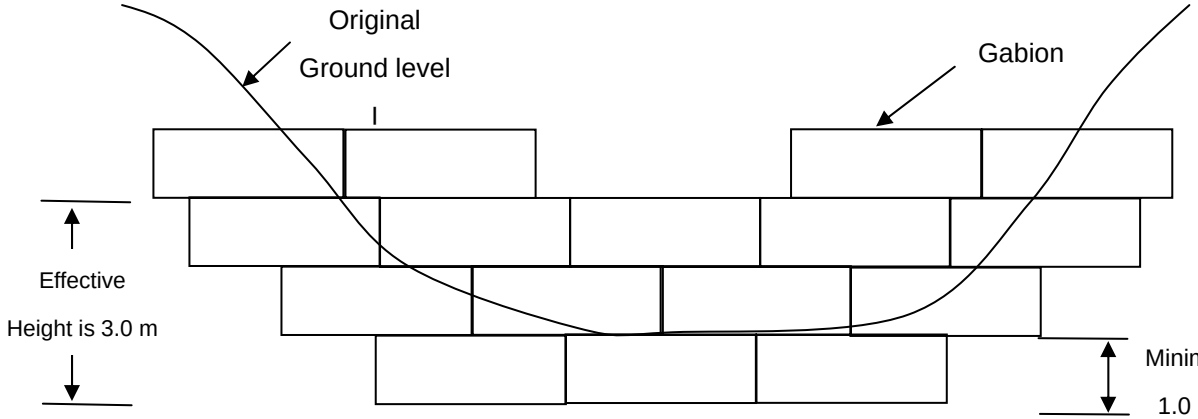


Annex-C Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Program

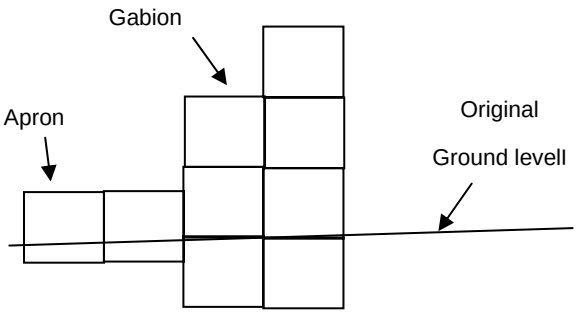
2. Sediment flow Control measures

1) Gabion Check Dam

Front View



Side View

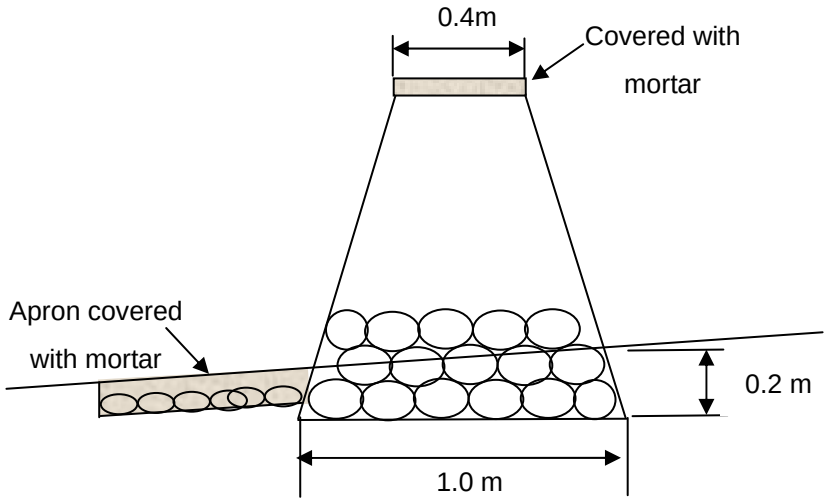


Annex-C Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Program

2. Sediment flow Control measures

2) Masonry Check Dam

Side View

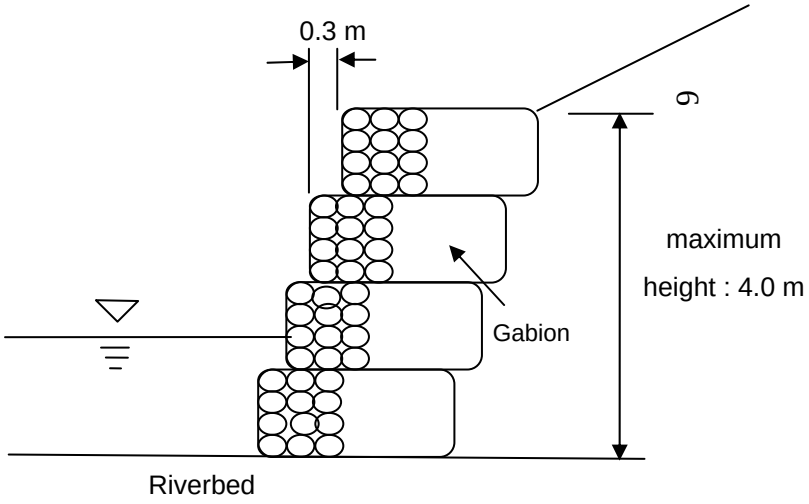


Annex-C Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Program

3. Riverbank Protective measures

1) Gabion revetment

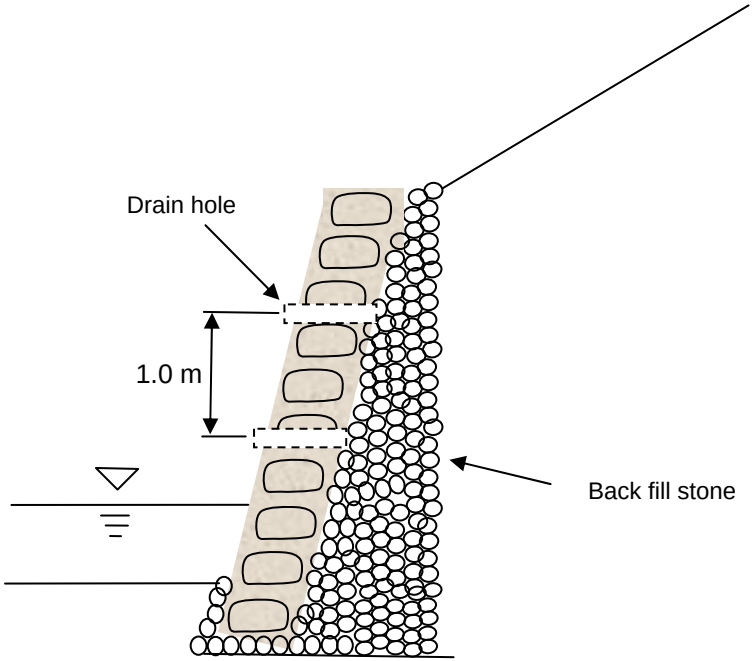
Side View



2) Wet/Dry Masonry revetment

- Wet Masonry

Side View

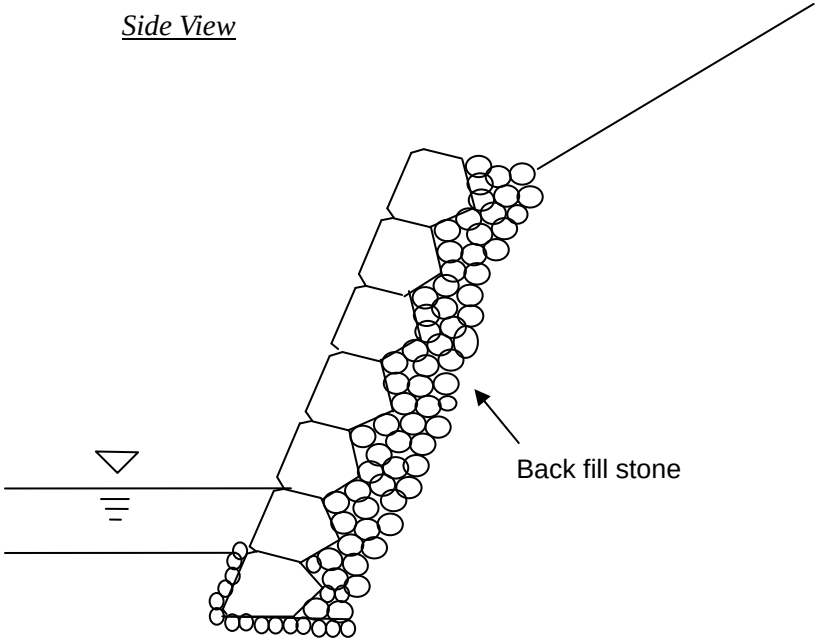


Annex-C Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Program

3. Riverbank Protective measures

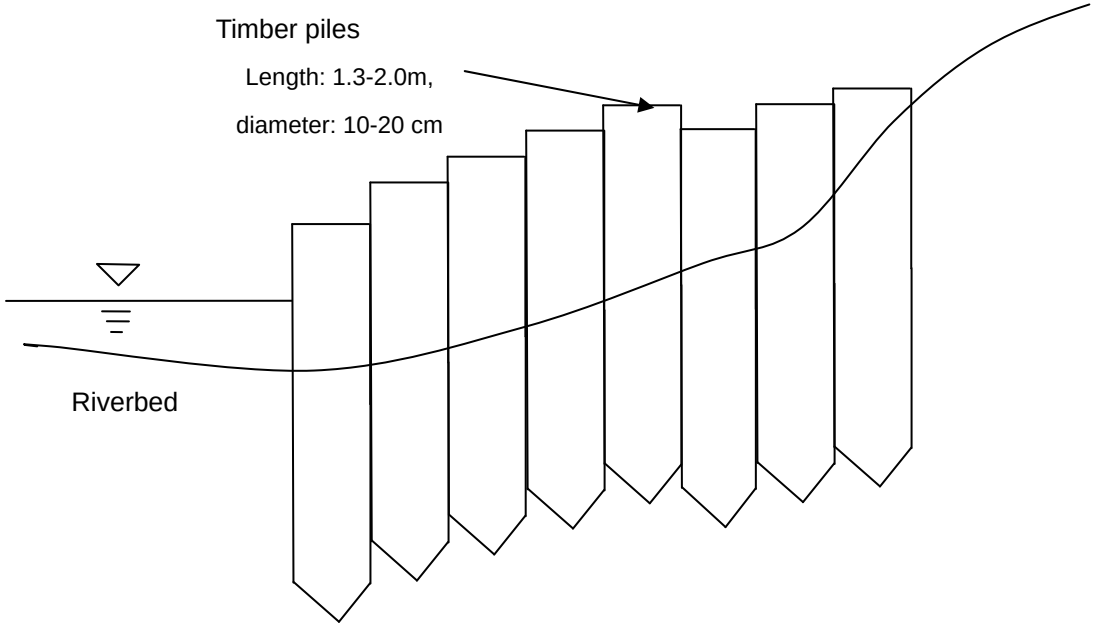
- Dry Masonry

Side View



3) Wooden Water flow Control Works

Front View



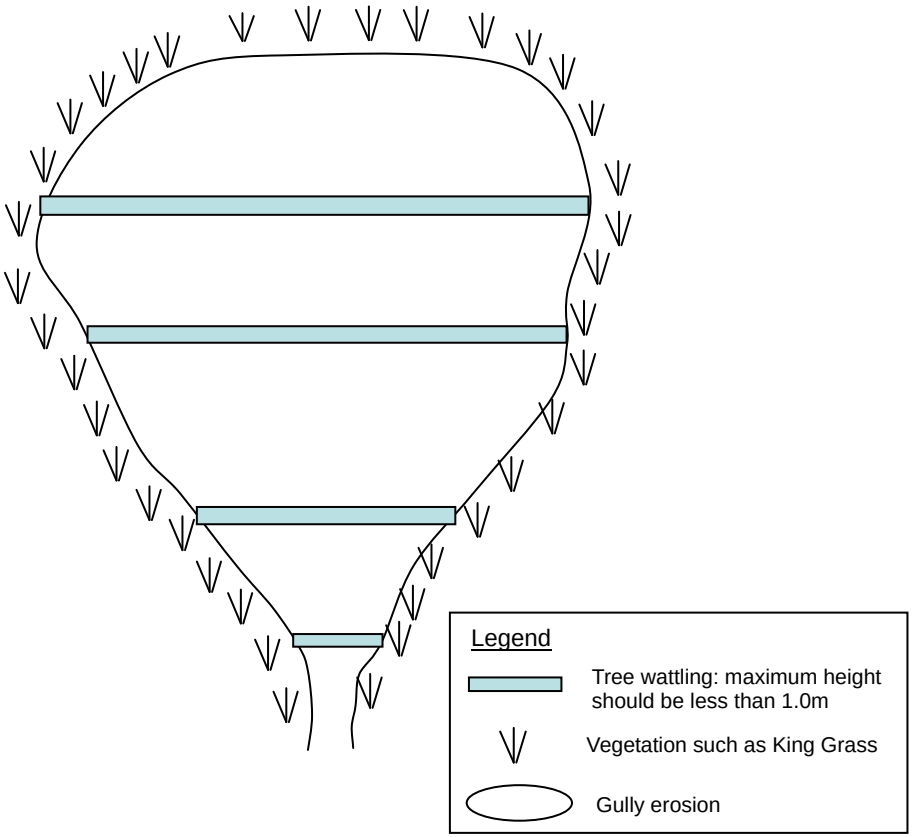
4) Tree branch wattling ··· The structure is same as that of Slope Protective Measure that is shown above in the Section 1,4).

Annex-C Typical Designs for Proposed Countermeasures of Slope Protection and Sediment Control Program

4. Initial Gully Control measures

Tree branch wattling*

Plan View



* The structure is same as that of Slope Protective Measure that is shown above in the Section 1,3)

Annex – D

Detailed Work Plans for the Sub-programs

Annex D Detailed Work Plans for the Sub-programs

D.1 Participatory Land Use Planning Sub-project (PLUP-SP)

D.1.1 Organization of Working Groups

(1) Selection of Responsible Persons/Potential Participants

Basically, the council members of suco will become members of the group. In addition, anyone who can satisfy the following criteria will be selected as a member.

- a person who is willing to participate in the sub-program
- a person who owns a large area in the village
- a person who can work in conflict management among villagers
- a person who is honest, trustful and impartial
- a person who are familiar with natural & social conditions of the village
- a person who can spare his/her time for the activities
- a person who are literate and can guide the elaboration process of making local regulations
- a person who can monitor the implementation of Tara Bandu

(2) Group Organization

In this step, NGOs/facilitators will encourage the identified responsible persons/participants of the sub-program to form a group designating group officials, preparing regulations of groups, and clarifying the functions of groups. In the group formation, the responsible persons/participants will discuss the following topics and issues with the assistance of NGOs/facilitators.

List of Possible Topics for Discussion

Sub-program	Issue to be discussed	Expected results
Participatory Land Use Planning Sub-program	➢ Selection of a group leader of the working group ➢ Roles and responsibilities of group leader ➢ Role and responsibilities of other members ➢ General functions of the group ➢ Rules of the group ➢ Activities of the group	➢ Select a group leader ➢ Define roles and responsibilities of a group leader ➢ Define roles and responsibilities of other members ➢ Define vision, mission, activities of the group ➢ Define a simple rule/regulation for managing a group

(3) Exposure Visits

In order for the members of the working group to have clear ideas of the sub-programs, NGOs/facilitators in coordination with MAF/NDF will organize an one-day exposure visit taking the members of the working group to Suco Faturasa, which is only the suco where the the PLUP-SP was introduced in the country. It is expected that the members of the working groups can actually see the effectiveness of the sub-program and understand what they will do in the course of the sub-program through the exposure visit.

D.1.2 Participatory Planning

The working group with the assistance of NGOs/facilitators will prepare two types of work plans, namely i) a work plan for the entire period (20 months) and ii) a work plan for the next 12 months. The following steps will be taken in the preparation of the work plans.

Process of Participatory Planning

Step	Participatory Land Use Planning
Step 1: Identification of target activities	• Enumerate information needed for preparation of a future land use plan and local regulations; • Review the results of the situation analysis; and • Identify the necessary activities to be taken to collect the missing information.
Step 2: Work Plan	• Make a schedule of the necessary activities; • Identify the necessary materials or tools and/or resource persons for the respective activities; and • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, and responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identify possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

After the participatory planning, MAF/NDF will estimate the necessary cost for the implementation of the work plans through the following processes.

Process of Cost Estimates

Items	Process to be taken
Step 4: Cost estimation	• Enumerate the necessary input (materials, tools, training courses, human resources, etc.); • Estimate the volume/quantity of each input; and • Estimate the cost required by multiplying the unit prices of inputs with the respective quantities.

D.1.3 Major Activities of the Sub-programs

(1) Review of the results of the situation analysis

In order to assess the current situation of the village, NGOs/facilitators with NDF will review the results of the situation analysis conducted prior to the implementation of the sub-program. Particularly, the following aspects are to be analyzed.

- Socio-economic aspects:
  - ✓ Demography (No. of households, Population, and Population increase)
  - ✓ Livelihoods (Main source of income, Income level, Wealthiness of the village, Issues on livelihoods, etc.)
  - ✓ Gender differences in household activities
- Institutional aspects:
  - ✓ Existing local institutions and community-based organizations and their relationships with the community
  - ✓ Roles and functions of the institutions/organizations
  - ✓ Any external assistance currently working in the village
- Current Land and Natural Resource Use Patterns:
  - ✓ Present land use (Resource map)
  - ✓ Traditional use of natural resources
  - ✓ Prevailing/Common practices for farm/land management
  - ✓ Land ownership
  - ✓ Seasonal changes in resource use
  - ✓ Customary rules/regulations on natural resource use
- Conflicts over Land/Natural Resources or Changes in Resource Use:
  - ✓ Any conflicts and solutions taken
  - ✓ Any changes in resource use
  - ✓ Reasons for recent changes
  - ✓ Extent of changes in natural resources (quantity / quality)

In the beginning of the sub-program, the results of the analyses of the above-mentioned aspects will be shared with community members so that they can also deepen the understandings of the current conditions of their village.

b. Transfer of information to Aerial Photo Maps

This session aims to prepare a present land use map of the village using an aerial photomap covering the target village. The working group will be assisted by NGOs/facilitators in transferring all the information and land marks depicted in a resource map, which will be prepared in the situation analysis. The following are the steps to be taken for the preparation of the present land use map of the village.

- Enlarge the aerial photo maps available in ALGIS to a scale of 1:5,000 to 1:10,000 and print an enlarged map;
- Encourage the group members and other community members to transfer all the information of the resource map to the enlarged aerial photo map. The information includes boundaries of village and sub-villages, settlements, forests, grasslands, shrubs, farmlands (fixed and shifting cultivation farms), coffee plantations, and any sacred places;
- Discuss the extent of degradation (open, sparse, medium, and dense) and the use of forests/areas, such as type of forest products collected (firewood collection, timber tree collection, grazing, etc.), type of trees (Ai bubur, Ai ru, Ai na, etc.), and other available resources associated with forests (such as honey, local wine, and water sources);
- Add the additional information on the aerial photo map;
- Take GPS measurement data of about 10 landmarks to confirm the locations; and
- Specify the ownership of the lands (if possible).

c. Sharing the result (a present land use map) with the entire community

The present land use map prepared in the above-mentioned session will be shared with other members. The objective of the session is to confirm the completeness/accuracy of the map and to start discussions on future land use in the village.

d. Digitizing the present land use map into GIS

NGOs together with NDF will digitize the present land use map prepared by the working group into GIS. In case there in no GIS specialist or GIS software in NGOs/NDF, they should coordinate with ALGIS (MAF) to tap its expertise and facilities.

e. Discussion on Future Land Use Options

The members of the working group will discuss the future land use options in their village with the assistance of NGOs/facilitators. The results of the situation analysis and the present land use map prepared by the preceding session will be used as reference data in the meeting. The meeting will be conducted in the following manner:

- Confirmation of the correctness/accuracy of the present land use map;
- Identification and enumeration of valuable natural resources available in the village;
- Confirmation of forest types in the village;
- Confirmation of the current forest management practices in the respective forest types;
- Prioritization of forest types based on their importance;
- Discussion on the major causes of forest and land degradation;

- Identification of the activities to be permitted and those not to be permitted in the respective forest types;
- Examination of the necessity of changing the present land use; and
- Compilation of the results of the discussions into a table showing the possible future land use and the corresponding land management practices.

f. Presentation of the Future Land Use Options

The working group with the assistance of NGOs/facilitators will have a plenary discussion with other community members on the ideas of the future land use options. The options that the participants accept will be written down for the preparation of a future land use map and local rules on natural resource management.

g. Preparation of a Future Land Use Plan

COnsidering the future land use options agreed on among the community members, the working group will prepare a future land use map. The detailed present land use map at a scale of 1/5,000 ~ 1/10,000 and an aerial photo map at the same scale are used as a base map. In addition, a slope map or a zoning map prepared by the JICA Study Team, which are also to be at the same scale, can be used for reference.

The boundaries of the future land use types will be drawn on a tracing paper laid on the base map. They will be further digitized for GIS processing. Based on the experience in the pilot project implemented by the JICA Study Team, the following land use types might be proposed by the working group.

- Protection forest (dense and medium forest)
- Regenerating forest (sparse forest)
- Coffee plantation
- Multiple-use forest (sandal wood, etc.)
- Protected water catchment forest
- Area to be used for permanent farm
- Area to be used for grazing
- Area to be used for shifting cultivation

At the same time, the group members will be encouraged to demarcate the following areas. The boundaries of the following areas are not necessarily the same with those of the above-listed land use types, since the bases of the classification differ from each other.

- Area to be protected from fire
- Area to be protected from animals
- Area that can be burned
- Area where animal can graze

h. Preparation of Local Rules on Natural Resource Management

Local rules on natural resource management are another core element of this sub-program, since they would be the bases for regulating the activities of local communities on forest and natural resource management in the village. At present, there is no government regulation on natural resource management; NGOs/facilitators should properly guide the working group to develop the balanced local rules. General village rules should also be discussed

simultaneously with those on natural resource management, so that the target village could have a complete set of the village regulations, which would be more effective in regulating the community's activities. In the pilot project implemented by the JICA Study Team, the following topics were discussed:

- Purpose of the regulations;
- General village rules;
- Future land use in the village;
- Use o natural resources;
- Community organization responsible for management;
- Income and expenditure; and
- Fines and penalties.

NGOs/facilitators will draft the village regulations in writing based on the discussions in this session.

i. Presentation of Future Land Use Plan and Village Regulations

After drafting the village regulations, the working group with the assistance of NGOs/facilitators will present the draft future land use map and village regulations to other community members. Any suggestions and comments from them will be reviewed and taken into account in the revision of the future land use map and village regulations. The revised regulations will be further presented to community members for ratification.

j. Organization of a Tara Bandu Ceremony

The working group in consultation with the village leaders will organize a Tara Bandu ceremony before villagers start burning the field for shifting cultivation. Necessary arrangement and coordination should be done by the group. MAF/NDF will bear part of the expenditures for the ceremony to make the ceremony effective. In the ceremony, the community leaders will announce the village regulations and future land use plan to all the community members and notify them to obey the regulations.

k. Agreement with MAF/NDCF and the Sub-district Administration Office

The working group with the village leaders will present and submit the village regulations with the future land use map to the Sub-district Administration Office, MAF district office and NDF. MAF/NDF and the Sub-district Office will exchange an agreement with the target village on the village regulations, so that the community can have support in enforcing the village regulations in the village.

l. Implementation and Monitoring

In order to implement/enforce the village regulations in an effective manner, NGOs/facilitators will organize a monitoring meeting with the working group once a month. Cases found in each aldeia in the month and necessary action to be taken against issues difficult to handle are discussed by the working group with the assistance of NGOs/facilitators as well as NDF in the monthly monitoring meeting.

NGOs/facilitators should take notes at the meetings, since the discussions will be used as precedents in solving issues/conflicts in the village in the future.

D.2 Tree Planting Promotion Sub-project (TPP-SP)

D.2.1. Organization of Beneficiaries Group and Orientation for the Sub-project

(1) Orientation of TPP-SP and formulation of farmers groups who join the program

In principle, this sub-program targets all households in a community. Meanwhile the following criteria have to be confirmed as prerequisites to the households who intend to join this SP.

- a person who is willing to participate in the sub-program;
- a person who can comply with the duties and responsibilities given to the members;
- a person who is willing to spare his/her time for the activities;
- a person who can use their farms for demonstration purposes;
- a person who can afford to risk failure take risks in pilot activities

In forming a group of members, the existing village organization (aldeia or sub-village) will be used as an implementing body.

A leader of the members group will be selected from among them. In most cases the Chef de aldeia would be selected by the community members as a leader. In addition, it is necessary to select core members from the members who lead the rest of them in implementing the activities. The following criteria should be used to select the core members.

- a person who can work for other members without any contribution;
- a person who is willing to spare his/her time for monitoring activities;
- a person who can use his/her own land for a demonstration plot for tree planting;
- a person who has coordination skills;
- a person who is trustful;
- a person who has a coordination skills; and
- a person who can read and write to keep records of materials distributed to the members.

(2) Group Organization

In this step, NGO/facilitators will encourage the identified responsible persons / participants of the sub-program to form groups by designating group officials, preparing regulations of groups, and clarifying the functions of groups. In group formation, the responsible persons/participants will discuss the following topics and issues with the assistance of NGO/facilitators.

List of Possible Topics for Discussion

Issue to be discussed	Expected results
➢ Selection of representatives (a group leader or coordinator) with selection criteria ➢ Roles and responsibilities of group leader ➢ Roles and responsibilities of core farmers and other participating farmers ➢ General functions of the group ➢ Rules of the group ➢ Activities of the group	➢ Select a group leader ➢ Define roles and responsibilities of a group leader ➢ Define roles and responsibilities of core farmers and other farmers (participants) ➢ Define vision, mission, activities of the group ➢ Define a simple rule/regulation for managing a group

(3) Exposure Visits

In or after the process of the above-mentioned activities, a local NGO will organize exposure visits to areas/villages where similar activities have been implemented successfully. Representatives of the groups will participate in these visits to get firsthand information from the people actually involved in the similar activities. Upon the return, a feed-back meeting should be organized at the suco to share experiences and learning with the entire group members. The following exposure visits are to be planned and done by a local NGO.

Proposed Exposure Visits

Sub-program	Place to visit	Purposes of visit	Duration of visit
Tree Planting Promotion Sub-program	Nursery of Portuguese cooperation project in Ermera district	➢ to learn how to select tree species suitable for planting by the households ➢ to learn how to set up a nursery and produce seedlings ➢ to share experiences of the people who joined the Portuguese project in coffee growing and tree-planting	2 days

D.2.2 Participatory Planning

NGO/facilitators cooperating with NDF and the district MAF staff will facilitate the discussion of the beneficiaries' groups to come up with work plans (an entire implementation plan and annual work plan) of the TPP-SP. The entire work plan covers the activities for 36 months (three years) including two batches of a series of trainings. The following table shows the necessary steps to be taken in the participatory planning for TPP-SP.

Process of Participatory Planning

Step	Things to do
Step 1: Identification of target activities	• Review tree planting activities in the past; • Review the present use of forest resources; • Identify tree species or other perennial crops in demand.
Step 2: Work Plan	• Determine tree species to be provided to the members; • Make sure the way to secure the seedlings in demand of the members; • Make a list of training courses to cover necessary activities for tree planting; • Make a schedule of training courses; • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, responsible persons/bodies, and materials procured; and
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

D.2.3 Implementation Plan

After the participatory planning, NGO/facilitators will estimate the cost/budget required for implementation of the work plans. The following are implementation plan proposed for this sub-program.

(1) Establishment of Demonstration Plots and Training on Tree Planting

A local NGO will also provide technical training on planting trees for community members of the villages, so that they can plant seedlings in their own lands in a proper manner. To do so, several types of demonstration plots will be established in each aldeia by using a part of the lands owned by core members. The following table shows possible demonstration plots can be introduced.

Proposed Demonstration Plots for Technical Training at Aldeia

Plot	Techniques to be demonstrated	Spacing	No. of sdlgs	Area
Timber trees	Proper design of timber tree plantation	2 x 3 m	100	about 0.1 ha
Fruit trees	Proper design of fruit tree plantation	5 x 5 m	100	About 0.25 ha
Fodder trees	Proper design of fodder tree plantation	2 x 3 m	100	about 0.1 ha
Shade trees with coffee	Proper design of coffee plantation	10 x 10 m 3 x 3 m	10 100	about 0.1 ha
Boundary trees	Proper design of boundary trees (Ziziphus and Casuarina)	0.3 x 0.1m 2.0 m	50 (Ziziphus sp.) 50 (Casuarina)	-

The demonstration plots will be used for venues of technical training for the members of each aldeia. It is proposed that technical training should address the following topics:

Outlines of Training Program (Tentative) on Tree Planting (per aldeia)

Training course	Techniques/Knowledge to be transferred	Span	Frequency
Compost making	How to make compost	4 days in total	once a month from June - Oct
Land Preparation	Hole digging/Pitting: Appropriate size and shape of pit depending on site conditions (Diameter: 30~60 cm , Depth: 30~60 cm, shape: round or square) Refilling: How to refill pits with soils Fertilization: How to apply compost Transport of seedlings: How to transport seedlings from the nursery to planting sites.	2 days	1 time at the onset of rainy season (Nov)
Planting	Typical/Basic designs of tree types How to plant trees	2 days	ditto
Re-planting	Typical/Basic designs of tree types How to plant trees	2 days	ditto
Tending and Maintenance	How to tend seedlings and maintain plantations (weeding and mulching) How to protect seedlings from animals	2 days in total	January, March and May

(2) Establishment of an Internal Monitoring System

One of the controversial issues discussed in the determination of the pilot project with the community was how to monitor the activities of each household. Based on the lesson learnt from the pilot project during 2008 and 2009, it is suggested that a monitoring system should be introduced in cooperation with NDF, the district MAF, extension staff and local NGO.

In this connection, it is proposed that NDF and district MAF supported by local NGO organize an internal monitoring team composed of chef de aldeia and core members on a sub-village level. At the same time, a local NGO will develop a registration book/form so that each aldeia can record the materials distributed by the sub-program. The registration book/form should include, but not limited to, the following information:

- Name of household who receives materials;
- Date of receipt;
- Type of materials (seeds, poly-bags, tools); and
- Quantity of materials (numbers, weight, etc.).

A local NGO will give orientation and guidance to the internal monitoring teams of each aldeia to understand how to use the registration book/form and what to be done by the monitoring team.

(3) Periodical Monitoring

One of the important tasks that a local NGO shall perform is to monitor the implementation of sub-program. Specifically, the following should be carried out in coordination with the internal monitoring teams of the village.

- Register the members who have received materials;

- Keep a record of materials (types and quantity of materials) and seedlings actually planted by each household
- Identify locations of areas where trees are planted by members
- Monitor the growth of trees planted by members (especially survival of trees)
- Provide technical advice/guidance to core and other members
- Resolve any technical and managerial issues that core and other members face

The monitoring team will monitor and record how many seedlings are actually planted by members. Therefore, the following information should be recorded by using the same registration book/form mentioned above.

- Number and type of tree planted;
- Date of planting trees;
- Place of trees planted; and
- Growth condition or survival one year after planting.

D.3 Seedling Production Sub-program (SP-SP)

SP-SP is in principle to be implemented with TPP-SP. It supports the community to produce the seedlings to provide to TPP-SP. Hence some activities listed in this section are designed to be conducted as a part of TPP-SP. Or if the target suco implements SP-SP solely, its activities will be carried out basically in the same way as described in TPP-SP though it is very rare case.

D.3.1 Organization of Beneficiaries Group and Orientation for the Sub-program

(1) Orientation of SP-SP and formulation of farmers groups who join the program

The farmers groups formulated in TPP-SP will also work for this sub-program. If the target suco will not conduct the TPP-SP but engage only SP-SP, then this activity will be done in the same way as that of TPP-SP.

(2) Group Organization

It is same as above.

D.3.2 Participatory Planning

NFD and the district MAF supported by NGO/facilitators will facilitate the discussion of the beneficiaries' groups to come up with work plans (an entire implementation plan and annual work plan) of the respective sub-programs. As described in the other pilot projects, the entire work plan will cover the activities for 39 months including two batches of a series of trainings. The following table shows the necessary steps to be taken in the participatory planning for SP-SP.

Process of Participatory Planning

Step	Things to do
Step 1: Identification of target activities	• Identify the potential sites for nursery plots; • Conduct a field survey to see the conditions of the potential sites and the water source; • Determine the demonstration plots; • Decide species/crops to be introduced in the demonstration plots (this will be done in TPP-SP); and, • Develop field layouts of nursery plots.
Step 2: Work Plan	• Identify necessary activities to be done for establishing the nursery; • Prepare and sign the rules and regulations to use the water source/tank for the seedlings production; • Make a list of training courses to cover the identified necessary activities to establish the nursery; • Make a schedule of training courses and works to be done to build the nursery and grow the

Step	Things to do
	seedlings; • Identify the necessary materials or tools and/or resource persons for the respective training courses; • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, and responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

D.3.3 Implementation Plan

After the participatory planning, NGO/facilitators will estimate the cost/budget required for implementation of the work plans. The following are implementation plan proposed for this sub-program.

(1) Construction: Land preparation, setting poles, fences & shades

The nursery will be constructed mainly using the local materials such as bamboo poles, palm leaves, wood sticks and poles. These materials are provided by the members as free while they are offered lunch for the works to collect these materials from their living area. Maintenance works will be done to repair shadings by palm leaves, to replace bamboo poles and sticks whenever they are damaged.

(2) Installation of water supply system

Water supply system will be installed in the nursery plot. Because growing the seedlings needs water supply, the plot to set up the nursery is placed within the access from the water source. Small basin at the water source and the tanks located nearby the seedbeds are connected with the bamboo pipes using the natural gravity. The main activities are:

1) To dig a basin at the water source and consolidate it with cement
2) To set up the water tank at the ground of seed beds to collect water for raising seedlings.
3) To prepare the bamboo pipes and connects each other to tap the water at the source and the water tank at seedbeds.

(3) Seedling production and maintenance

SP-SP provides several trainings needed in seedling production and maintenance to the group members. After provided the trainings the members have to continue watering and maintenance of seedlings until the time of planting comes with the onset of rainy season. Regular watering and maintenance such as weeding, pest control, etc. are not the training but practices to produce the seedlings. Because watering and maintenance in the dry season is a key to successful tree planting, the members are requested to take part actively in those works. They are provided lunch for it.

(4) Monitoring and Evaluation

The extension worker and NGO field support the group members to monitor the quantities of seedlings weekly using the regular monitoring format. At the time of distribution of seedlings, they also record the species and number of seedlings given to each member. At the annual evaluation

and planning workshop the group members will review and evaluate their activities and achievements attained and

D.4 Community-based Seed Extension Sub-program

D.4.1 Organization of Beneficiaries Group and Orientation for the Sub-program

(1) Selection of Responsible Persons/Potential Participants

In principle, this sub-program could support all households in a community. At least, however, the following criteria should be confirmed as prerequisite to be a member.

- a person who is willing to participate in the sub-program;
- a person who can comply with its duties and responsibilities;
- a person who is willing to spare his/her time for the activities;
- a person who can use their farms for demonstration purposes;
- a person who can afford to risk failure

In addition, it is necessary to select core farmers from the communities. The following criteria should be used for this selection,

- a person who has coordination skills
- a person who is able to read and write.

(2) Group Organization

In this step, NGO/facilitators will encourage the identified responsible persons / participants of the sub-program to form groups by designating group officials, preparing regulations of groups, and clarifying the functions of groups. In group formation, the responsible persons/participants will discuss the following topics and issues with the assistance of NGO/facilitators.

List of Possible Topics for Discussion

Issue to be discussed	Expected results
➢ Selection of representatives (a group leader or coordinator) with selection criteria ➢ Roles and responsibilities of group leader ➢ Roles and responsibilities of core farmers and other participating farmers ➢ General functions of the group ➢ Rules of the group ➢ Activities of the group	➢ Select a group leader ➢ Define roles and responsibilities of a group leader ➢ Define roles and responsibilities of core farmers and other farmers (participants) ➢ Define vision, mission, activities of the group ➢ Define a simple rule/regulation for managing a group

(3) Exposure Visits

In order for the participants to have clear ideas of the sub-programs, MAF and NGO/facilitators will organize exposure visits to areas/villages where similar activities have been implemented successfully. Representatives of the groups will participate in these visits and feed back their experiences and learning to the entire group members upon the return from the visits.

D.4.2 Participatory Planning

NGO/facilitators will facilitate the discussion of the beneficiaries' groups to come up with work plans (an entire implementation plan and annual work plan) of the respective sub-programs. As described in the other pilot projects, the entire work plan will cover the activities for 20 months and the annual work plan is for those from April 2008 to March 2009. The following table shows the necessary steps to be taken in the participatory planning for each sub-program.

Process of Participatory Planning

Step	Things to do
Step 1: Identification of target activities	• Identify the potential sites for demonstration plots; • Conduct a field observation survey to see the conditions of the potential sites; • Determine the demonstration plots; • Decide species/crops to be introduced in the demonstration plots; and • Develop field layouts of demonstration plots.
Step 2: Work Plan	• Identify necessary farming activities to be taken for development of demonstration plots; • Make a list of training courses to cover the identified necessary farming activities; • Make a schedule of training courses; • Identify the necessary materials or tools and/or resource persons for the respective training courses; and • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, and responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

D.4.3 Implementation Plan

After the participatory planning, NGO/facilitators will estimate the cost/budget required for implementation of the work plans. The following are implementation plan proposed for this sub-program.

a. Development of On-farm Demonstration Plots

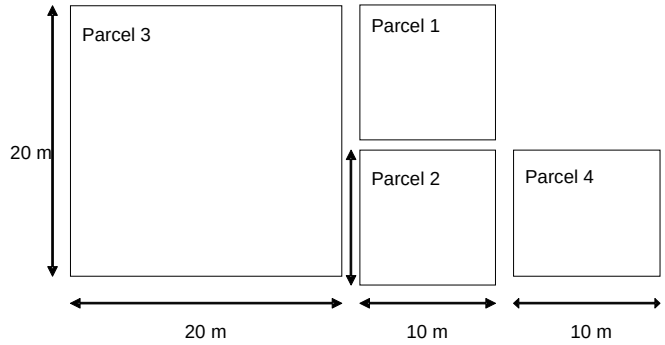
There are two types of on-farm demonstration plots to be established at core farmer's land with the assistance of MAF and NGO/Facilitators, according to type of varieties to be introduced. One is a plot for improved seeds and the other for outsourced local seeds. The sub-program can chose which kinds of seeds to be introduced, depending on the needs of a target community. It also could introduce both of them, if a targeted community is critically in shortage of quality seeds.

The major aims of the demonstration plots is to demonstrate the effectiveness of i) improved farming techniques, ii) improved seeds and/or outsourced local seeds, and iii) the combination of i) and ii).

With respect to local seeds, it is necessary to consider, on one hand, the risk that the participating farmers may have to bear and, on the other hand, the need to gain seeds, from the harvest for next season if found effective. Taking these issues into account, the following table shows the recommended design and size of a demonstration plot for improved seeds.

Size and Design of Demonstration Plot for Improved Seeds (1 plot/group)

Parcel	Demonstration Design	Size of Parcel
1	Improved seeds of maize and sweet potato under the current farming practices	10 m x 10 m (0.01 ha)
2	Improved seeds of peanut under the current farming practices	10 m x 10 m (0.01 ha)
3	Improved seeds of maize and sweet potato under the improved farming techniques	20 m x 20 m (0.04 ha)
4	Improved seeds of peanut under the improved farming techniques	20 m x 20 m (0.01 ha)



Parcel 1: Improved seeds of maize and sweet potato under the current farming practices

Parcel 2: Improved seeds of peanut under the current farming practices

Parcel 3: Improved seeds of maize and sweet potato under the improved farming techniques

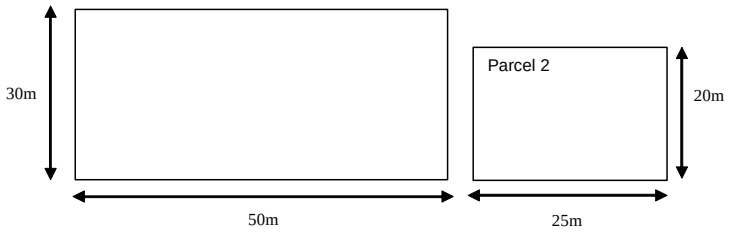
Parcel 4: Improved seeds of peanut under the improved farming techniques

Typical Design of Demonstration Plot for Improved Seeds

On the other hand, outsourced local seeds will be used for demonstration and also distributed to other participating farmers. The typical design of a demonstration plot for outsourced local seeds is outlined below.

Size and Design of Demonstration Plot for Outsourced Local Seeds

Parcel	Demonstration Design	Size of Parcel
1	Outsourced local seeds of maize, sweet potato and cassava under the improved farming techniques	30 m x 50 m (0.15 ha)
2	Outsourced local seeds of peanut under the improved farming techniques	20 m x 25 m (0.05 ha)



Parcel1: Outsourced local seeds of maize, sweet potatoes, cassavas under the improved farming techniques
Parcel 2: Outsourced local seeds of peanuts under the improved farming techniques

Typical Design of Demonstration Plot for Outsourced Local Seeds

b. Organization of Farmer's Field Schools (FFSs)

MAF and NGO/facilitators will organize a series of field training activities (Farmers' Field Schools: FFSs) for both core and other participating farmers at demonstration plots. Through the FFSs, the members of the working groups can learn all the practices required for effective farming. The following are training activities to be organized under the sub-program.

- Compost making
- Relatively simple soil conservation techniques e.g. counter compost
- Development and maintenance of farm
- Planting
- Harvesting and post-harvesting
- Seed-keeping / Sailo use

The training courses are summarized as follows.

Outlines of FFSs

Training course	Techniques/Knowledge to be transferred	Span /Aldeia	Span/ Suco	Frequency / One season
Compost making	How to make and maintain compost How to apply compost	3 days in total	15 days in total	1 time
Soil conservation measures (including use of farm tools)	How to make and use an A-frame How to use farm tools How to delineate contour lines using an A-frame How to make trenches in the plot	1 day	5 days	1 time
Developme nt of farm	How to prepare land How to design a farm	3 days	15 days	1 time
Planting	How to plant crops	1 day for maize; 1 day for peanuts and sweet potatoes	5 days for each	1 time for each
Managemen t of farm	How to maintain farms (weeding, control of pests/rodent)	Occasionally (at least 1 day)	Occasio nally (5 days)	Occasionally
Harvesting & Post-harvesting	How to harvest crops and measure yields of crops How to shell crops	1 days for each crop	5 days for each	1 time/
	How to keep seeds without post harvest damage	1 day		1 time

c. Replication of Trained Techniques

Participating farmers are expected to replicate what they have learned in training courses in their own farms after experiencing training courses at demonstration plots. MAF and NGO/Facilitators will assist participating farmers in replicating the trained techniques for outsourced local seeds in their farms by directly visiting farm yards.

d. Procurement and Provision of Materials and Tools

In order to establish on-farm demonstration plots and encourage participating farmers to replicate trained techniques, NGO/facilitators will procure the following materials and tools and provide them to core and participating farmers when a NGO organizes the respective training courses.

Materials required for the entire sub-program

Description	Unit	Q'ty		Training related	Source
		Per Batch/ aldeia /year	Total (3 suco for 3 years)		
1. Farm tools (Wheelbarrow & shovel)	Packs	30	900	Compost making	NGO
2. Materials for compost (animal dung, crop residues, top soils, etc.)	-	-		Compost making	Group
3.Farm tools (hoe, iron stick, machete)	Packs	30	900	Soil conservation measures	NGO
4.Seeds of Legume crops					
5. Materials for A-frame (Pole @ 1 m in length)	Poles	12	360	Soil conservation measures	Group
6. Materials for A-frame (string @ 1 m in length)	M	4	120	Pilot project	Group
7. Seeds of maize (improved seeds)	kg	30	1800	Planting annual crops	MAF/ SoL NGO
8. Seeds of maize (local seeds)	kg	90	5400	Planting annual crops	NGO
9. Seeds of sweet potato (improved)	Bundle <1	15	900	Planting annual crops	NGO
10. Seeds of sweet potato (local)	Bundle <1	45	2700	Planting annual crops	NGO
11. Seeds of peanut (improved)	Kg	113	6750	Planting annual crops	NGO
12. Seeds of peanut (local)	Kg	113	6750	Planting annual crops	NGO
13. Airtight material for storage	Unit	30	900	Post-harvesting	NGO

Note: <1 One bundle of sweet potato is equivalent to about 250 sticks.

D.5 Home Garden-Sub-program

D.5.1 Organization of Beneficiaries Group and Orientation for the Sub-program

(1) Selection of Responsible Persons/Potential Participants

In order to select participants, the following criteria should be considered. This sub-program is determined to support households that have access to water sources, especially women who tend to be disadvantaged with less power in social and economic activities and suffer from chronic energy deficiency.

- a person whose farm is located near a source of water or who can easily tap water from a source for his/her farm;
- a person who can comply with its duties and responsibilities;
- a person who is willing to spare his/her time for the activities;
- a person who can use their farms for demonstration purposes;
- a person who can afford to risk failure; and
- a person who is willing to share experience and knowledge with others.

In addition to the above, the following criteria could be applied to select core farmers.

- a person who has coordination skills; and
- a person who is able to read and write.

(2) Roles and Responsibilities of Members

NGO/facilitators will encourage community members of each aldeia to discuss the following topics/issues:

List of Possible Topics for Discussion

Issue to be discussed	Expected results
➢ Roles and responsibilities of core farmers ➢ Roles and responsibilities of other members ➢ Activities and expected outputs of the sub-programs ➢ Operation in demo plots	➢ Define roles and responsibilities of core farmers ➢ Define roles and responsibilities of core members ➢ Define the major activities of the sub-programs ➢ How to share the production in demo plots

(3) Exposure Visits

In or after the process of the above-mentioned activities, NGO/facilitators will organize exposure visits to areas/villages where similar activities have been implemented successfully. Representatives of the groups will participate in these visits to get firsthand information from the people actually involved in the similar activities. Upon the return, a feed-back meeting should be organized at the suco to share experiences and learning with the entire group members.

D.5.2 Participatory Planning

Formulation of an annual work plan is essential, as it guides the community in the implementation of the sub-programs. NGO/facilitators will assist the working group in formulating an entire work plan and annual work plan of the respective sub-programs. annual work plan will be prepared based on the activities from April 2008 to March 2009. The following table shows the necessary steps to be taken in the participatory planning.

Process of Participatory Planning

Items	Things to do
Step 1: Identification of target	• Identify the potential sites for demonstration plots; • Conduct a field observation survey to see the conditions of the potential sites; • Identify the possibility of joint management/operation of a vegetable farm by 2~3 farmers; • Determine the demonstration plots; • Short-list vegetables/crops to be planted in the village; and • Examine the applicability of the short-listed vegetables/crops to the demonstration plots.
Step 2: Work Plan	• Decide species/crops to be introduced in the demonstration plots; • Make cropping pattern/rotation of vegetables/crops to prevent a build-up of soil-borne diseases, pests and weeds; • Develop field layouts of demonstration plots. • Identify necessary farming activities to be taken for development of demonstration plots; • Make a list of training courses to cover the identified necessary farming activities; • Make a schedule of training courses; • Identify the necessary materials or tools and/or resource persons for the respective training courses; and • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identify local materials to be procured by local communities without charge; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

D.5.3 Implementation Plan

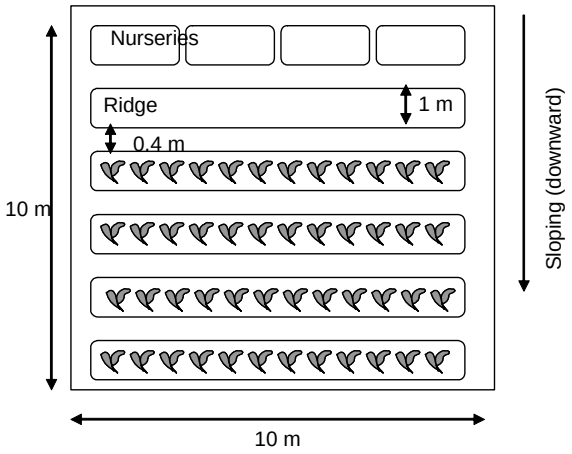
Following the participatory planning, NGO/facilitators will estimate the cost/budget required for the implementation of the sub-programs. The following are implementation plan proposed for this sub-program.

a. Size of On-farm Demonstration Plots

One demonstration plot will be established at core farmer's farm in each aldeia to demonstrate the effectiveness of new crops/vegetables with improved farming techniques. The specification of one demonstration plot is outlined below.

Specification of Demonstration Plot for Improved Seeds (1 plot/aldeia)

Items	Specification
Size	30 m x 30 m
Possible crops/vegetables	Vegetables (leaf vegetables, eggplant, tomato, potato), Beans (cow pea, red beans, etc.), Root crops (Kontas and Talas), and Banana
Pre-conditions	Availability of water source Easy to access from settlements



Typical Design of Demonstration Plot

b. Organization of Farmer's Field Schools (FFSs)

NGO/facilitators will organize a series of field training activities (Farmers' Field Schools: FFSs) for both core and other participating farmers at each aldeia using a demonstration plot. Through the FFSs, community members can learn all the practices required for vegetable farming. The following are training activities to be organized under this sub-program.

- Compost making
- Land preparation and use of farming tools
- Preparation of nurseries for vegetable seedlings
- Planting
- Maintenance of farm (e.g., pest management, weeding, and watering)
- Harvesting and collection of seeds
- Soil conservation techniques (optional)

Outlines of each training course are summarized as follows.

Training to be undertaken at the Demonstration Plot (per Aldeia)

Training course	Techniques/Knowledge to be transferred	Span per Aldeia	Frequency
Compost making	How to make, develop and apply compost	3 days in total	2 time/ batch (1 batch = 1year)
Land preparation (Use of farming tools)	How to use farming tools Hot to layout a vegetable farm How to make ridges	1 day	1 time/ batch
Nursery preparation	How to develop nurseries for onion, cabbage, lettuce, tomato, etc.	1 day	2 time/ batch
Planting	How to plant vegetable seedlings	1 day	2 time/batch
Management of farm	How to manage farms (weeding, watering, control of pests/rodent)	2 day	Around 4 times/batch
Harvesting and collection of seeds	How to harvest crops How to collect and store seeds for next cropping	1 day	2 times/ batch
Soil conservation measures (optional)	How to make an A-frame How to delineate contour lines using an A-frame How to make trenches in the plot How to use weeded grasses and other crop residues	2 days	1 time / batch
Food processing	How to prepare solar driers How to make dried foods	2 days	1 time/ batch

c. Procurement and Provision of Materials and Tools

In order to establish demo plots and encourage the farmers to replicate the techniques in their own farms, NGO/facilitators will provide necessary materials and tools to them.

The following table shows the standard volume of materials required for this sub-program. The estimation is made based on the assumption that around 20 households in one aldeia would engage in the sub-program.

Materials required for the entire sub-program

Description	Unit	Q'ty		Training related	Source
		Group	Total		
1. Materials for compost (animal dung, crop residues, top soils, etc.)	-	as required	as required	Compost making	Group
2. Wood/Bamboo poles for nursery (8m)	Poles	5	150	Nursery preparation	Group
3. Plant fronds for nursery	Kg	20	600	Nursery preparation	Group
4. Seeds of vegetables	Packs*kinds	20	600	Nursery preparation	NGO
5. Seeds of beans	kg*kinds	30	900	Nursery preparation	NGO
6. Seed storage materials (e.g. plastic sheet)	Unit	20	600	Post-harvesting	NGO

Note: There is no provision of farming tools since they are provided by the Tree Planting Promotion Sub-program.

Optional

Description	Unit	Q'ty <1		Training related	Source
		Group	Total		
Solar Dries	Unit	1	30	Food Processing	NGO
Materials for A-frame (Pole @ 1 m in length)	Poles	18	18	Soil conservation measures	Group
Materials for A-frame (string @ 1 m in length)	M	6	6	Pilot project	NGO

Note: A-frame can be shared among the members of aldeia.

d. Monitoring and Regular Guidance

After FFSs at the demonstration plots, the beneficiaries' groups would continue to operate their home gardens. It is necessary to provide day-to-day coaching, so that the beneficiaries can capacitate themselves to cope with a number of issues in home gardening. In order to do so, NGO/facilitators can corporate with MAF and extensionist for regular monitoring to provide continues technical support to them.

e. Annual Evaluation and Planning

At the end of 1 batch of implementation, NGO/facilitators will organize an evaluation workshop with the beneficiaries of the sub-program. In the workshop, the following are to be discussed and confirmed.

Evaluation of Home Garden Sub-program:

- Extent of economic contribution to livelihoods
- Positive and negative impacts of the sub-program
- Willingness to continue to produce vegetables and other crops introduced by the sub-program
- Any plans to expand their gardens or develop a new one
- Willingness to share knowledge and experience with other community members

In addition to the workshop, there will be a need to conduct a questionnaire survey to evaluate the feelings of the beneficiaries in a quantitative manner. MAF and NGO/facilitators will develop a survey format and conduct an interview survey together with the workshop.

D.6 Grazing Control with Protein Bank Sub-program

D.5.1 Organization of Beneficiaries Group and Orientation for the Sub-program

(1) Selection of Responsible Persons/Potential Participants

This sub-program in principle covers all households in one aldeia, as long as the qualification of participants meets the following criteria.

- a person who is willing to participate in training courses on the sub-program;
- a person who can comply with its duties and responsibilities;
- a person who is willing to spare his/her time for the activities;
- a person who can use their farms for demonstration purposes;
- a person who like to replicate what they would learn from training courses given by the sub-program;
- a person who can support any other farmers who like to introduce the demonstrated technologies

(e.g., biological control of Chromolaena); and
- a person who can afford to risk failure.

(2) Group Organization

For the formation of group, the responsible participants will discuss the following topics and issues with the assistance of MAF and NGO/Facilitators.

List of Possible Topics for Discussion

Issue to be discussed	Expected results
➢ Selection of representatives (a group leader or coordinator) with selection criteria ➢ Roles and responsibilities of group leader ➢ Roles and responsibilities of core farmers and other participating farmers ➢ General functions of the group ➢ Rules of the group ➢ Activities of the group	➢ Select a group leader ➢ Define roles and responsibilities of a group leader ➢ Define roles and responsibilities of core farmers and other farmers (participants) ➢ Define vision, mission, activities of the group ➢ Define a simple rule/regulation for managing a group

(3) Exposure Visits

In order for the participants/beneficiaries of the Grazing Control with Protein Bank / Waste Pasture Rehabilitation and Community-based Seed Extension Sub-programs to have clear ideas of the sub-programs, a local NGO will organize exposure visits to areas/villages where similar activities have been implemented successfully. Representatives of the groups will participate in these visits and feed back their experiences and learning to the entire group members upon the return from the visits. The following exposure visits are to be planned and done by a local NGO.

D.6.2 Participatory Planning

NGO/facilitators will assist the discussion of the beneficiaries' groups in preparing work plans (an entire implementation plan and annual work plan) of the sub-programs. following table shows the necessary steps to be taken in the participatory planning for each sub-program.

Process of Participatory Planning

Step	Things to do
Step 1: Identification of target activities	• Review the future land use plan/map that indicate the areas to be protected from fire and animal grazing; • Developing possible measures for grazing control • Identify the potential sites for protein banks; • Conduct a field observation survey to see the conditions of the potential sites; • Determine the demonstration plots for biological control and protein banks; and • Develop field layouts.
Step 2: Work Plan	• Make a list of training courses to cover the identified necessary activities; • Make a schedule of training courses; • Identify the necessary materials or tools and/or resource persons for the respective training courses; • Identify the activities necessary for rehabilitating the wasteland dominated by Chromolaena; and • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, and responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

D.6.3 Implementation Plan

After the participatory planning, NGO/facilitators will estimate the cost/budget required for implementation of the work plans. The following are implementation plan proposed for this sub-program.

a. Fencing with planning

If the community decides to make a fence to prevent livestock from trespassing into protected area, NGO/facilitators will assist a working group in establishing it. Since the construction of fence tends to be costly, it is necessary to identify critical passes and take the measure against them rather than covering a wide range of areas. At the initial stage, the sub-program installs a tentative fence using external materials such as iron stick and iron ropes, while planting the early-growing species of trees e.g. casuarinas and waiting for them to grow. After the planted trees become live fence, the temporary fence is removed and set for another areas.

Necessary Materials for Fence for Grazing Control

Description	Unit	Q'ty (Suco)	Source of inputs
Seedling of early-growing trees(e.g. casuarinas)	seedling	1,000	NGO
Bamboo pole for low parts of fence	pole	As required	Group
Fencing material (Nails, small wire)	Set	As required	NGO
Iron pole (for critical area) (around 1.25-1.5m)	pole	500	NGO
Iron Wire Role (1 role = 35 m) (for 5 km:5 lines)	Role	150	NGO
Wood Pole (around 2.0 m)	pole	500	NGO

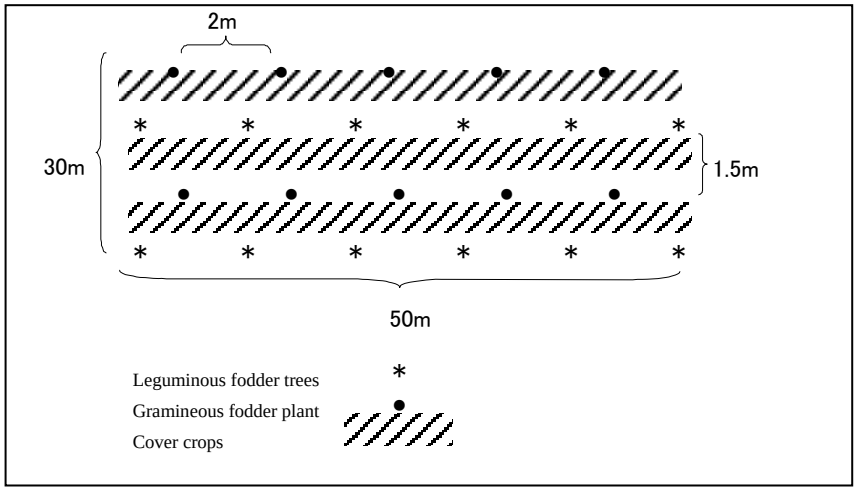
a. Development of Demonstration Plots for Protein Banks

NGO/facilitators will assist a working group in developing two demonstration plots for protein bank (legume-based fodder bank) in each aldeia. Since each aldeia currently has one or two animal gathering plots for periodical counting, it is recommended that a demonstration plot for protein bank be established near to such a plot to save labor and time for collecting animals.

A typical design of the protein bank is outlined below.

Specification of a typical demonstration plot

Items	Specification
Size	0.3 ha per Aldeia (2 demo plots/ Aldeia: one plot of 0.15 ha for each year) 0.3 ha x 5 aldeia = 1.5 ha in one Suco
Conditions of the possible plots	Area close to the existing animal gathering plot Area where a water source can be easily tapped
Others	A signboard to be put



Typical Design of Demonstration Plot for Protein Bank

The following table shows the possible species of trees and crops to be introduced to demonstration plots of protein bank.

Typical Design of Demonstration Plot for Protein Bank

Scientific name	Family	Local Name
Gliricidea maeulata	Leguminosae	Gamal
Caliandra callothysus	Leguminosae	Kariandra
Sesbania spp.	Leguminosae	Ai turi
Leucaena leucocephala	Leguminosae	Lamtoro
Pennisetum purpureum	Gramineae	King Grass

In order to develop demonstration plots for protein bank, the following materials and seeds/stubbles will be procured and provided for core farmers' groups.

Necessary Materials to be Procured for Demonstration for Protein Bank

Description	Unit	Q'ty (plot)	Q'ty (Suco)	Source of inputs
Farm tools for mechanical weeding (e.g. iron stick, machete)	set	30	300	NGO
Seeds of leguminous fodder trees (e.g. Gamal, Lamtoro, and Kariandra)	kg	3	30	NGO
Cuttings of king Grass	bundle	3	30	NGO
Bamboo Pole	Pole	100	1,000	NGO/Group
Wood Pole	Pole	200	2,000	NGO
Other materials (e.g. Nail, Hammer)	Set	1	30	NGO

b. Development of Demonstration Plots for Biological Control of Chromolaena

In the context of livestock in Timor Leste, it is critically needed to control the growth of chromolaena. If the community intends to take a biological control using larvae of a fly (*Lalar fisue*), as recommended and promoted by MAF, the first thing for the community to do is to comprehend the meaning and mechanism of the biological control. In this regard, the dissemination of information on this measure is the starting point for implementation. After this process, MAF and NGO/facilitators provide a series of technical training to participants. To this end, the sub-program will develop a demonstration plot with the following specifications.

Specification of a demonstration plot

Items	Specification (typical design)
Size	100 m x 100 m (1ha) for one Aldeia (1ha x 4 aldeia = 4 ha in the village)
Conditions of the possible plots	Abundant area covered with Chromolaena Area owned by members Close to the settlements Within the areas to be protected from fire Areas that will not be used for shifting cultivation in next several years
Others	A signboard to be put

In order to establish demonstration plots, a local NGO will coordinate with the MAF (especially the Protection Field Division under the National Directorate of Research and Extension) and the National University of Timor-Leste (UNTL) and undertake the following activities/arrangements.

Step 1: Assist and encourage core farmers to visit the Multiplication Field Insectaries (MFIs) of MAF such as Suco Tibar in Liquica and to collect larvae of *Lalar fisur* (galls) at the MFIs;

Step 2: Assist core farmers in releasing / tying bunches of galls collected from the MFIs with several plants of Chromolaena in the demonstration plots;

Step 3: Encourage core farmers and other local communities to protect the demonstration plots from burning; and

Step 4: Maintain the demonstration plots as the community Multiplication Field Insectaries in the village.

c. Technical Training

A local NGO will provide technical training for core farmers using demonstration plots for both biological control of Chromolaena and protein bank. The following training courses will be organized in the course of the implementation of the sub-program.

Training Courses for Protein Bank (per Aldeia)

Training course	Type of training	Techniques/Knowledge to be transferred	Span	Frequency
Seedling production of fodder trees and crops	OJT	How to prepare nursery and seedling for fodder crops and trees	2 day	1 time/batch
Mechanical weeding of Chromolaena	OJT	How to weed chromolaena by a mechanical method	1 day	1 time/batch
Making temporary fence for protein bank	OJT	How to make fences	2 days	1 time/batch
Planting fodder trees and crops	OJT	How to prepare land How to plant fodder trees and crops	2 days	1 time/batch
Maintenance of protein banks	OJT	How to manage and maintain protein banks	1 day	1 time/batch
Compost making	OJT	How to make and apply compost	2 times	1 time/batch
Distribution of seedling to the members	OJT	Hot to collect stumbles and transfer seedling to members	2 days	1 time/ imple.period

Training Courses for Biological Control of Chromolaena

Training course	Type of training	Techniques/Knowledge to be transferred	Span	Frequency
Technical guidance on biological control	Lecture type	The following information to be given: - phenological characteristics of Chromolaena - positive and negative aspects of Chromolaena - how to deal with Chromolaena - life cycle of gall fly - when, where and how to collect larva - when, where and how to release larva - adverse effect of firing and smoke	1 days	1 time
Collection of larva (galls) from MFIs at Tibar	OJT	How to collect galls	1 day	1 time
Release of galls (Tying bunches with Chromolaena)	OJT	How to release galls (How to ties a bunch of gall with Chromolaena) How to maintain the field	1 day	1 time

d. Annual Evaluation and Planning Workshop

NGO/facilitators will organize an annual monitoring workshop to enable the beneficiaries' groups to review and monitor their activities and to prepare an annual plan for the next year by themselves.

For this sub-program, the following points are to be discussed in the workshop

- Positive and negative impacts of the sub-program (such as improvement of nutrition conditions of animals, mortality rate of animals, etc.)
- Density of Chromolaena in the demonstration plots;
- Willingness to expand the biological weed control method to other areas if any;
- Willingness to expand the protein bank; and
- Willingness to share knowledge and experience with other community members.

If there is a perspective for MAF and NGO/facilitators to expand activities, the beneficiaries' group of this sub-programs will organize a feedback workshop to share the experiences and knowledge gained through the implementation of the pilot project with other community members so that other farmers will have interest in the introduced practices. In this workshop, the groups will make a presentation on the following aspects.

- Outlines of the sub-programs including the rationale for implementation in relation to watershed management
- Results and lessons learnt from the implementation of sub-programs
- Plan for replication and explanation with the assistance of a local NGO

D.7.1 Organization of Beneficiaries Group and Orientation for the Sub-program

(1) Identification of Potential Participants

A local NGO will organize a meeting with the community members of the village and facilitate them in selecting potential participants for the Sustainable Upland Farming Promotion sub-program. In selection of beneficiaries, the following guidelines are to be used.

- a person who is willing to participate in training courses on sustainable upland farming (sloping agricultural land management) techniques;
- a person who can comply with its duties and responsibilities;
- a person who is willing to spare his/her time for the activities;
- a person who can use their farms for demonstration purposes;

- a person who like to replicate what they would learn from training courses given by the sub-program in their own farms; and
- a person who can afford to risk failure.

(2) Group Organization

Having selected potential participants, a local NGO will facilitate a series of meetings with the participants to form beneficiaries' groups. The following table shows topics to be discussed and expected results made through the discussions.

List of Possible Topics for Discussion

Sub-program	Issue to be discussed	Expected results
Sustainable Upland Farming Promotion Sub-program	➢ Selection of representatives (a group leader or coordinator) with selection criteria ➢ Roles and responsibilities of group leader ➢ Roles and responsibilities of core farmers and other farmers (participants) ➢ General functions of the group ➢ Rules of the group ➢ Activities of the group	➢ Select a group leader ➢ Define roles and responsibilities of a group leader ➢ Define roles and responsibilities of core farmers and other farmers (participants) ➢ Define vision, mission, activities of the group ➢ Define a simple rule/regulation for managing a group

(3) Exposure Visits

Exposure visits are to be organized like the other sub-programs. A local NGO will take representatives of the groups to areas/villages where similar activities have been implemented successfully, so that they could have clear ideas of the sub-programs. All the experiences and learning from exposure visits will be shared with the entire group members in a feed-back meeting upon the return from the visits. The following exposure visits are to be examined and planned by a local NGO.

Proposed Exposure Visits

Sub-program	Place to visit	Purposes of visit	Duration of visit
Sustainable Upland Farming Promotion Sub-program	Suco Manelima	➢ to see effectiveness of soil conservation measures ➢ to learn how to apply soil conservation measures ➢ to share experiences that the precursors have had.	2 days

D.7.2 Participatory Planning

A local NGO will assist the beneficiaries' groups for the sub-programs in the preparation of work plans for each sub-program. As described in the plans for other pilot projects, an entire work plan for 20 months and an annual work plan from April 2008 to March 2009 will be prepared. The following table shows the necessary steps to be taken in the participatory planning.

Process of Participatory Planning

Step	Sustainable Upland Farming Promotion
Step 1: Identification of target	• Identify the potential sites for demonstration plots; • Conduct a field observation survey to see the conditions of the potential sites; • Determine the demonstration plots; • Decide types of soil conservation measures to be introduced; and • Develop field layouts of demonstration plots.
Step 2: Work Plan	• Identify necessary farming activities to be taken for development of demonstration plots; • Make a list of training courses to cover the identified necessary farming activities; • Make a schedule of training courses; • Identify the necessary materials or tools and/or resource persons for the respective training courses; and

	• Develop a work plan indicating work items, outlines of activities, time schedule, period of work, and responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

Likewise, a local NGO will estimate the cost/budget for implementation of the work plans in the same manner used for the other sub-programs, namely,

- Enumerate the necessary input (materials, tools, training courses, human resources, etc.);
- Estimate the volume/quantity of each input; and
- Estimate the cost required by multiplying the unit prices of inputs with the respective quantities.

D.7.3 Implementation Plan

(1) Sustainable Upland Farming Promotion Sub-program

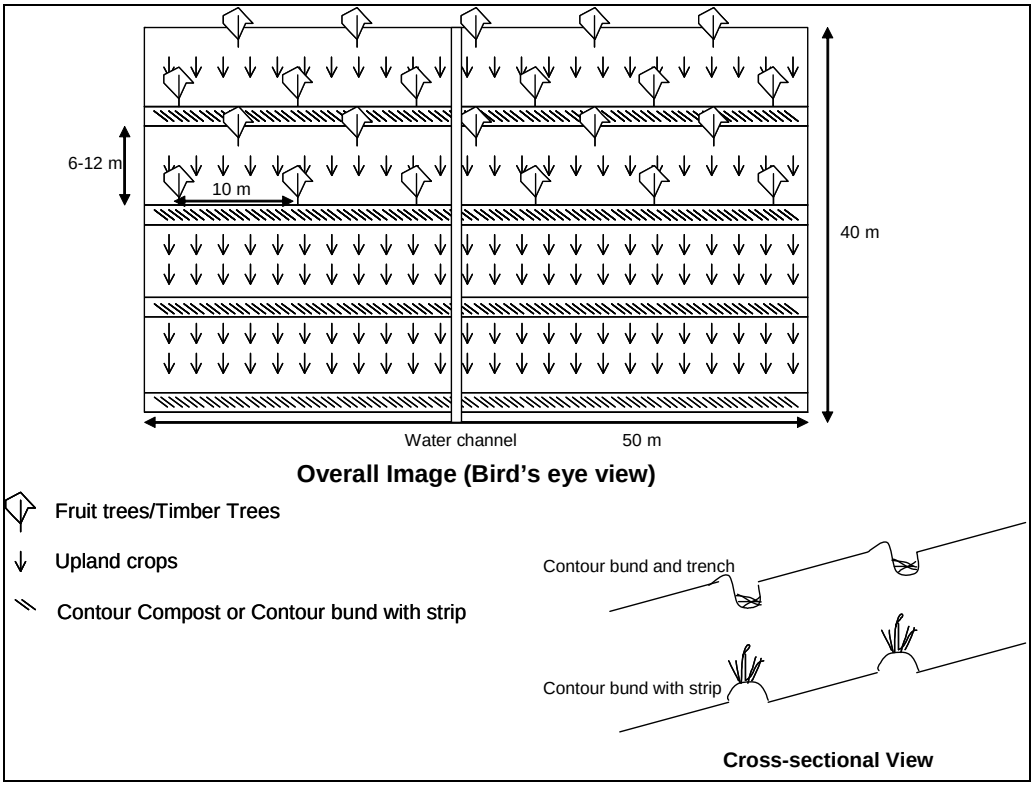
a. Development of demonstration plots

Two types of demonstration plots, i) contour compost/contour bund with hedgerows and ii) bench terrace, will be established in collaboration with core farmers at each aldeia. A local NGO will provide necessary technical guidance and materials in developing the demonstration plots, while core farmers will provide the lands for the plots and laborers for construction and maintenance.

Typical Physical Designs of Demonstration Plots

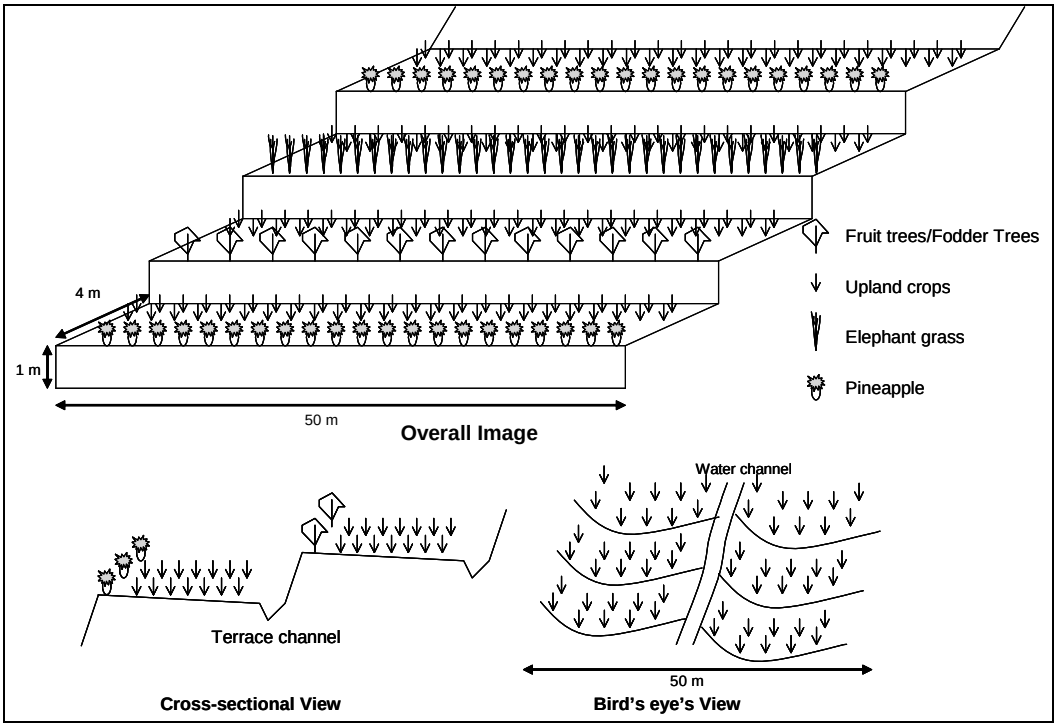
Type 1: Plot with contour composts or contour bunds with strip

Specification	Area (ha)
➢ Make shallow trenches or bunds along contours at intervals of 12 m (for 0-25%) or 6 m (for 25-40%) ➢ Put weeded grasses or crop residues in the trenches or plant grasses/headgrows (e.g., vetiver grass or elephant grass) on bunds ➢ Crop upland crops along contour line (contour cropping) ➢ Plant fruit or timber trees at the space of 10m x 5m or 10m x 10m making a triangular shape in one of rows in the plot ➢ Plant trees along boundaries	0.2 ha/plot 40m x 50m for area with 25-40% slopes



Type 2: Plot with bench terrace

Specification	Area (ha)
➢ Construct bench terraces with vertical intervals of 1m. (In the case of 25% slope, the horizontal interval between terraces is about 4 m.) ➢ Plant hedgerows (fodder grasses, fruit/fodder trees, and pineapple) at the edges of terraces (If fruit trees are used for a hedgerow, the trees should be planted at the space of 5 x 5 m.) ➢ Make terraces inward-sloping and put terrace channels at the foot of upslope terrace bank ➢ Crop upland crops along contour line (contour cropping)	0.1 ha/plot (20 m x 50m for area with the slope of 25%)



In the two demonstration plots described above, the following crops will be planted and demonstrated.

- Maize
- Peanut
- Taro
- Pineapple (hedgerow)
- Fodder trees (Gamal, Sesbania grabdufloa, Cariandra, Elephant/Vetiver grasses)
- Fruit/Timber trees

b. Organization of Farmer's Field Schools

A local NGO will organize field training courses (Farmers' Field Schools: FFSs) at demonstration plots in collaboration with core farmers. Other participating farmers will be trained on all the practices from making contour lines to harvesting crops at demonstration plots. The following are training activities to be organized under the sub-program.

Outlines of Training Program (Tentative)

Training course	Techniques/Knowledge to be transferred	Span	Frequency
Effect of land conservation techniques	Effect of soil conservation measures Types of soil conservation measures to be applied General ideas about soul conservation measures	1day	1 time
Designing of plot	Typical/Basic design of demonstration plots How to design a farm with soil conservation measures	2 days	1 time
Compost making	How to make compost How to apply compost	4 days in total	once a month
Use of A-frame	How to make and use an A-frame How to delineate contour lines using an A-frame	2 days	1 week
Contour composting	How to make trenches in the plot How to use weeded grasses and other crop residues	3 days	1 week
Terrace making	How to make bench terraces with terrace channels and water courses properly	5 days	1 week

Training course	Techniques/Knowledge to be transferred	Span	Frequency
Development of hedgerows	How to develop hedgerows in terraces Species of trees/grasses suitable for hedgerows	1-2 days	1 time
Land preparation	How to prepare farmland using farming tools and compost	2-3 days	1 week
Planting fruit/timber trees	How to plant trees (e.g., hole digging, planting, staking, etc.) Planting space	1 day	1 time
Inter-cropping	How to inter-crop annual crops in the area with trees	1 day	1 time
Planting crops	How to plant crops	1 day	1 time
Management of farm	How to manage farms (weeding, control of pests/rodent) Effect of improved varieties	16 days	once a week for 4 months
Harvesting	How to harvest crops	1 day	1 time
Post-harvesting	How to store corn without post harvest damage	1 day	1 time
Maintenance of plot	How to maintain terraces and contour compost How to use green manure	4 days	2 months

c. Provision of Materials/Tools to Core and Other Participating Farmers

In order to develop a set of demonstration plots at core farmers' farms and to encourage other participating farmers to replicate the techniques learned through the FFSs in their own farms, the following tools/materials shall be procured and provided for them when they have the relevant training courses.

Materials required for the entire sub-program

Description	Unit	Q'ty		Training related	Source
		CF	Total		
1. Farm tools (iron stick, hoe, and spade)	Packs	4	120	Compost making and Contour composting/ Terrace making	NGO
2. Wood poles for A-frame (1m)	Poles	12	360	Use of A-frame	Group
3. String for A-frame	m	4	120	Use of A-frame	NGO
4. Seeds of maize	kg	16	180	Planting crops / Inter-cropping	NGO
5. Seeds of peanut	kg	40	1,200	Planting crops / Inter-cropping	NGO
6. Seedlings of taro	sdlgs	80	2,400	Planting crops / Inter-cropping	NGO
7. Suckers of pineapple	suckers	200	6,000	Development of hedgerows	NGO
8. Seeds fodder trees	kg	240	7,200	Development of hedgerows	NGO
9. Seedlings of Fruit trees	sdlgs	40	1,200	Planting fruit/timber trees	NGO
10. Seedlings of Timber trees	sdlgs	40	1,200	Planting fruit/timber trees	NGO

Note: <1 One bundle of sweet potato is equivalent to about 100 cuttings. One bundle of cassava stick is equivalent to about 50 pieces of 1m stick. One stick can be divided into 5 planting materials.

D.8 Coffee Plantation Rehabilitation-Sub-program

D.8.1 Organization of Beneficiaries Group and Orientation for the Sub-program

(1) Selection of Responsible Persons/Potential Participants

In principle, this sub-program could support all households in a community. At least, however, the following criteria should be confirmed as prerequisite to be a member.

- a person who is willing to participate in the sub-program;
- a person who can comply with its duties and responsibilities;
- a person who is willing to spare his/her time for the activities;
- a person who can use his/her aged coffee farm for demonstration purposes;
- a person whose farm is located near the center of aldeia;
- a person who can afford to risk failure;
- a person who is willing to share experience and knowledge with others.

- a person who has coordination skills; and
- a person who is able to read and write.

(2) Group Organization

To enable the community to organize beneficiaries groups for the sub-programs, a local NGO will assist the community in constituting its members, designating group officials, preparing regulations of groups, and clarifying the functions of groups. The following table shows topics to be discussed and expected outputs to be generated through group organization.

Topics to be Discussed and Expected Results

Sub-program	Issue to be discussed	Expected results
Tree Planting Promotion Sub-program + Coffee Rehabilitation Sub-program	➢ Selection of representatives (a group leader or coordinator) with selection criteria ➢ Roles and responsibilities of group leader ➢ Roles and responsibilities of core members/farmers and other members/farmers ➢ General functions of the group ➢ Rules of the group ➢ Activities of the group	➢ Select a group leader ➢ Define roles and responsibilities of a group leader ➢ Define roles and responsibilities of core members/farmers and other members/farmers ➢ Define vision, mission, activities of the group ➢ Define a simple rule/regulation for managing a group

(3) Exposure Visits

A local NGO will take core members/farmers for Coffee Rehabilitation Sub-program to areas/villages where similar activities have been implemented successfully so that they could have a clear image of the sub-programs. The members who participated in exposure visits will feed back their experiences and learning to the entire group members. The following exposure visits are to be planned and done by a local NGO.

D.8.2 Participatory Planning

Two types of work plans, an entire work plan for 20 months and an annual work plan from April 2008 to March 2009, will be developed by the beneficiaries' groups with the assistance of a local NGO. The following steps are to be taken in the participatory planning.

Process of Participatory Planning

Items	Coffee Rehabilitation Sub-program
Step 1: Identification of target	• Identify aged coffee plantations suitable for demonstration plots; • Conduct a field observation survey to see the conditions of the potential sites; • Determine the demonstration plots; • Assess the present practices that community members use for managing coffee plantations; • Identify practices to be improved; • Identify necessary activities to rehabilitate aged coffee plantations; and • Identify possible trees suitable for shade trees.
Step 2: Work Plan	• Develop field layouts of demonstration plots. • Decide techniques / cultural practices to be demonstrated in demonstration plots; • Make a list of training courses to cover the techniques / cultural practices introduced; • Make a schedule of training courses; • Identify the necessary materials or tools and/or resource persons for the respective training courses; and • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, and responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identify local materials to be procured by local communities without charge; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools/resource person

After making work plans with the community, a local NGO will estimate the cost/budget for the implementation of the work plans in accordance with the following manner.

- Enumerate the necessary input (materials, tools, training courses, human resources, etc.);
- Estimate the volume/quantity of each input; and
- Estimate the cost required by multiplying the unit prices of inputs with the respective quantities.

D.8.3 Implementation Plan

(1) Development of On-farm Demonstration Plots

This sub-program aims to introduce techniques of i) pruning coffee trees and ii) restoring an aged coffee plantation in the village. To this end, an on-farm demonstration plot will be established at each aldeia with the assistance of core farmers. The outlines of a demonstration plot are summarized below.

Size and Design of Demonstration Plot(1 plot/group)

Items	Outlines	Remarks
Area of plot	0.2~0.4 ha/plot	depending on the capacity of core farmers
Techniques to be demonstrated	to prune coffee trees heavily to rejuvenate aged coffee trees	"pruning" to be carried out in September/October 2008
	to plant seedlings of coffee and shade trees in the pruned plot to maintain and manage the pruned plot	"planting" to be carried out in November/December 2008

As an on-farm demonstration plot is to be established at a core farmer's farm at each aldeia, a total of three demonstration plots will be developed in the whole village.

(2) Organization of Farmer's Field Schools (FFSs)

In parallel with the development of on-farm demonstration plots, a local NGO will organize a series of field training courses (Farmers' Field Schools: FFSs) for both core and other participating farmers at each aldeia using demonstration plots. The following are training activities to be organized through the FFSs.

- Compost making
- Seedling production (Selection of seeds, Sowing seeds in a seedbed, Transplanting germinated seeds into poly-bags)
- Establishment of coffee plantation (Designing, Land preparation, Planting seedlings of coffee and shade trees)
- Rejuvenation of aged coffee trees
- Maintenance of coffee plantation (Pruning coffee trees, Weeding, and Control of pests and diseases)
- Harvesting
- Post-harvesting (Processing cherry to bean)

Details of each training course are summarized in the next table.

Training Courses at the Demonstration Plot (per Aldeia)

Training course	Techniques/Knowledge to be transferred	Span	Frequency
Compost making	How to make a compost How to maintain compost	4 days in total	once a month (for 4 months)
Seedling production <1	How to identify good quality seeds How to produce seedlings (how to manage a nursery)	6 days in total	once a month (for 6 months)
Pruning of coffee plantation	How to prune coffee trees	2 days	1 time
Establishment of coffee plantation	How to design a coffee plantation How to prepare land for coffee plantation How to plant seedlings of coffee and new shade trees	3 days	1 time
Rejuvenation of aged trees	How to rejuvenate aged coffee trees (optional)	2 day	1 time
Maintenance of coffee plantation	How to weed coffee plantation How to detect and control pests and diseases of trees	6 days	once a month (for 6 months)
Harvesting	How to harvest coffee to maintain the quality	4 days	twice a month (for 2 months)
Post-harvesting	How to process cherries into beans	3 days	1 time

Note: <1 Training activities will be undertaken under the Tree Planting Promotion Sub-program

(3) Replication of Trained Techniques

Other participating farmers are expected to practice what they have learned through FFSs in their own farms soon after being trained at demonstration plots. A local NGO will assist participating farmers in replicating the trained techniques in their farms. Core farmers will also function as resource persons for other participating farmers.

(4) Procurement and Provision of Materials and Tools

In order to establish demonstration plots and encourage participating farmers to replicate trained techniques in their own farms, a local NGO will procure the following materials and tools and provide them to core and participating farmers when a NGO organizes the respective training courses.

Materials required for the entire sub-program

Description	Unit	Q'ty		Training related	Source
		CF	Total		
1. Farm tools (shovel)	Packs	12	210	Compost making	NGO
2. Materials for compost (animal dung, cutting grasses, crop residues, top soils, etc.)	-	as required	as required	Compost making	Group
3. Farm tools (hoe, iron stick)	Packs	12	210	Establishment of coffee plantations	NGO
4. Farm tools (machete)	Packs	12	210	Rejuvenation of aged trees	NGO
5. Farm tools (knife)	Packs	12	210	Maintenance of coffee plantation	NGO
6. Basket	unit	12	210	Harvesting	NGO
7. Local pulping machine <1	unit	-	3	Post-harvesting	NGO

Note: Pulping machines will be managed and operated under the beneficiaries groups.

Farming tools will be distributed to each household, while pulping machines will be managed and operated on a sub-village (aldeia) level. Hence, there is a need to discuss among themselves how to manage and use such a machine as a common property and to establish a rule/regulation of the village/sub-village on use of a pulping machine. A local NGO will assist the beneficiaries groups in the development of rules and management of pulping machines.

(5) Necessary Arrangements

A local NGO is advised to coordinate with the following organizations/institutions as well as the Directorate of Coffee in MAF in the development of the demonstration plots and organization of training courses described above.

- PADRTL (funded by Portuguese government)
- CCT (Cooperative Café Timor)

Those organizations have competent expertise on coffee farming and will be able to provide technical staff for specific training. Nevertheless, but the day-to-day coaching to core farmers and other participating farmers shall be done by a local NGO.

D.9 Income Generating/Cost Saving Sub-program

D.9.1 Organization of Beneficiaries Group and Orientation for the Sub-program

(1) Identification of Potential Participants

NGO/facilitators will organize a meeting with the community members of the village and facilitate them in selecting potential participants. Since this sub-program tends to involve hand-to-hand training on new kinds of business, the number of participants could be around 10 persons per group, which is the manageable scale of operation. The following guidelines are to be used for the selection of beneficiaries.

- a person who is willing to participate in livelihood development activities;
- a person who can comply with its duties and responsibilities;
- a person who is willing to spare his/her time for the activities;
- a person who is familiar with specific resources that would be used for livelihood development (e.g. vegetables for food processing); and
- a person who can afford to risk some of their assets/investment e.g. old cloth, vegetables, labor and time.

In addition to the above conditions, the following qualifications could be applied to select group leaders.

- a person who can read and write;
- a person who is willing to spare his/her time for coordination and representation of the group.
- a person who can do simple calculation for book keeping;

(2) Group Organization

Having selected potential participants, a local NGO will assist the participants in organizing beneficiaries' groups. The following table shows topics to be discussed and expected results made through the discussions.

List of Possible Topics for Discussion

Issue to be discussed	Expected results
➢ Structure of the group (a leader, secretary, and accountants if necessary) ➢ Selection criteria and selection of group leaders ➢ Roles and responsibilities of group leaders ➢ Roles and responsibilities of other members ➢ General functions of the group ➢ Rules and regulations of the group ➢ Activities (especially for regular monitoring) of the group	➢ Set the organizational structure of group ➢ Set the selection criteria for selecting group leaders ➢ Select group leaders ➢ Define roles and responsibilities of group leaders ➢ Define roles and responsibilities of other members ➢ Define vision, mission, activities of the group ➢ Define a simple rule/regulation for managing a group ➢ Define the qualification for membership ➢ Set a mechanism to maintain the facilities/tools/equipment by the project ➢ Set a mechanism to disseminate information to members ➢ Set regular meeting

(3) Exposure Visits

Exposure visits are to be organized like the other sub-programs. A local NGO will take representatives of the groups to areas/villages where similar activities have been implemented successfully, so that they could have clear ideas of the sub-programs.

D.9.2 Participatory Planning

NGO/facilitators will assist the beneficiaries' groups for the sub-programs in the preparation of work plans for each sub-program. The following table shows the necessary steps to be taken in the participatory planning. As compared to other programs, this activity is particularly important for this sub-program because it determines what the beneficiaries concretely do in order to gain income or save of cost for living.

Process of Participatory Planning

Step	Things to do
Step 1: Identification of target	• Review existing resources and potentials of the village with resource map and transect work if required. • Select/Identify the potential livelihood development activities to be supported by the project; and • Confirm a consensus among the group members.
Step 2: Work Plan	• Identify the necessary arrangements and technical skills for implementing the identified livelihood options; • Confirm the gaps between the current capacity of the groups and the necessary skills • Identify the means to fulfill the gaps (e.g., training courses and internal arrangement); • Make a schedule of training courses considering the sequence of training activities, busyness in farming, and seasonality of raw materials; • Identify the necessary materials or tools and/or resource persons for the respective training courses; and • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, and responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

D.9.3 Implementation Plan

After identifying the potential livelihood development, the sub-program provides a series of training to the beneficiaries.

The principle approach of this sub-program is to provide opportunities for a community to learn techniques for cost-saving/ income-generation. Each member, after participating in a series of training provided by the sub-program, can decide whether a development option that the community selected is worth continuing or not; and if yes whether they carry out business on an individual or group basis. This sub-program thus promotes self-decision to deal with the new

techniques that are gained and support their decisions. Therefore there is a possibility that the community has received the training on various techniques but implements only some of them through self decision making.

Assuming that each aldeia has 60 households, dividing them into two batches means one containing 30 households. Provided 4 development options, one group for training on each issue can involve around 7 to 8 persons. In each batch the sub-program is planned to offer at least 2 times training on each issue. In this case a community member can have a chance to join in training at least for 2 kinds of business.

Activities to be supported by the sub-program can be classified into two groups, namely common activities and technical training specific to a development option. The following explains the outline of each category of activities.

a. Common Activities

In principle, there are two common activities, namely, 1) Market Research and 2) Business Management Training. The following are outlines of these activities. Needless to say, there may be additional activities such as training on advertisement according to development option that is proposed.

Market Research

Prior to the implementation of livelihood development options, there is a need to explore the market potential of the goods to be produced. NGO/facilitators will conduct a market research together with members of the beneficiaries' groups. The following are to be taken for market research.

- Prepare a checklist of issues to be examined such as:
  - ✓ Major potential buyers (Who are to be buyers?);
  - ✓ Location of marketing place (Where is a place to sell?);
  - ✓ Requirement in quality (What quality should the product have?);
  - ✓ Type of products (Which kinds of products could be developed to meet needs of people?); and
  - ✓ Trend in price (How much the price/cost should be?).
- Based on the checklist, collect the necessary information to identify market potentials. The following are possible methodologies for data collection.

Possible Methods for Data Collection for Market Research

Activities/Methods	Objectives
Interview with potential buyers or resource persons who knows consumers very well.	To know current marketing treds/needs in handicrafts/Tais To identify aspects to be improved To identify possible measures and appropriate price
Observation	To know current marketing practices and prevailing prices
Discussions with external experts	To collect ideas on value-adding To explore potential marketing outlets

- After collecting data, it is necessary to make an analysis to formulate a production and marketing strategy. One of the ways for the analysis is to explore difficulties and opportunities for the community to produce potential goods and prioritize activities according to feasibility. In this analysis, it is very important to identify potential buyers (institutions or individuals) and consider how to make a promotion to them.

Training on Business Management

This training deals with various kinds of business tools, including business plan, monthly/quarterly reports, financial management (book keeping), and assess management. Among them, book-keeping is particularly important, especially for communities that decide to do business on a group basis. Training manual with sample exercise should be developed to introduce these techniques. The following table shows key issues to be introduced by this training.

Key Issues to be introduced in Training

Theme	Key Issues to be introduced
Business Plan	Responsibly of representatives/members Estimated Revenues and Cost and Use of Profit Risk Management Business cycle
Monthly/Quarterly Report	Financial Status Physical progress against plan Status of Assets/Resources
Financial Management	Management Principle (e.g. Democracy, Accountability and Transparency) Accounting Book Record of Profit and Profit Use
Asset/Resource management	List of assets and resources Condition check

To implement the training courses mentioned above, a local NGO will take the following steps:

- Identify capable resource persons on basic business management especially for financial management;
- Prepare simple training kits/texts and other materials such as calculators and stationeries; and
- Develop advertisement such as broachers accordingly for promotion of the products.

b. Technical Training

After identifying the necessary technical skills to be developed in the beneficiaries' groups, a local NGO shall provide a package of training courses to enable the groups to engage in the identified livelihood options. Toward this end, a local NGO will:

- Identify competent resource persons who can be trainers/specialists on the specific subjects required;
- Prepare simple training materials (texts or other kits) if necessary; and
- Make arrangement for training.

Assuming that the beneficiaries' groups finally identify 1) food processing, 2) tais making, 3) cloth making with sewing machines and 4) handicraft making as livelihood options that the groups would intend to take, the outline of training programs for each business is as follows.

Outlines of Possible Training Programs (Tentative)

Training Activities	Contents	Span	Frequency
Food processing	1)How to prepare solar drier(only teaching) 2)How to make dried foods	1) 3 days 2) 4 days	1 time/batch (with 3 time –follow-up)
Tais making	How to make a tais - to develop tais-making equipment - to make a simple tais - to make relatively complex motif	6 days	1 time/batch (with 3 time –follow-up)
Cloth making with sewing machines	How to use and maintain a sewing machine How to make/ fix cloth	6 days	1 time/batch (with 3 time –follow-up)
Handicraft making	How to prepare materials How to make handicraft and decoration (Follow-up)	6 days	1 time/batch (with 3 time –follow-up)

Note: Follow-up will be conducted, depending on the learning capacity of participants.

The following table shows the quantity of inputs/materials to be procured for training of groups. Estimation is made on the basis of the assumption that one group for one business.

Materials/Inputs needed for Training One Group of 7-8 members

Description	Unit	Q'ty	Contribution from
Food processing			
Cassava/sweet potato/banana/vegetables	As required		Groups
Solar drier materials (e.g wood, glass, net, board, nail, black cloth, etc)	Set	1	NGO/Facilitators
Cooking utensils(e.g. pans, knives, oils)	Set	1	NGO/Facilitators
Package material (1 pack = 1500 plastic sheets)	Pack	2	NGO/Facilitators
Tais making			
Bamboo sticks for needles (20cm-1m) (1 stick/person)	Stick	8	Group
Bamboo pole (1m) (2 poles/ person)	Pole	16	Group
Wood poles (1m) (4 poles/ person)	Pole	32	Group
Plastic ropes (1 role = 50 m, 5 roles/ group, 1 role =$ 15)	Role	5	NGO/Facilitators
Plastic ropes (thin) (1 role = 40 m 4 roles/ group, 1 role =$ 15)	Sack	4	NGO/Facilitators
Soru (1 unit / person)	Unit	8	Group
Doleng (4 bundles/ group, 1 bundle = $10)	Pack	4	Group or NGO/Facilitators
Color String (50 roles with 4 to 5 colors, 1 role = $1.25)	Roles	50	NGO/Facilitators
Scissors (made of Bamboo) (1 unit/ person)	Unit	10	Group
Cloth making with sewing machines			
Sewing machines (1 unit per group, 1 unit = $130)	Unit	1	NGO/Facilitators
Cloth(30m x 1m, 2 roles / group, 1 role = US$22)	Role	2	NGO/Facilitators
Sewing set (e.g. scissors, meters, strings) (1 set = $60, per machine	Set	1	NGO/Facilitators
Handicraft making			
Leaves of Palm (Boro) (10 bundles per group) 1 bundle =US$25	Bundle	10	Group
Leaves of Palm Acadiru (10 bundles per group) 1 bundle =US$45	Bundle	10	Group NGO/Facilitators
Dyeing material/ color powder (5 packet per group) 1 packet = US$25	Packet	3	NGO/Facilitators

c. Implementation, regular monitoring and training to others

After receiving training, the beneficiaries groups will start the operations of livelihood options. A local NGO will help them in their day-to-day operations and management of the options by providing technical assistance. Materials for production would be provided to beneficiaries' groups at an initial stage if the groups have difficulty in procuring materials. A local NGO will encourage the groups to organize a regular meeting monthly or quarterly, so that the groups can monitor their activities by themselves.

d. Evaluation Workshop

An evaluation workshop will be organized to discuss the following issues.

- Extent of economic contribution to livelihoods in terms of income, expenditure and general perception;
- Positive and negative impacts of Income-generating/Cost-saving sub-program;
- Willingness to continue the practices that they have learned;
- Availability of a future business plan; and
- Willingness to share knowledge and experience with other community members.

D.10 Initial Gully Control Sub-program

D.10.1 Organization of Beneficiaries Group and Orientation for the Sub-program

(1) Selection of Responsible Persons/Potential Participants

In principle, this sub-program plans to provide technical training to 10 villagers per aldeia. This is because the techniques against the initial gully erosion may be not required by all the community members since the gully erosion tends to occur under particular condition, especially of slope, vegetation cover and rain fall patterns. Therefore, the sub-program focuses on capacity development of the selected community members as possible resource person who could replicate the techniques learnt at their land and share their knowledge with other villagers corresponding to their necessity.

At least, the following criteria should be confirmed as prerequisite to be a member.

- a person who is willing to participate in the sub-program;
- a person who can comply with its duties and responsibilities;
- a person who is willing to spare his/her time for the activities;
- a person who can use their land for demonstration purposes;
- a person who can afford to risk failure

(2) Identification of Potential Areas

NGOs/expert will facilitate the discussion of the beneficiaries' groups to identify the potential areas to be used as demonstration plots under the sub-program. First, NGOs/expert will assist the groups to develop a resource map of their community in order to grasp its present land use. Based on the resource maps prepared, the potential areas where the initial gullies have taken place will be identified to establish the demonstration plots under the sub-program.

(3) Group Organization

In this step, NGO/facilitators will encourage the identified responsible persons/ participants of the sub-program to form groups by designating group officials, preparing regulations of groups, and

clarifying the functions of groups. In group formation, the responsible persons/participants will discuss the following topics and issues with the assistance of NGO/facilitators.

List of Possible Topics for Discussion

Issue to be discussed	Expected results
➢ Selection of representatives (a group leader or coordinator) with selection criteria ➢ Roles and responsibilities of group leader ➢ Roles and responsibilities of core farmers and other participating farmers ➢ General functions of the group ➢ Rules of the group ➢ Activities of the group	➢ Select a group leader ➢ Define roles and responsibilities of a group leader ➢ Define roles and responsibilities of core farmers and other farmers (participants) ➢ Define vision, mission, activities of the group ➢ Define a simple rule/regulation for managing a group

(4) Exposure Visit

In order for the participants to have clear ideas of the sub-programs, MAF and NGOs/expert will organize exposure visits to areas/villages where similar activities have been implemented successfully. Representatives of the groups will participate in these visits and feed back their experiences and learning to the entire group members upon the return from the visits.

D.10.2 Participatory Planning

NGOs/expert will facilitate the discussion of the beneficiaries' groups to come up with work plans (an entire implementation plan and annual work plan) of the respective sub-programs. The following table shows the necessary steps to be taken in the participatory planning for each sub-program.

Process of Participatory Planning

Step	Things to do
Step 1: Identification of target activities	• Conduct a field observation survey to see the conditions of the potential sites; • Determine the demonstration plots; and • Develop field layouts of demonstration plots.
Step 2: Work Plan	• Identify necessary activities to be taken for development of demonstration plots; • Make a list of training courses to cover the identified necessary activities; • Make a schedule of training courses; • Identify the necessary materials or tools and/or resource persons for the respective training courses; and • Develop a work plan indicating work items, outlines of activities, time schedule, period of work, and responsible persons/bodies, and materials procured.
Step 3: Procurement plan	• Discuss how to procure the necessary materials or tools and/or resource persons; • Identified possible sources to have the necessary materials or tools; and • Contact the possible sources to confirm the possibility to have the materials/tools.

D.10.3 Implementation Plan

After the participatory planning, NGOs/expert will estimate the cost/budget required for implementation of the work plans. The following are implementation plan proposed for this sub-program.

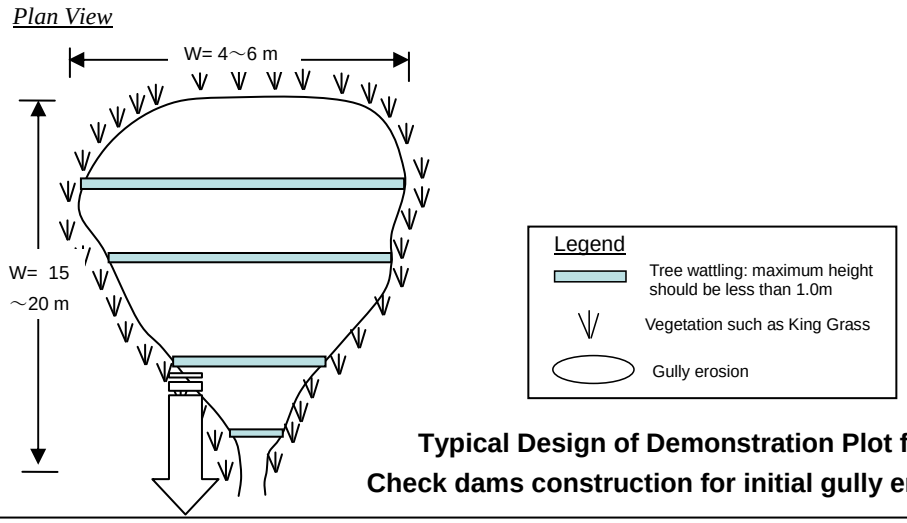
a. Development of Demonstration Plots

The major aim of the demonstration plots is to demonstrate the effectiveness of the proposed structure measures against progress of the gully erosion at the initial stages.

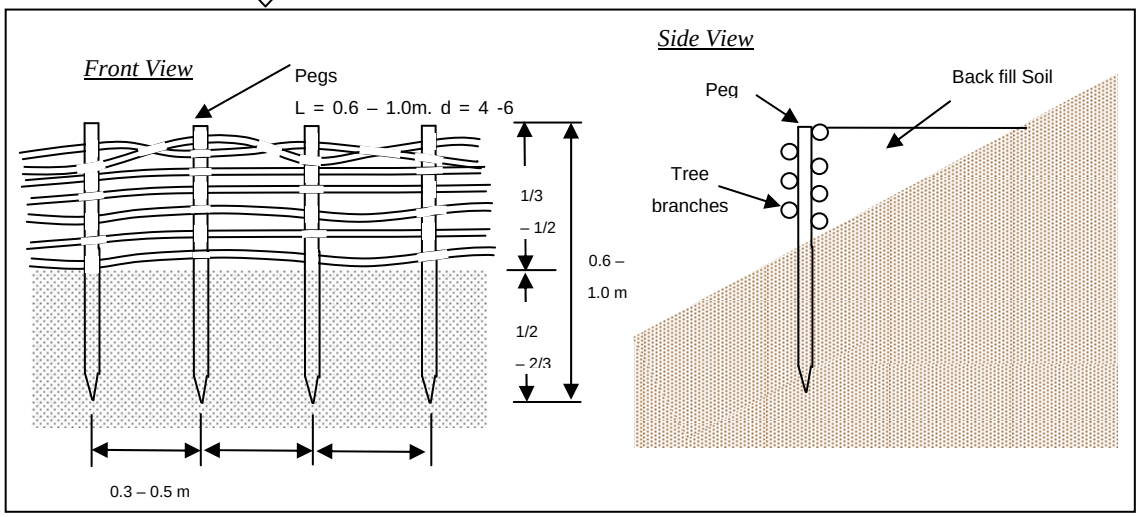
The demonstration plots will be developed with the simple structure measures, such as Tree branch wattling, using the local materials. In procurement of the local materials, if the group members need the permission from NDF for cutting trees, the responsible NDF staff for the

sub-program will arrange the further assistance to the community and coordination with NDF and relevant District MAF offices.

Each group will develop one demonstration plot. Although the size of the demonstration plot will correspond to the scale of the gully erosion, the typical design of the demonstration plot is shown as bellow.



Typical Design of Demonstration Plot for Check dams construction for initial gully erosion



Typical Design of Tree Wattling

b. Organization of Farmer's Field Schools (FFSs)

MAF and NGO/facilitators will organize a series of field training activities (Farmers' Field Schools: FFSs) for both core and other participating farmers at demonstration plots. Through the FFSs, the members of the working groups can learn all the practices required for effective farming. The following are training activities to be organized under the sub-program.

- Design of a demonstration plot
- Cleaning and compactation of the foundation at the demonstration plot
- Installation of structures
- Back fill at the structures
- Planting king grass

- Maintenance of the demonstration plot

The training courses are summarized as follows.

Outlines of FFSs

Training course	Techniques/Knowledge to be transferred	Span /Aldeia	Span/ Suco	Frequency / One season
Design of a demonstration plot	How to make and maintain compost How to apply compost	1 day	5 days	1 time
Clearing and compactation of the foundation	How to use the tools How to clear the demonstration plot How to compact the foundation	3 day	15 days	1 time
Installation of structures	How to develop the tree branch wattling	5 days	25 days	1 time
Back fill at the structures	How to back fill at each structure using the tools provided	5 days	15 days	1 time
Planting king grass	How to make holes for planting How to plant king grass	2 days	10 days	1 time
Maintenance of the demonstration plot	How to provide maintenance for the wattlings	1 day	5 days	1 time/ Occasionally
	How to provide maintenance for the king grass	1 day	5 days	1 time/ Occasionally

c. Replication of Trained Techniques

Participating farmers are expected to replicate what they have learned in training courses in their own farms after experiencing training courses at demonstration plots. MAF and NGOs/expert will assist participating farmers in replicating the trained techniques for installation of the structures against the initial gully erosion at their lands by directly visiting them.

d. Procurement and Provision of Materials and Tools

In order to establish on-farm demonstration plots and encourage participating farmers to replicate trained techniques, NGOs/expert will procure the following materials and tools and provide them to participating members when a NGO organizes the respective training courses.

Materials required for the entire sub-program

Description	Unit	Q'ty		Training related	Source
		Per aldeia /year	Total (3 suco for 1 year)		
1. Farm tools (Shovel)	Packs	10	150	Clearing and compactation of the foundation, Back fill at the structures	NDFN GO
2. Local materials (fallen/dried woods and branches)	-	-		Installation of structures	Group
3.Seedlings of King grass for demonstration plots	Bundles	5	75	Planting king grass	NDF/N GO
4. Seedlings of King grass for individual members	Bundles	50	750		

D.11 Public Awareness Campaign Sub-program

D.11.1Preparatory Works

(1) Selection of Responsible Persons/Potential Participants

In principle, this sub-program will target 60 children and 30 adults of the villagers, namely, 90 community members in total per suco. The target members are to be selected in accordance with the criteria listed below.

Criteria in Selection of members for Target Groups

	Target Group	
	Children	Adults
Criteria for Selection	- Children who are capable to understand the activities under the sub-program. (8 to 15 years old)	- a person who is willing to participate in the sub-program; - a person who can comply with its duties and responsibilities; - a person who is willing to spare his/her time for the activities; - a person who can use their land for demonstration purposes; - a person who can afford to risk failure - Person in charge for execution of Tara-bandu, e.g., chefe de suco and members of suco-coucil.
Total Number	60 persons	30 persons

(2) Selection of main theme of the public awareness campaign

The sub-program can focus on topics such as i) major issues on watershed/natural resource management in the community, and/or ii) outlines and main activities of the other sub-programs of the watershed management plan implemented in the community.

As for i) major issues on watershed/natural resource management, the relevant information, such as the watershed management plan which identifies direct causes of watershed degradation, shall be carefully reviewed as a reference.

D.11.2Implementation Plan

MAF and NGO will develop a implementation plan with revision of allocation of budget and human resources for the sub-program, consisted of two major components, namely, i) development of awareness raising materials and ii) organization of the workshops.

The following are implementation plan proposed by phase for this sub-program.

i) Development of Awareness Raising Materials

a. Development of the draft materials

MAF will contract with NGOs/experts to develop the awareness raising materials which can be applied to all the sucos in the watershed.

Since three times of the workshop will be organized as described in the latter sub-section, the materials shall be developed in accordance with the contents of the workshop and target groups as summarized below.

Outlines of the Materials to be Developed (Tentative)

Materials	Information to be conveyed by the material	Target groups	Type of materials to be used	Remarks
Material for the 1st workshop	Necessity of sustainable forest and watershed management	Children	Picture book	-
Material for the 2nd workshop	Necessity of sustainable forest and watershed management	Adult	Pamphlet	-
Material for the 3rd workshop	Basic concepts and major activities of the other programs in the watershed management plan, which have been implemented in the target sucos.	Adult	Leaflet	Leaflets will be developed for 13 sub-programs*1 proposed in the watershed management plan

*Note *1:13 sub-programs are as follows: PLUP-SP, TPP-SP, SP-SP, FM-SP, CBSE-SP, AFP-SP, HG-SP, SUFP-SP, CPR-SP, GCPB-SP, IGC-SP, RED-SP, and IG-SP. Basically, the development of the materials for the workshops shall be contracted out to NGO or other agencies. First, the concept of the materials, such as story lines for the picture book and/or script for the movie and/or drama shall be developed so as to convey the messages effectively to the target groups.*

Based on the concept of the materials prepared, the outlines of the materials shall be developed to prepare the draft materials.

b. Trial presentation of the materials

In order to validate the effectiveness of the draft materials developed, the trial presentation will be organized with participation of selected target members. After the presentation, NGO/expert will conduct a group interview to confirm the understanding of the implication of the materials among the target members.

c. Finalization of the materials

With the feedback from the trial presentation, the materials will be revised and finalized. In case that the materials will be used for children, especially the phrases and expressions of the materials should be revised to enable children to follow the drift and story of the materials.

d. Preparation of the copies of the materials

Since the workshops described in the latter section will be implemented in 8 sucos in the target watersheds, the developed materials will be copied for 8 sucos as follows.

Awareness raising materials required for the sub-program

Description	Unit	Q'ty		Source
		Per suco	Total (8 sucos)	
1. Picture book	copies	1	8	NGO/Expert
2. Pamphlet	copies	30	240	NGO/Expert
3. Leaflet	copies	30	240	NGO/Expert

ii) Organization of the Workshops

Using the materials developed in the former phase, the series of the workshops shall be organized at suco level. The workshops shall be consisted of three sessions and the outlines of the workshops are summarized as below and described in the following sub-section.

Outlines of the Workshops to be Organized

Workshops	Information to be disseminated	Major activities to be implemented	Target groups	Span/ Suco
a.1st workshop	Necessity of sustainable forest and watershed management	- Presentation of the material for children	Children	3 days
	Necessity of sustainable forest and watershed management	- Organization of a drawing session with children and dialogue session between children and adults	Public	
b.2nd workshop	Necessity of sustainable forest and watershed management	- Presentation of the material for the adults	Adult	3 days
		- Organization of the meeting among adults to discuss about the major issues on natural resource management and possible measures to be taken	- ditto -	
c.3rd workshop	Basic concepts and major activities of the other programs in the watershed management plan, which have been implemented in the target sucos.	- Presentation of the material for the adults	Adult	3 days
		- Organization of the meeting among adults to discuss about the obstacles in implementation of the programs and possible measures to be taken	- ditto -	

a. 1st Workshop

This workshop aims to encourage children of the target groups to envisage a future vision of their community focusing on sustainable use of natural resources in the watershed. The workshop consists of the following two sessions: i) presentation of a materials such as picture-story show with a follow-up dialogue with children to deepen their understandings of the specific topic related to watershed management and ii) organization of "a drawing festival", where a facilitator will ask children to depict the future scenery of the respective villages.

Drawings depicted by children in the workshop are their future visions of their villages. It would be good opportunity for adults/the present generation of the village to realize their responsibility for protecting natural resources to the next generation if the ideas envisaged by

their children can be shared with adults. To this end, children will give a presentation on their drawings to the adults after the drawing festival.

b. 2nd Workshop

While the 1st workshop focuses on awareness raising on natural resource management mainly among the children, the succeeding 2nd workshop target adults for awareness raising on the same topics. The workshop consists of a guidance session in relevant topics of natural resource management using the materials such as pamphlets and a follow-up dialogue among adults to deepen their understandings of natural resource management. In the dialogue, adults will discuss about the activities to be stopped or continued as well as possible actions to be taken for sustainable natural resource management in the community.

c. 3rd Workshop

This workshop aims to enhance understanding of the basic concepts and major outputs of the proposed programs in the watershed management plan among adults, especially members of the beneficiary groups of the proposed programs. The workshop includes the presentation of the materials for the adults and discussion among the adults about issues and/or obstacles in implementation of the programs and the possible measures to be taken.

d. Procurement and Provision of Tools

In order to organize the workshops, NGOs/experts will procure the following materials and provide them to participating members especially at the drawing festival to be implemented in the 1st workshop.

Materials required for organization of the workshops

Description	Unit	Q'ty		Source
		Per suco	Total (8 suco for 1 year)	
1. Drawing paper (A3)	Pcs	60	720	NGO/Expert
2. Color pencil	Box	60	720	NGO/Expert

D.12 Capacity Development Sub-program

D.12.1 Preparatory Works

(1) Organization of a working group

MAF will organize a working group for development of training programs/curricula for the staff involved in the implementation of the five-year management plan. The working group should consist of the staff from the relevant national directorates of MAF. The following directorates and offices should be the members of the group.

- NDF
- NDAH
- NDIPA
- NDSDAC
- MAF District Offices of the concerned districts

(2) Procurement of Experts

In order to develop training programs/curricula, MAF should hire international and national experts and NGOs that have experience in the preparation of training programs of the government staff. The following specialists/experts will be hired for the implementation of the sub-program.

Title	Proposed qualification	Expected MM
Capacity development specialist	- international - having more than 10 years experience in capacity development in the agriculture and forestry fields	9 MM
Subject matter specialist	- international - having at least 5 years experience in the specific technical field, which will be identified in the training needs assessment, and familiar with the community-based development approach	3 MM
Subject matter specialist	- national - having at least 5 years experience in either agricultural extension or community-based forest management in the country	6 MM
Data encoder	- national - Computer literate (especially excel) - Preferably familiar with any database software (e.g., access)	2 MM

(3) Identification of the staff

The working group will identify the staff who will be involved in the implementation of the five-year management plan in coordination with the relevant national directorates of MAF. A master list of the target staff for the sub-program is also prepared by the working group.

D.11.2 Implementation Plan

(1) Training Needs Assessment

The hired specialists with the working group will prepare a set of questionnaire forms for the assessment of training needs of the target staff. The questionnaire survey should cover, but not limited to, the following topics:

- Educational background;
- Work experience;
- Current tasks in the original organizations;
- Expected tasks given in the implementation of the five-year plan;
- Training records
- Knowledge and skills to be enhanced to fulfill the tasks

A workshop with the participation of the target staff should be organized to share the results of the training needs assessment.

(2) Development of training curricula

Training programs or curricula will be developed based on the results of the training needs assessment. The working group with the assistance of the hired experts will identify the resource persons and existing training materials available in the country, which can be used for future training courses. Training curricula developed should include the following topics to enable MAF to develop an action plan for securing the necessary budget.

- Topics

- Duration of training course
- Venue of training
- Type of training
- Target staff/persons
- Resource persons
- Necessary materials
- Expected outputs

The following table gives the initial ideas of the topics to be handled by the sub-program.

Target groups	Subjects	Methods	To be organized by
NDF and District Forest Officers	Forest Management Decree Watershed management plan (Orientation) Concept of CBNRM Project monitoring and evaluation Report writing Preparation of TOR for NGOs/facilitators and evaluation Preparation of a budgetary plan	Workshop	MAF (NDF), International NGOs, Consultants
District Forest Officers and Forest Guards	Participatory planning methods Agroforestry and soil conservation techniques Participatory land use planning Public awareness campaign methods	Workshop	MAF (NDF), NGOs, Consultants
NDAH, NDIPA, NDSDAC and District Crop Officer	Watershed management plan (Orientation) Project monitoring and evaluation Report writing Preparation of TOR for NGOs/facilitators and evaluation Preparation of a budgetary plan	Workshop	MAF (NDAH/ NDIPA), International NGOs, Consultants
District Crop Officer, District Coffee Officer, and Extensionist	Improved farming practices Agroforestry and soil conservation techniques Vegetable farming Seed multiplication Rejuvenation, pruning, and other techniques for management of coffee trees	Workshop and OJT	MAF (NDAH), NGOs

Source: Chapter 5 of Main Report (JICA Study Team)

(3) Preparation for Training

The working group will procure the resource persons (lectures) for training courses programmed in the training curricula. The hired specialists will develop the training materials considering the existing training materials and the outlines of the sub-programs planned in the five-year management plan.

(4) Implementation of the Training Curricula

The hired specialists will organize the training courses in coordination with the working group. Prior to the conduct of every training course, the specialists/MAF will conduct a simple questionnaire survey to gauge the participant's understanding of the topics handled in the training course. A similar questionnaire survey will also be carried out after the training course.

(5) Evaluation

After the end of a series of training courses programmed in the training curricula, the hired specialists with MAF will organize an workshop/meeting with the participants/target staff to evaluate the effectiveness and relevance of the training courses organized. The results of the

evaluation will be compiled in a completion report, which will be prepared by the hired specialists in the end of the sub-program.

Annex – E

Implementation Schedules of the Sub-programs in the Watershed Management Plan

Annex E (1): Implementation Schedule of Participatory Land Use Planning Sub-program (covering 3 succ

Activities	Unit	Q'ty	January	February	March	April	May	June	July	August	September	October	November	December	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.Formation of PLUP team																										
1.1 Recruitment of members	days	20																								
1.2 Assignment of gov staff	days	20																								
1.3 Guidance/Orientation to members	days	10																								
2. Guidance and Orientation to villages																										
2.1 Initial meetings with villagers	days	15																								
3. Situation Analysis																										
3.1 PRA Sessions	days	20																								
3.2 Analysis of RRA																										
(1) Analyses of PRA session	days	40																								
(2) Procurement of Aerial photos	days	3																								
4. Workshops with rural communities																										
4.1 Present Land Use Mapping																										
(1) Workshop on present land use mapping	days	20																								
(2) Calibration of the map using GPS	days	10																								
(3) Preparation of present land use by GIS	days	10																								
(4) Plenary session with villagers	days	7																								
4.2 Land Use Options and Future Land Use Mapping																										
(1) Workshop on land use options	days	20																								
(2) Workshop on future land use mapping	days	10																								
(3) Preparation of present land use by GIS	days	10																								
(4) Plenary session with villagers	days	7																								
4.3 Discussions and Development of Village Regulations																										
(1) Workshop on development of village regulatipns	days	20																								
(2) Preparation of draft regulations in writing	days	10																								
(3) Review and revision of the draft regulations	days	10																								
4.4 Consultation with communities in the village and MAF																										
(1) Consultaiton meetings at the aldeia level	days	20																								
(2) Finalization of the village regulations	days	10																								
(3) Presentation of the regulations to MAF and distric	days	10																								
4.5 Organization of Tara- Bandu ceremony																										
(1) Preparation for the ceremony	days	10																								
(2) Tara Bandu ceremony	days	10																								
5. Implementation and monitoring of the village regulations																										
5.1 Monthly monitoring meeting at the suco level	days	5																								
5.2 Bi-monthly meeting at the aldeia level	days	2																								
6. Revision of the village regulations																										
6.1 Reviw of the regulations	days	12																								
6.2 Preparation of the revised regulations	days	12																								
6.3 Approval of the revised regulations	days	7																								

Annex E (2):Implementation Schedule of Tree Planting Promotion Sub-program (covering 3 sucos)

Activities	Total in 3 Suco		Human resources of the expert team	Materials	1st Year												2nd Year												3rd Year											
	Unit	Q'ty			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Formation of expert team & preparatoin of starting the activity																																								
(Expert Team: NDF (1), District Forestry Officer (1), Forest Guard (1), Extensionists (3), Facilitator (1), Field Assistants (3))																																								
1.1 Assignment of forest guard (1) and extensionist (3)	days	1	NFO, DFO							▪																															
1.2 Procurement of NGO facilitator (1) & field staff (3)	days	1	NFO, DFO							▪																															
1.3 Review of overall work plan and preparation of TOR of member of expert team (Half day meeting)	days	1	Expert Team							▪																															
2. Formation of farmers gropus and guidance for the group members [1]			700																																					
(Batch: from 1st till 3rd year)			370																																					
2.1 Orientation of TPP/FP-SP and formulation of farmers groups who join the program (1 day/Suco)	days	3	Expert Team									▪																													
- 1 day meeting with 50 members/Suco, DFO, FG, EX, FC, FA	MD	150																																						
2.2 Discussions of the mission, roles and responsibilities of the group (2 days/Suco)	days	6	Expert Team									▪																													
- 2 days meeting with 50 members/Suco, DFO, FG, EX, FC, FA	MD	300																																						
2.3 Exposure visit of the group (1day/Suco)	days	3	DFO, FG, EX, FA										▪																													
- 1 day field visit to the ongoing project sites, 30 members/Suco, DFO, FG, EX, FA	MD	90																																						
- Cost to rent a truck to carry the participants: @ $150/day	days	3																																						
3. Planning workshop of tree-planting activity by the farmers' groups																																								
(Batch: from 1st till 3rd year)																																								
3.1 Identification of work contents, time schedule, rules and regularions of the group (1 day/Suco)	days	3	Expert Team										▪																												
- 1 day meeting with 75 members/Suco, DFO, FG, EX, FC, FA	MD	225																																						
3.2 Discussion & agreement on how to implement and monitor the activity (1 day/Suco)	days	3	Expert Team										▪																												
- 2 days meeting with 75 members/Suco, DFO, FG, EX, FC, FA	MD	450																																						
4. Training and demonstration for farmers groups in the demonstration plot																																								
(Batch: From 1st till 3rd year)																																								
4.1 Land preparation (2 days/group), planting (2 days/group) and tending (spots weeding) (2 days/group) (in 1st	days	90	FG, EX, FA	Farm tools (Hoe, Iron stick)										▪		▪			▪																					
- 30 members/group x 6 days x 5 groups /Suco = 900 MD/Suco, EX, FC, FA	MD	2,700		Seedlings																																				
4.2 Re-planting (1 day/group) and tending (spots weeding) (1 day/group) (in 2nd year)	days	30	FG, EX, FA	Farm tools (Hoe, Iron stick)																								▪													
- 30 members/group x 2 days x 5 groups /Suco = 300 MD/Suco, EX, FC, FA	MD	900		Seedlings																																				
4.3 Maintenance of planted trees, climber cutting & cearing of bushes, (1 day/group) (in 2nd & 3rd year)	days	30	FG, EX, FA	Farm tools (Hoe, Iron stick)																▪													▪							
- 30 members/group x 1 days x 5 groups /Suco x 2 years= 300 MD/Suco, EX, FC, FA	MD	900		Seedlings																																				
5. Monitoring of tree planting																																								
5.1 Recording of number of seedlings planted by the group members (Interview survey), Done by EX, FA			FG, EX, FS																																					
- In 1st-2nd year: 2 days x 5groups= 10days/Suco	days	30														▪	▪	▪	▪	▪	▪																			
- In 2nd-3rd year: 2 days x 5groups = 10days/Suco	days	30																										▪	▪	▪	▪									
5.2 Sample monitoring of trees survival planted by the members, Done by EX, FA **(Sampling rate: 10 % of total member)**			FG, EX, FS																																					
- In 2nd year : 3 members/group, 2days/group, 2days*5groups=10days/Suco	days	30																			▪	▪	▪	▪															
- In 3rd year : 3 members/group, 2days/group, 2days*5groups=10days/Suco	days	30																															▪	▪	▪	▪				
5.3 Annual evaluation & planning workshop (2 days/Suco/year) [1]	days	18	Expert Team																																					
- **2nd year**: Participation is 50% of total member joining in the activity of first batch.																								▪															
- 15 members/group x 5 groups/Suco = 75 members/Suco, NFO, Expert team	MD	450																																						
- **3rd year**: Participation is 50% of total members who joined the activity in the first & second batch.																																			▪				
- 15 members/group x 5 groups/Suco = 150 members/Suco, NFO, Expert team	MD	450																																						
6. Continuous technical assistance for farmers group																																								
6.1 Field visit for technical assistance to the farmers group (3 times/week/Suco, 3 years & 3 months)	days	1,521	FG, EX, FS											▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪
- The assistance includes the follow-up activity in the third year of each batch.																																								

Note:

1) These activities can be canceled in case the SP-SP SP carrys them out in the same target Suco.

Annex E (3):Implementation Schedule of Seedling Production Promotion Sub-program (covering 3 sucos)

Activities	Per 3 Suco		Human resources of the expert team	Materials	1st Year												2nd Year												3rd Year											
	Unit	Q'ty			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Formation of expert team & preparatoin of starting the activity																																								
(Expert Team: NDF (1), District Forestry Officer (1), Forest Guard (1), Extensionists (3), Facilitator (1), Field Assistants (3))																																								
1.1 Assignment of forest guard (1) and extensionist (3)	days	1	NFO, DFO		▪																																			
1.2 Procurement of NGO facilitator (1) & field staff (3)	days	1	NFO, DFO		▪																																			
1.3 Review of overall work plan and preparation of TOR of member of expert team	days	1	NFO, DFO, FC		▪																																			
- NFO, DFO, FC	MD	3																																						
1.4 Guidance/Orientation to the forest guard, extensionist, NGO field staff	days	1	Expert Team		▪																																			
- NFO, DFO, FC, FG, EX (3), FA	MD	8																																						
2. Formation of farmers gropus and guidance for the group members																																								
2.1 Orientation of SP-SP & TPP/FP-SP and formulation of farmers groups who join the program (1 day/Suco)	days	3	DFO, FG, EX, FC, FA			▪																																		
- 1 day meeting with 75 members/Suco, DFO, FG, EX, FC, FA	MD	150																																						
2.2 Discussions of the mission, roles and responsibilities of the group (2 days/Suco)	days	6	DFO, FG, EX, FC, FA			▪																																		
- 2 days meeting with 75 members/Suco, DFO, FG, EX, FC, FA	MD	300																																						
3. Planning workshop of seedling production activity by the farmers' groups																																								
3.1 Identification of work contents, time schedule, rules and regularions of the group (1 day/Suco)	days	3	DFO, FG, EX, FC, FA				▪																																	
- 1 day meeting with 75 members/Suco, DFO, FG, EX, FC, FA	MD	225																																						
3.2 Discussion & agreement on how to implement and monitor the activity (1 day/Suco)	days	3	DFO, FG, EX, FC, FA				▪																																	
- 2 days meeting with 75 members/Suco, DFO, FG, EX, FC, FA	MD	450																																						
4. Nursery construction (1-2 year) and maintenance (2 year)																																								
4.1 Field verification of water source for the nursery (2 days/Suco)	days	6	DFO, FG, EX, FA																																					
- First day: 3 members/grous x 3 groups/Suco, DFO, FG, EX, FA	MD	75																																						
- Second day: 3 members/grous x 2 groups/Suco, DFO, FG, EX, FA																																								
4.2 Preparation & signing of the rules to use the water source/tank for the seedling produciton (10 days/Suco)	days	30	Expert Team																																					
- 2 days meeting with 30 members/group, 5 groups/Suco, NFO, DFO, FG, EX, FC, FA	MD	900																																						
4.3 Construction: Installatoin of water supply system (15 days/Suco)	days	45	EX, FA	Water tank, construction materials																																					
- 3M*3D=9MD/group, EX, FA,	MD	135		Construction materials																																					
4.4 Construction: Land preparation, setting poles, fences & shades, making seedbeds (75 days/Suco)	days	225	EX, FA	Construction materials																																					
- 15M x 15D=225MD/group, EX, FA	MD	3,375																																						
4.5 Maintenance: Reparing the shades, fences and sheed beds, water supply system (90 days/Suco/year)	days	270	FA	Maintenance materials																																					
- 1M x 3D x 6months (July-Dec)= 18MD/group, FA	MD	270																																						
5. Training and demonstration for farmers groups on seedling production (done for 3 years)																																								
(Batch: 1st & 2nd year)																																								
5.1 Mixing soil (10 days/Suco/year)	days	30		Soil, mixing materials, farm tools																																					
- 1st year: 30 members/group x 1 day x 5 groups /Suco = 150 MD/Suco, EX, FC, FA	MD	450	EX, FC, FA	Seeds of trees																																					
- 2nd year: 30 members/group x 1 days x 5 groups /Suco = 150 MD/Suco [1]	MD	450																																						
5.2 Making seedbeds, sawing seeds, watering and maintenance (10 days/Suco/year)	days	30		Seeds of trees																																					
- 1st year: 30 members/group x 1 day x 5 groups /Suco = 150 MD/Suco, EX, FC, FA	MD	450	EX, FC, FA																																						
- 2nd year: 30 members/group x 1 days x 5 groups /Suco = 150 MD/Suco [1]	MD	450																																						
5.3 Filling soil into pots & arranging them on the bed (10 days/Suco/year)	days	30		Soil, seedling pots,																																					
- 1st year: 30 members/group x 2 days x 5 groups /Suco = 300 MD/Suco, EX, FC, FA, (@90pcs/MDx2MDx30=5,400pcs)	MD	900	EX, FC, FA																																						
- 2nd year: 30 members/group x 2 days x 5 groups /Suco = 300 MD/Suco [1] , (@90pcs/MDx2MDx30=5,400pcs)	MD	900																																						
5.4 Transplanting sprouts or sawing seeds in the pots (10 days/Suco/year)	days	30		Sprouts, Seedling pots																																					
- 1st year: 30 members/group x 1 day x 5 groups /Suco = 300 MD/Suco, EX, FC, FA	MD	450	EX, FC, FA																																						
- 2nd year: 30 members/group x 1 day x 5 groups /Suco = 300 MD/Suco [1]	MD	450																																						
5.5 Making organic pesticide and its application (10 days/Suco/year)	days	30		Local materials for pesticides																																					
- First year: 30 members/group x 1 day x 5 groups/Suco = 150 MD/Suco, EX, FC, FA	MD	450	EX, FC, FA																																						
- Second year: 30 members/group x 1 day x 5 groups /Suco = 150 MD/Suco [1]	MD	450																																						
5.6 Watering & maingtenance (weeding, etc.) (5 days/Suco/year)	days	15		Tools for watering																																					
- 1st year: 30 members/group x 1 day x 5 groups/Suco = 150 MD/Suco, EX, FC, FA	MD	450	EX, FC, FA																																						
- 2nd year: 30 members/group x 1 day x 5 groups /Suco = 150 MD/Suco [1]	MD	450																																						
6. Watering & weeding of the seedlings (From July till November: 5 months)	days	75	EX, FA																																					
- 1st year: 1M x 15D/month/nursery x 5 months=100MD/nursery, EX, FA	MD	1,125																																						
- 2nd year: 1Mx15D/month/nursery x 5 months=100MD/nursery, EX, FA	MD	1,125																																						
7. Monitoring & evaluation																																								
7.1 Recording of number of pots after sowing, Done by EX & FA [3]			EX, FA																																					
7.2 Weekly monitoring of seedlings produced in the nursery (from June to December), Done by EX & FA [3]	days	945	EX, FA																																					
- 1 day x 4.5 weeks x 7 months x 5 nusrseries x 3 Suco x 2 years = 1,418 days																																								
7.3 Distribution of seedlings: Recording of number of seedlings distributed to the group members, Done by EX & FA [3]	days	300	EX, FA																																					
- 5 days/nurseries x 2 months (December & January) x 5 nurseries/Suco x 3 Suco x 2 years = 450 days																																								
7.4 Annual evaluation & planning workshop (2 days/Suco/year) [1]	days	12	Expert Team																																					
- 2nd year: Participation is 50% of total member joining in the activity																																								
- 15 members/group x 5 groups/Suco = 75 members/Suco, NFO, Expert team	MD	300																																						
- 3rd year: Participation is 50% of total members who joined the activity																																								
- 15 members/group x 5 groups/Suco = 75 members/Suco, NFO, Expert team	MD	300																																						

Annex E (4): Implementation Schedule of Forest Management Planning Sub-program (covering 3 sucos)

Activities	For 3 Sucos		Human resources of the expert team	Materials	1st Year											
	Unit	Q'ty			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Formation of expert team																
(Expert Team: NDF (1), District Forestry Officer (1), Forest Guard (1), Facilitator (1))																
1.1 Assignment of forest guard (1) and procurement of 1 Facilitator/Expert	days	1	Expert Team		▪											
1.2 Confirmation of the activities and TOR of the Expert Team	days	1	Expert Team		▪											
2. Initial meetings with villagers (half day per 1 Suco)																
- Half day meeting with 50 members/Suco, Expert Team	MD	150	Expert Team			▪										
3. Formation of "group of representatives" & Guidance for the group (50 participants & Expert Team, 1 day/Suco)	days	3	Expert Team				▪									
- Identification of representatives of Aldeias or small village level who join the program	MD	150														
- Discussions & documentation of the roles and responsibilities of the group of representatives																
4. Preparation of Draft Community Forest Management Agreement (DCFMA) in 1st year																
4.1 Review of Forest Management Decree by the group to understand the necessary contents of Draft CFMA (1 day	days	3	Expert Team				▪									
- Participants: Group of representatives, 4 members/Aldeia x 5 Aldeias = 20 members/Suco,	MD	60														
4.2 Preparatoin of Draft CFMA containing the following items and in accordance with the Tara Bundu regulatoins (	days	15	Expert Team					▪								
- Group of representatives: 4 members/Aldeia x 5 Aldeias = 20 members/Suco,	MD	300														
- Map (1:25,000) to show the forest areas/resources																
- Forest management objectives																
- List of forest owners who hold traditional right to own the target land and forest																
- Individuals, families & groups within the community who are included in the DCFMA																
- Specification of use and rights of forest management granted to the community																
- Rules and procedures concerning access and uses of the target forest																
- Inter-community agreements on the management of target forest																
- Roles and functions of relevant central/local governments & their staffs																
- Other necessary terms and conditions																
5. Signing of the Draft Community Forest Management Agreement (DCFMA) (1 day/Suco)	days	3	Expert Team					▪								
5.1 Review of the Draft CFMA by the all community members to agree the contents	MD	300														
5.2 Selection of representatives who sign the DCFMA																
5.3 Sign on the DCFMA by the representatives witnessed by the relevant national/local government staffs																
- 100 participants/Suco, Expert Team																

Note:

"Situation analysis" is done in the PLUP-SP.

"4.2 Preparation of vegetation map" is done by using the Land use planning map made in the PLUP-SP prior to FMP-SP.

"7. Monitoring and evalulatoin (M&E)" are conducted in the M&E of PLUP-SP.

Annex E (5): Implementation Schedule of Community Based Seed Extension Sub-program (covering 3 Sucos)

Activities	Per Suco		1st Year												2nd year												3rd Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
1. Procurement of staff (Formation of Field Teams)																																						
1.1 Procurement of Specialist and Field Facilitators																																						
1.2 Guidance/Training of the Staff																																						
2. Organization of farmers group																																						
3.1 Selection of delegated members	days	5																																				
3.2 Discussion on responsibilities and on crops /issues to be tasted (2 days/aldeia: 10 days/	days	10																																				
3. Exposure Visit	days	3																																				
4. Field Farmers School at a demo plot																																						
4.1 Compost making																																						
(1) How to prepare compost (Site preparation & heaping)	days	10																																				
(2) Field Application	days	5																																				
4.2 Other Training																																						
(1) Soil conservation	days	5																																				
(2) How to prepare a demo plots	days	15																																				
4.3 Planting Maize																																						
(1) How to plant maize	days	5																																				
(2) How to do farm maintenance	Time	5																																				
4.4 Planting Sweet Potatoes and Peanuts																																						
(1) How to plant sweet potatoes and peanuts	days	5																																				
(2) How to do farm maintenance and keep records	days	5																																				
4.5 Regular Monitoring	Time	5																																				
4.6 Harvesting Maize and Evaluation																																						
(1) How to harvest maize, measure yields (cob), and sun dry	days	5																																				
(2) Measure the weight of threshed grains and their taste	days	5																																				
(3) Air tight seed-keeping/Silo use	days	5																																				
4.7 Harvesting Peanuts and Evaluation																																						
(1) How to harvest peanuts	days	5																																				
(2) Measure the weight of shelled nuts and how to keep seeds and do with peanuts	days	5																																				
4.8 Regular Monitoring	Time	5																																				
4.9 Harvesting Sweet Potatoes and Evaluation (2 day/aldeia: 10 days/suco)																																						
(1) How to harvest peanuts	days	5																																				
5. Annual Evaluation and Planning Workshops	days	30																																				
6. Repeating FFS and Replication by participating Farmers																																						
6.1 Compost making	days	5																																				
5.2 Other techniques	days	3																																				
5.3 Planting Maize	days	10																																				
5.4 Planting Sweet Potatoes and Peanuts	days	10																																				
5.5 Regular Monitoring	Times	1																																				
5.6 Harvesting Maize and Evaluation (2 day/aldeia: 10 days/suco)	days	10																																				
5.7 Harvesting Peanuts and Evaluation (1 day/aldeia: 10 days/suco)	days	5																																				
7.8 Regular Monitoring	Times	6																																				
5.9 Harvesting Sweet Potatoes and Evaluation (1 day/aldeia: 10 days/suco)	days	5																																				
7. Annual Evaluation and Planning Workshops	days	30																																				

Annex E (6): Implementation Schedule of Home Garden Sub-program (covering 3 suco)

Activities	Per Suco		1st Year												2nd Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Procurement of staff (Formation of Field Teams)																										
1.1 Procurement of a Specialist and Field Facilitators																										
1.2 Guidance/Training of the Staff																										
2. Organization of farmers group																										
2.1 Selection of delegated members (1 day/aldeia: 5 days/suco)	days	5																								
2.2 Discussions of roles and responsibilities (1 day/aldeia: 5 days/suco)	days	5																								
3.Exposure Visit	days	15																								
4.Baseline Survey & Selection of suitable vegetable crops	days	15																								
5. Field Farmers School for the 1st Batch																										
5.1 Training of Compost making (1 day/aldeia: 5 days/suco)																										
(1) How to prepare compost (explanation & exercise at demo plot)	days	5																								
(2) Monitoring of replication by individuals	days	5																								
(3) How to develop compost (e.g. Turning heap etc.)	days	5																								
(4) Monitoring of replication by individuals	days	5																								
(5) Field Application	days	5																								
5.2 Vegetable Production	days	5																								
(1) How to develop land	days	5																								
(2) How to prepare nursery/seedling	days	5																								
(3) Monitoring of replication by individuals	days	5																								
(4) How to plant in farm land	days	5																								
(5) Monitoring of replication by individuals	days	5																								
(6) How to maintain field (pest observation/field hygiene techniques and weeding)	days	10																								
(7) How to harvest and keep seeds	days	5																								
5.3 Training of food processing																										
(1) How to prepare solar drier	days	5																								
(2) How to make dried foods and do the maintenance of solar driers	days	5																								
6. Semiannual Evaluation and Planning Workshop	days	30																								
7. Field Farmers School for the 2nd Batch																										
7.1 Training of Compost making (1 day/aldeia: 5 days/suco)																										
(1) How to prepare compost (explanation & exercise at demo plot)	days	5																								
(2) Monitoring of replication by individuals	days	5																								
(3) How to develop compost (e.g. Turning heap etc.)	days	5																								
(4) Monitoring of replication by individuals	days	5																								
(5) Field Application	days	5																								
7.2 Vegetable Production																										
(0) How to develop land	days	5																								
(1) How to prepare nursery/seedling	days	5																								
(2) Monitoring of replication by individuals	days	5																								
(3) How to plant in farm land	days	5																								
(4) Monitoring of replication by individuals	days	5																								
(5) How to maintain field (pest observation, pruning/field hygiene techniques and weeding)	times	4																								
(6) How to harvest and keep seeds using a simple silo	days	5																								
7.3 Training of food processing																										
(1) How to prepare solar drier	days	10																								
(2) How to make dried foods and do the maintenance of solar driers	days	5																								
8. Semiannual Evaluation and Planning Workshop	days	30																								

Annex E (7): Implementation Schedule of Grazing Control with Protein Bank (coveing 3 sucos)

Activities	Per Suco		1st Year												2nd Year												3rd Year												4th Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Procurement of staff (Formation of Field Teams)																																																	
1.1 Procurement of specialists																																																	
1.2 Procurement of extension workers																																																	
1.3 Guidance/Training of the staff																																																	
2. Organization of farmers group																																																	
2.1 Selection of delegated members (1 day/aldeia: 5 days/suco)	days	5																																															
2.2 Discussions on the role of members and planning (1 day/alde	days	5																																															
3. Exposure Visit																																																	
4. FFS/Implementation																																																	
(1) Fencing with planting/ resetting (1 km /suco)	days	10																																															
(2) Removing weeds mechanically	days	10																																															
(3) Bioligical control for*Chromlaena odorata*	days	15																																															
(4) Seedling production and Seed preparation	days	10																																															
(5) Making temporary fences for protein banks	days	15																																															
(6) Planting legume fodder trees/Inter-cropping fodder crops	days	10																																															
(7) Field Maintenance	days	5																																															
(8) Organic farming (Compost making)	times	2																																															
(9) Land management																																																	
(10) Distribution of Seeds from protein bank	times	2																																															
5. Annual Evaluation and Planning Workshop	days	3																																															

Annex E (8): Implementation Schedule of Animal Feed Preservation Sub-program (covering 3 sucos)

Activities	Per Suco		1st Year												2nd year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Procurement of staff (Formation of Field Teams)																										
1.1 Procurement of a Specialist and Field Facilitators																										
1.2 Guidance/Training of the Staff																										
2. Organization of farmers grouop																										
2.1 Selection of delegated members (1 day/aldeia: 5 days/suco)	days	5																								
2.2 Discussions of roles and responsibilities (1 day/aldeia: 5 days/suco)	days	5																								
3. Exposure Visit	days	3																								
4. Field Farmers School/ Demo plot at each aldeia (2 plots/aldeia, 10 plots/5 aldeia)																										
4.1 Module 1: Hay Making																										
(1) How to process hay using fodder crops	days	20																								
(2) How to feed to animals	days	20																								
4.2 Module 2: Silage Making (2m * 2m * 2m: 2 plots/al * 5al/suco * 3 suco)																										
(1) How to prepare silage site	days	20																								
(2) How to prepare silage using fodder crops/paddy straw	days	20																								
(3) How to feed to animals	days	20																								
4.3 Organic farming (Compost making)	days	10																								
4.4 Annual Evaluation and Planning Workshop																										
Follow-up																										

Annex E (9): Implementation Schedule of Sustainable Upland Farming Promotion Sub-program (covering 3 sucos)

Activities	Per Suco		1st Year												2nd Year												3rd year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Procurement of staff (Formation of Field Teams)																																						
1.1 Procurement of Specialists																																						
1.2 Procurement of extension workers																																						
1.3 Guidance/Training of the Staff																																						
2. Guidance and Orientation to villages																																						
2.1 Initial meetings with villagers	days	1																																				
2.2 Introductry meetings/sessions	days	1																																				
3. Organization of farmers grouop																																						
3.1 Selection of delegated members	days	2																																				
3.2 Discussions of roles and responsibilities	days	2																																				
4. Exposure visit	days	1																																				
5. Situation Analysis																																						
5.1 Situation analysis	days	3																																				
5.2 Identification of potential areas	days																																					
(1) Discussions of issues and options (2days/suco)	days	2																																				
(2) Evaluation and identificatiin of options (2days/suco)	days	2																																				
6. Action Planning	days	3																																				
7. Field Farmers School																																						
7.1 Training of core farmers at Suco																																						
(1) Compost making	days	10																																				
(2) Effect of land conservation techniques	days	5																																				
(3) Designing	days	5																																				
(4) How to make and use A-frame	days	10																																				
(5) Contour mulching	days	5																																				
(6) Contour composting and Terrace making	days	20																																				
(7) Timber/Fruit tree planting	days	10																																				
(8) Land preparation	days	10																																				
(9) Line planting	days	10																																				
(10) Farm management	days	15																																				
7.2 Assistance in management of demo plots and other farms																																						
8. Evaluation and Annual planning	days	3																																				

Annex E (10): Implementation Schedule of Coffee Plantation Rehabilitation Sub-program (covering 3 sucos)

Activities	Per Suco		1st Year												2nd Year												3rd Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Procurement of staff (Formation of Field Teams)																																						
1.1 Procurement of Specialists																																						
1.2 Procurement of extension workers																																						
1.3 Guidance/Training of the Staff																																						
2. Guidance and Orientation to villages																																						
2.1 Initial meetings with villagers	days	1																																				
2.2 Introductry meetings/sessions	days	1																																				
3. Organization of farmers grouop																																						
3.1 Selection of delegated members	days	2																																				
3.2 Discussions of roles and responsibilities	days	2																																				
4. Exposure visit	days	1																																				
5. Situation Analysis																																						
5.1 Inventory of coffee farms	days	1																																				
5.2 Identification of unproductive coffee farms	days	5																																				
6. Action Planning	days	3																																				
7. Development of demonstration farms with core farmers and Field Farmers Schools (FFSs)																																						
7.1 Training of core farmers at Suco																																						
(1) General guidance on Coffee Production	days	1																																				
(4) Training on compost making	days	10																																				
(2) Training on how to identify unproductive coffee	days	5																																				
(4) Training on harvesting, post-harvesting and collection	days	5																																				
(3) Training on production of coffee seedlings	days	60																																				
(5) Training on coffee farm management	days	10																																				
(6) Training on rejuvenation of coffee trees	days	20																																				
(7) Training on establishment of coffee plantation (hole digging, compost application, planting trees)	days	40																																				
(8) Training on maintenance of rejuenated/replanted area	days	20																																				
7.2 Procurement of necessary materials	times	1																																				
(1) Polybag																																						
7.3 Assistance in management of demo plots and other farms	days																																					
8. Evaluation and Annual planning	days	6																																				

Annex E (11): Implementation Schedule of Slope Protection Works (covering 1 catchment:8 gabion walls)

Activities	Per team		1st Year												2nd Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 Preparatory Work																										
1.1 Assignment of gov staff (2 DRBFC Staffs for one team)	days	7																								
1.2 Procurement of NGO or expert (One expert for one team)																										
1.2.1 Preparation of TOR for the works to be contracted out	days	5																								
1.2.2 Recruitment of experts or NGOs	days	10																								
1.2.3 Evaluation and selection of experts or NGOs	days	5																								
1.3 Guidance to the project staff	days	1																								
2 Assessment of soil movement in the target catchment																										
2.1 Identification of possible construction sites through existing informati	days	10																								
2.2 Assessment of soil movement and determination of the construction si	days	3																								
3 Topografic survey																										
3.1 Implementation of topographic survey	days	24																								
3.2 Elaboration of longitudinal section and plan for target site	days	15																								
4 Basic Design																										
4.1 Drawing basic design of the structure	days	15																								
4.2 Cost estimation and preparation of implementation plan	days	15																								
5 Implementation, monitoring and evaluation of construction works																										
5.1 Recruitment of local labors	days	5																								
5.2 Material Procurement	days	30																								
5.3 Monitoring of progress of work	days	90																								
5.4 Implementation of construction																										
5.4.1 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 1st batch. 3 Gabions																										
(1) Excavation and compaction at foundation	days	6																								
(2) Gabion Installation	days	27																								
(3) Back fill	days	6																								
5.4.2 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 2nd batch. 3 Gabions																										
(1) Excavation and compaction at foundation	days	6																								
(2) Gabion Installation	days	27																								
(3) Back fill	days	6																								
5.4.3 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 3rd batch. 2 Gabions																										
(1) Excavation and compaction at foundation	days	4																								
(2) Gabion Installation	days	18																								
(3) Back fill	days	4																								
6 Supervision and maintenance of structure	years	1																								

Annex E (12): Implementation Schedule of Sediment Flow Control (covering 1 catchment:10 checkdams)

Activities	Per team		1st year												2nd year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1 Formation of working team																										
1 Preparatory Work																										
1.1 Assignment of gov staff (2 DRBFC Staffs for one team)	days	7																								
1.2 Procurement of NGO or expert (One expert for one team)																										
1.2.1 Preparation of TOR for the works to be contracted out	days	5																								
1.2.2 Recruitment of experts or NGOs	days	10																								
1.2.3 Evaluation and selection of experts or NGOs	days	5																								
1.3 Guidance to the project staff	days	1																								
2 Assessment of soil movement in the target catchment																										
2.1 Identification of possible construction sites through existing information	days	3																								
2.2 Assessment of soil movement and determination of the construction site	days	10																								
3 Topografic survey																										
3.1 Implementation of topographic survey	days	30																								
3.2 Elaboration of longitudinal section and plan for target site	days	20																								
4 Basic Design																										
4.1 Drawing basic design of the structure	days	20																								
4.2 Cost estimation and preparation of implementation plan	days	20																								
5 Implementation, monitoring and evaluation of construction works																										
5.1 Recruitment of local labors	days	5																								
5.2 Material Procurement	days	20																								
5.3 Monitoring of progress of work	days	90																								
5.4 Implementation of construction																										
5.4.1 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 1st group: 4 Cabions																										
(1) Excavation in foundation	days	8																								
(2) Gabion Installation	days	36																								
(3) Back fill	days	8																								
5.4.2 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 2nd group: 3 Cabions																										
(1) Excavation in foundation	days	6																								
(2) Gabion Installation	days	27																								
(3) Back fill	days	6																								
5.4.3 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 3rd batch: 3 Cabions																										
(1) Excavation in foundation	days	6																								
(2) Gabion Installation	days	27																								
(3) Back fill	days	6																								
6 Supervision and maintenance of structure	years	1																								

Annex E (13): Implementation Schedule of River Bank Protection Sub-program (covering 1 catchment: Gabion L=180 m)

Activities	Per team		1st year												2nd Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 Preparatory Work																										
1.1 Assignment of gov staff (2 DRBFC Staffs for one team)	days	7																								
1.2 Procurement of NGO or expert (One expert for one team)																										
1.2.1 Preparation of TOR for the works to be contracted out	days	5																								
1.2.2 Recruitment of experts or NGOs	days	10																								
1.2.3 Evaluation and selection of experts or NGOs	days	5																								
1.3 Guidance to the project staff	days	1																								
2 Assessment of soil movement in the target catchment																										
2.1 Identification of possible construction sites through existing information	days	3																								
2.2 Assessment of soil movement and determination of the construction site	days	10																								
3 Topografic survey																										
3.1 Implementation of topographic survey	days	30																								
3.2 Elaboration of longitudinal section and plan for target site	days	20																								
4 Basic Design																										
4.1 Drawing basic design of the structure	days	15																								
4.2 Cost estimation and preparation of implementation plan	days	15																								
5 Implementation, monitoring and evaluation of construction works																										
5.1 Recruitment of local labors	days	5																								
5.1 Material Procurement	days	30																								
5.2 Monitoring of progress of work	days	70																								
5.3 Implementation of construction																										
5.3.1 Implementation of construction (Gabion: H=4.0m, L = 60m)																										
(1) Excavation and compaction at foundation	days	4																								
(2) Gabion Installation	days	40																								
(3) Back fill	days	6																								
5.3.2 Implementation of construction (Gabion: H=4.0m, L = 60m)																										
(1) Excavation and compaction at foundation	days	4																								
(2) Gabion Installation	days	40																								
(3) Back fill	days	6																								
5.3.3 Implementation of construction (Gabion: H=4.0m, L = 60m)																										
(1) Excavation and compaction at foundation	days	4																								
(2) Gabion Installation	days	40																								
(3) Back fill	days	6																								
6 Supervision and maintenance of structure	years	1																								

Annex E (14): Implementation Schedule of Initial Gully Control Sub-program (covering 3 sucos)

Activities	Per 3 suco		1st Year												2nd Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 Preparatory Work																										
1.1 Assignment of gov staff (1 NDF, 1 DFO, 3 Extensionists)	days	3																								
1.2 Procurement of NGOs or experts (1 Expert and 9 Field Assistants)																										
1.2.1 Preparation of TOR for the works to be contracted out	days	10																								
1.2.2 Recruitment of experts or NGOs	days	10																								
1.2.3 Evaluation and selection of experts or NGOs	days	5																								
1.3 Guidance to the project staff																										
1.3.1 Definition of roles and responsibilities of the government staff	days	2																								
1.3.2 Organization of guidance sessions to the government staff involved and experts/NGOs recruited respectively	days	3																								
1.4 Consultation with communities																										
1.4.1 Organization of meetings with suco leaders of the target sucos to explain the purpose and outlines of the watershed management plan and to sound their willingness to take part in the sub-programs (1	days	3																								
1.4.2 Organization of consultation meetings with communities of the target sucos to explain purpose and outlines of the sub-program (1 day/suco)	day	3																								
2 Identification of Potential Areas																										
2.1 Organization of the workshop for resource mapping (1 day/suco)	day	3																								
2.2 Identification of potential areas based on the resource maps of suco	day	3																								
3 Organization of working groups																										
3.1 Identification/selection of participating members of the working groups (1 day/suco)	days	3																								
3.2 Determination of roles and responsibilities of members (2 day/suco)	days	6																								
4 Exposure visit																										
4.1 Coordination with the other organizations which have been implemented similar activities	days	10																								
4.2 Organization of an exposure visit to suco where similar activities have been implemented successflly for the members (1 day/suco)	day	3																								
4.3 Organization of a feedback meeting among the membrs so as to share their finding in the trip and ideas on the sub-program (1 day/suco)	day	3																								
5 Paeticipatory Planning																										
5.1 Organization of a participatory planning workshop with group members and development a work plan for the entire sub-program	days	3																								
5.2 Re-estimation of the necessary budget for implementation of the work	days	6																								
6 Selection of the demonstration plots (3 days/suco)	days	9																								
7 Hands-on training at the demonstration plots																										
7.1 Procurement and distribution of materials																										
7.1.1 Procurement of agricultural tools	days	5																								
7.1.2 Distribution of materials (3 day/suco)	days	9																								
7.1.3 Procurement of local materials for the structure(10 days/suco)	days	30																								
7.1.4 Procurement of seedings of king grass	days	14																								
7.1.5 Provision of seeds of king grass (3 day/suco)	days	9																								
7.2 Organization of Hands-on training																										
7.2.1 Guidance on techniques of soil conservation against the gully erosion (5	days	15																								
7.2.2 Design of the demonstration plot (5 day/suco)	days	15																								
7.2.3 Cleaning and compactation of the foundation at the demonstration plot (15 day/suco)	days	45																								
7.2.4 Installation of structures (25 day/suco)	days	75																								
7.2.5 Back fill at the structures (15 day/suco)	days	45																								
7.2.6 Planting king grass (10 day/suco)	days	30																								
7.2.7 Maintenance of the demonstration plot (10 days/suco)	days	30																								
8 Technical Assistance to the members in replication of the techniques at	months	9.6																								
9 Monitoring and evaluation																										
9.1 Monitoring and maintenance for the deomnstration plots	months	9.3																								
9.2 Monitoring of the tools provided	months	9.6																								
9.3 Organization of participatory evaluation workshop (2 days/suco)	days	6																								

Annex E (15): Implementation Schedule of Rural Energy Development Sub-program (covering 3 sucos)

Activities	Per Suco		1st Year												2nd Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Procurement of staff (Formation of Field Teams)																										
1.1 Procurement of a Specialist																										
1.2 Procurement of extension workers																										
1.3 Guidance/Training of the Staff																										
2. Exposure Visit																										
3. Participatory Workshop for Improved Cooking Stoves (ICSs)																										
3.1 Introduction of ICSs (2 days/suco)	days	10																								
3.2 Discussion of Possible Option (2 days / suco)	days	10																								
3.3 Baseline Survey (5 day / aldeia simultaneously)	days	5																								
4. Organization of farmers group																										
4.1 Selection of core members (3 hhs/aldeia 15 hhs/suco, 45 hhs in total)	days	5																								
4.2 Discussions of responsibilities and action planning (1 day/aldeia)	days	5																								
5 Model Test by 15 core members/ suco																										
(1) Preparation of materials, designing and making ICSs (15 days/suco)	days	15																								
(2) Test Use of Models (3 days /suco with different dates)	days	9																								
(3) Workshop to discuss effectiveness (15 hh/suco)	days	1																								
(4) Design Modification (20 days/suco)	days	10																								
6 Presentation Workshop by core members to other members																										
(1) Environment Education (why ICS?)	days	5																								
(2) Demonstration for ICS installation (1day, 5 days /suco)	days	5																								
7. ICS Material Distribution	days	30																								
8. ICS making by participants (1batch: 30 hh/aldeia = 450 hh in total)	days	45																								
9. Use, Monitoring and Follow-up training (3 times/suco)																										
10.Maintenance Training	days	5																								
11. Annual Evaluation and Planning Workshop (75 HH/day* 3 days/ Suco)	days	9																								

Annex E (16): Implementation Schedule of Income-Generating/Cost-Saving Sub-program (covering 3 sucos)

Activities	Per Suco		1st year												2nd year												3rd year												4th year											
	Unit	Q'ty	Jan	Feb	Ma	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Ma	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Ma	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Ma	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Procurement of staff (Formation of Field Teams)																																																
1.1 Procurement of an Expert/Facilitator																																																	
1.2 Procurement of Field Assistants																																																
1.3 Guidance/Training of the Staff																																																
2. Participatory Workshop																																																
2.1 Resource-finding (e.g. resources mapping, transect walk, and ven-diagram for marketing)	days	9																																														
2.3 Discussion of Possible Option, Project Identification(3 day / suco)	days	9																																														
3. Organization of farmers group																																																
3.1 Selection of delegated members (2 day/suco)	days	6																																														
3.2 Discussions of roles, responsibilities and action plan (3 day/suco, 9 days)	days	9																																														
4 Baseline Survey (5 days /alidea)	days	25																																														
5 Exposure Visit	days	15																																														
6 Common Issue Training																																																
(1) Market Survey (including preparation)	days	3																																														
(2) Business Management (Bookkeeping & Accounting) and Checking	days	2																																														
(3) Advertisement	days	1																																														
7 Training of dried food processing (and group implementation)																																																
(1) How to prepare a solar drier (3-day training/ aldeia)	days	15																																														
(2) How to make dried vegetable, fruits, fishes and meats (5 days)	days	20																																														
(3) How to make a package	days	20																																														
(4) Trial Implementation (including follow-up : 3 times/group)	Time	6																																														
8 Training of Tais Making (group implementation)																																																
(1) How to prepare tais (5 days)	days	30																																														
(2) Trial Implementation (including follow-up : 3 times/group)	Time	6																																													
9 Training of Sewing machine/cloth reparing (individual implementation)																																																
(1) Use of sewing machine for cloth making/reparing (5 days)	days	30																																														
(2) Trial Implementation (including follow-up training: 3 times/group)	Time	6																																													
10 Training of Handicraft production (training only)																																																
(1) How to produce handicraft (5 days)	days	30																																														
11 Annual Evaluation and Planning Workshop	days	5																																														

Annex F (17): Cost Breakdown of Public Awareness Campaign Sub-Program (covering 4 sucos)

Activities	Per Team		1st Year												2nd Year											
	Unit	Q'ty	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 Preparatory Work																										
1.1 Assignment of gov staff (1 NDF, 1 NDRSS, 1 DFO)	days	3																								
1.2 Procurement of NGOs or experts (1 PAC Expert, 1 PAC Material Development Expert, 3 Field																										
1.2.1 Preparation of TOR for the works to be contracted out	days	10																								
1.2.2 Recruitment of experts or NGOs	days	10																								
1.2.3 Evaluation and selection of experts or NGOs	days	5																								
1.3 Guidance to the project staff																										
1.3.1 Definition of roles and responsibilities of the government staff involved	days	2																								
1.3.2 Organization of guidance sessions to the government staff involved and experts/NGOs recruited	days	3																								
2 Assessment of current conditions of the villages																										
2.1 Review of the reports on present condition of the villages	days	2																								
2.2 Determination of the main theme and topics to be addressed	days	2																								
3 Development of Awareness Raising Materials																										
3.1 Development of materials-1																										
3.1.1 Development of a story line of a picture book	days	60																								
3.1.2 Development of the picture book	days	90																								
3.2 Development of materials-2																										
3.2.1 Development of a plot for pamphlet	days	60																								
3.2.2 Development of the pamphlet	days	90																								
3.3 Development of materials-3																										
3.3.1 Development of a plot for leaflet	days	90																								
3.3.2 Development of the leaflet	days	120																								
3.4 Organization of a meeting for the trial use of the material prepared	days	3																								
3.5 Finalization of the material	days	30																								
4 Initial contact with the target villages																										
4.1 Organization of meetings with suco leaders and/or teachers of the target sucos to explain the purpose and outlines of the watershed management plan and to sound their willingness to take part in the sub-programs (1 day/suco)	days	8																								
5 Awareness Level Survey																										
5.1 Preparation of the questionnare form	days	10																								
5.2 Implementation of the survey (4 days/suco)	days	32																								
5.3 Data encoding	days	20																								
5.4 Data analysis	days	5																								
6 Organization of the workshops																										
6.1 Development of a workshop design	days	10																								
6.2 Organization of a 1st workshop on sustainablel forest and watershed management for children																										
6.2.1 Presentation of the material for children (1day/suco)	days	8																								
6.2.2 Organization of a drawing session with children and a dialogue session between adult and children (2	days	16																								
6.3 Organization of a 2nd workshop on sustainablel forest and watershed management for adults																										
6.3.1 Presentation of the material for adults (1day/suco)	days	8																								
6.3.2 Organization of a meeting among participating adults to discuss about sustainablel forest and watershed management (2 days/suco)	days	16																								
6.4 Organization of a 3rd workshop on the topics related to sub-programs implemented in the villages																										
6.4.1 Presentation of the material for adults (1day/suco)	days	8																								
6.4.2 Organization of a meeting among participating adults to discuss on issues in implementation of the sub-program or/and attainment of main aims of the sub-program (2 days/suco)	days	16																								
7 Post evaluation of Awareness Level																										
7.1 Preparation of the questionnare form	days	5																								
7.2 Implementation of the survey (4 days/suco)	days	32																								
7.3 Data encoding	days	20																								
7.4 Data analysis	days	5																								
8 Coordination with other organizations	months	23																								

Annex E (18): Implementation Schedule of Environmental Education Sub-Program (covering 14 schools)

Activities	Per team		1st Year												2nd Year												3rd Year				
	Unit	Q'ty	1st Month	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	1st	2nd	3rd	4th	5th
1 Formation of working team																															
1.1 Recuirtment of members	days	7																													
1.2 Assignment of gov staff	days	7																													
1.3 Guidance/Orientation to members	days	1																													
2 Needs Assessment and Identification of main conponents of activities																															
2.1 Preparation of Needs Assessment, e.g.,identification of target groups, preparation of format	days	10																													
2.2 Organization of workshop for Needs Assessment	days	1																													
2.3 Data Analysis	days	10																													
2.4 Identification of main components of activities																															
2.4.1 Identification of possible subjects for curriculum of environemntal	days	10																													
2.4.2 Identification of possible themes and type of materials for environmental education	days	10																													
2.4.3 Determination of contents of Teacher's handbook	days	10																													
2.4.4 Determination of components of teacher training courses	days	10																													
3 Development of curriculum and materials of environmental education																															
3.1 Development of curriculum of environmental education	days	60																													
3.2 Development of a Teacher's Handbook on environmental education	days	30																													
3.3 Development of materials for environmental education	days	60																													
3.4 Pretest of curriculum of environmental education, Teacher's Handbook and material for environmental education @ 4 schools (1																															
3.4.1 Identification of target schools	days	5																													
3.4.2 Guidance with target schools	days	4																													
3.4.3 Implementation of pretest	days	30																													
3.5 Monitor the progress of pretest of curriculum																															
3.5.1 Preparation of monitoring format	days	5																													
3.5.2 Meeting with teachers to monitor the progress of the pretest	days	4																													
3.6 Feed-back meeting to revise curriculum of environmental education, Teacher's Handbook and material for environmental education	days	1																													
3.7 Preparation of Draft Final of curriculum of environmental education, Teacher's Handbook and material for environmental education	days	30																													
3.8 Implementation of curriculum @ 14 schools (1 school/sub-district)	year	1																													
3.9 Feed-back meeting to revise curriculum of environmental education, Teacher's Handbook and material for environmental education	days	1																													
3.10 Finalization of curriculum of environmental education, Teacher's Handbook and material for environmental education	days	30																													
4 Development of teacher training courses @ 42 participants from 14 schools : 1 school/sub-district in the target watersheds																															
4.1 Preparation of training materials	days	20																													
4.2 Preparation of schedule f training courses and coordination	days	10																													
4.3 Implementation of training courses	days	7																													
4.4 Implementation of exposure visit	days	2																													

Annex E (19): Implementation Schedule of Wateshed-related Institutional Development Sub-program

Activities	Unit	Q'ty	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20
1.Procurement of Specialist																						
1.1 Recruitment of Specialist	days	20																				
1.2 Assignment of gov staff	days	20																				
1.3 Guidance/Orientation to members	days	10																				
2. Situation analysis																						
2.1 Review of current situation of the sector	days	15																				
2.2 Review of forestry policy and FMD	days	20																				
2.3 Review of watershed management plan	days	10																				
3. Preparation of Draft Implementation Procedures																						
3.1 Participatory workshop with MAF Staff	days	5																				
3.2 Preparation of draft implementation proced	days	20																				
3.3 Consultation about the draft procedures	days	20																				
3.4 Finalization of the procedures	days	20																				
4. Process of Enactment																						
5. Monitoring of implementation																						
5.1 Periodical monitoring by the specialist	days	10																				
5.2 Revision of the implementation procedures	days	9																				

Annex E (20): Implementation Schedule of Capacity Development Sub-program (CD-SP)

Activities	Unit	Q'ty	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
1.Procurement of Specialist														
1.1 Recruitment of Training Teams	days	20												
1.2 Assignment of gov staff	days	20												
1.3 Guidance/Orientation to members	days	10												
2. Situation/Training Needs analysis														
2.1 Review of past activities related capacity development	days	30												
2.2 Training needs assessment survey	days	75												
2.3 TNA workshops	days	30												
3. Development of Training Curricula for the target groups														
3.1 Preparation of lists of materials and resource persons for training	days	20												
3.2 Development of curricula/training program	days	40												
4. Preparation for Training														
4.1 Organization of a coordination body in the government	days	15												
4.2 Recruitment of trainers	days	30												
5. Implementation of Trianing Program														
5.1 Training of NDF and DFOs														
Project management/overall aspect	days	15												
5.2 Training of NDAH, NDIPA, NDSDAC, DCOs														
Project management/overall aspect	days	15												
5.3 Training of DFOs and Forest Guards,														
TOT on managerial and technical aspects	dasy	15												
5.4 Training of DCrOs , DCoOs, ane Extensionists														
TOT on managerial and technical aspects	days	15												
6. Evaluation of Training														
6.1 Evaluation workshops with the trainees	days	30												
6.2 Preparation of report	days	15												

Annex – F

Estimated Costs of the Sub-programs in the Watershed Management Plan

Annex F (1): Cost Summary of Participatory Land Use Planning Sub-program (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Meeting Cost	Times	-	-	16,200
1.2 Other expenses	-	-	-	510
Sub-total (1)				16,710
2. Remuneration/Staffing cost				
2.1 Specialists	MM	13	700	9,240
2.2 Field workers	MM	69	370	25,530
Sub-total (2)				34,770
3. Facilities	-	-	-	
Sub-total (3)				2,200
Total (1+2+3)				53,680
4. Management cost (10% of Total Cost)				5,368
5. Contingency (5% of Total Cost)				2,684
Grand Total				61,732
Grand Total (round)				**62,000**

Annex F (1): Cost Breakdown of Participatory Land Use Planning Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

1. Direct Expenses	Per Village		Materials	For One team (or 3 sucos)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1.1 Formation of PLUP Team							
1.2 Guidance and Orientation to villages							
1.2.1 Initial meetings with villagers	days	2	Meeting cost (snacks & meals)	Pax	150	2	600
1.2.2 Introductry meetings/sessions	days	2	Meeting cost (snacks & meals)	Pax	150	2	600
1.3 Situation Analysis							
1.3.1 PRA Sessions	days	5	Meeting cost (snacks & meals)	Pax	150	2	1,500
			Meeting cost (materials)	Set	3	100	300
1.3.2 Analysis of RRA survey							
(1) Analyses of PRA session	days	10					
(2) Procurement of Aerial photos	days	1	Printing cost (A0)	Sheet	3	20	60
1.4 Workshops and Analyses							
1.4.1 Preparation of present land use							
(1) Consolidation data into aero map	days	3	Meeting cost (snacks & meals)	Pax	75	2	450
(2) Transect walk	days	2	Meeting cost (snacks & meals)	Pax	75	2	300
(3) Preparation of present land use map by GIS	days	1	Printing cost (A0)	PCs	9	20	180
(4) Plenary session with villagers	days	1	Meeting cost (snacks & meals)	Pax	300	2	600
1.4.2 Land Use Option and Future Land Use Mapping							
(1) Workshop on land use option	days	2	Meeting cost (snacks & meals)	Pax	75	2	300
(2) Workshop on future land use mapping	days	2	Meeting cost (snacks & meals)	Pax	75	2	300
(3) Preparation of future land use by GIS	days	1	Printing cost (A0)	PCs	9	20	180
(4) Plenary session with villagers	days	1	Meeting cost (snacks & meals)	Pax	300	2	600
1.4.3 Development of the village regulations							
(1) Workshop on development of villrage regulations	days	3	Meeting cost (snacks & meals)	Pax	75	2	450
(2) Preparation of draft village regulations	days						
(3) Review and revision of the draft regulations	days	1	Meeting cost (Transparent paper (A0))	PCs	75	2	150
1. 4.4 Consultation with communities in the village and MAF							
(1) Consultaiton meetings at the aldeia level	days	5	Meeting cost (snacks & meals)	Pax	120	2	1,200
(2) Finalization of the village regulations	days	2	Meeting cost (snacks & meals)	Pax	75	2	300
(3) Presentation of the regulations to MAF and district	days	1	Transportation cost (US$10 /person)	PCs	9	10	90
1.4.5 Organization of Tara- Bandu ceremony							
(1) Preparation for the ceremony	days	3					
(2) Tara Bandu ceremony	times	1	Meeting cost (meal and consumables)	PCs	450	10	4,500
1.5 Implementation and monitoring of the regulations							
1.5.1 Monthly monitoring meeting at the suco level	times	14	Meeting cost (snacks & meals)	Pax	75	2	2,100
1.5.2 Bi-monthly meeting at the aldeia level	times	7	Meeting cost (snacks & meals)	Pax	75	2	1,050
1.6 Review and revision of the village regulations							
1.6.1 Review of the regulations	days	2	Meeting cost (snacks & meals)	Pax	75	2	300
1.6.2 Preparation of the revised regulations	days	3					
1.6.3 Approval of the revised village regulations	days	1	Meeting cost (snacks & meals)	Pax	300	2	600
Sub-total (1)							16,710

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Qualification	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
2.1 Facilitator	Expeienced, Graduate, Major in Forestry or Agriculture	MM	13	700	9,240
2.2 GIS operator	Experienced	MM	1	600	600
2.2 Field Assistance	Diploma of Agri school	MM	69	370	25,530
Sub-total (2)					35,370

c. Cost of Facilities

3. Facilities	Specification	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
3.1 Motor bike	125 cc	Unit	1	2,200	2,200
3.2 4WD Vehicle	Mitsubish Pajero	UM	0	2,250	0
Sub-total (3)					2,200

Annex F (2): Cost Summary of Tree Planting Promotion Sub-program (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Meeting Costs				10,725
1.2 Other expenses				27,000
Sub-total (1)				37,725
2. Remuneration/Staffing cost				
2.1 Facilitator/Expert	6	700	700	4,200
2.2 Field assistant	45	370	370	16,650
Sub-total (2)				20,850
3. Facilities				
Sub-total (3)				4,325
Total (1+2+3)				62,900
4. Management cost (10% of Total Cost)				6,290
5. Contingency (5% of Total Cost)				3,145
Grand Total				72,335
Grand Total (round)				**72,000**

Annex F (2): Cost Breakdown of Tree Planting Promotion Sub-program (covering 3 sucos)

Activities	Q'ty in One Suc		Type of cost	For One team (or 3 sucos)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1. Formation of expert team & preparatoin of starting the activity [1)]							
1.1 Assignment of forest guard (1) and extensionist (3)	days	1					
1.2 Procurement of NGO facilitator (1) & field staff (3)	days	1					
1.3 Review of overall work plan and preparation of TOR of member of expert team (Half day meeting)	days	1					
2. Formation of farmers gropus and guidance for the group members [1)]							
2.1 One-day orientation meeting about the sub-program and formulation of farmers groups who join the program	MD	50	Meeting cost (Lunch)	Pax	150	2	300
2.2 Two-day discussion of the mission, roles and responsibilities of the group (50 pax/Suco)	MD	100	Meeting cost (Lunch)	Pax	300	2	600
2.3 One-day exposure visit to the on-going project site with 30 members/suco	MD	30	Meeting cost (Lunch)	Pax	90	2.5	225
- Cost to rent a truck to carry the participants: @ $150/day	UD	1	Rental cost of truck	Pax	3	150	450
3. Planning workshop of tree-planting activity by the farmers' groups							
3.1 One-day meeting on Identification of work contents, time schedule, rules and regularions of the group (75 pa	MD	75	Meeting cost (Lunch)	Pax	225	2	450
3.2 Two-day discussion on how to implement and monitor the activity (75 pax/Suco)	MD	150	Meeting cost (Lunch)	Pax	450	2	900
4. Training and demonstration for farmers groups in the demonstration plot							
(1st year)							
4.1 Two-day hands-on training on land preparation (20 pax/group x 5 groups) (1st year)	MD	200	Meeting cost (Lunch)	Pax	600	2	1,200
4.2 Two-day hands-on training on planting (20 pax/group x 5 groups)	MD	200	Meeting cost (Lunch)	Pax	600	2	1,200
- Cost for seedlings (150 seedlings x 1.2 x 20 persons/groups x 5 groups @ US$ 0.5/seedlings)	pcs	18000	Material costs	Pax	54000	0.5	27,000
4.3 Two-day hands-on training on tending (spots weeding) (20 pax/group x 5 groups)	MD	200	Meeting cost (Lunch)	Pax	600	2	1,200
(2nd year)							
4.4 One-day hands-on training on replanting (1 day/group) and tending (spots weeding) (20 pax/group x 5 group	days	100	Meeting cost (Lunch)	Pax	300	2	600
4.5 One-day hands-on training on tending (spots weeding) (20 pax/group x 5 groups)	MD	100	Meeting cost (Lunch)	Pax	300	2	600
4.6 One-day hands-on training on maintenance of planted trees, climber cutting & cearing of bushes, (20 pax/gro	days	100	Meeting cost (Lunch)	Pax	300	2	600
(3rd year)							
4.7 One-day hands-on training on maintenance of planted trees, climber cutting & cearing of bushes, (20 pax/gro	MD	100	Activity cost (Lunch)	Pax	300	2	600
5. Monitoring of tree planting							
5.1 Recording of number of seedlings planted by the group members (Interview survey), Done by EX, FA							
- In 1st-2nd year: 2 days x 5groups= 10days/Suco	days	30					
- In 3rd year: 2 days x 5groups x 2 batches = 20days/Suco	days	30					
5.2 Sample monitoring of trees survival planted by the members, Done by EX, FA **(Sampling rate: 10 % of total member)**							
- In 2nd year: 3 members/group, 2days/group, 2days*5groups=10days/Suco	days	30					
- In 3rd year: 3 members/group, 2days/group, 2days*5groups=10days/Suco	days	30					
5.3 Annual evaluation & planning workshop (2 days/Suco/year) [1)]	days	18					
- **2nd year**: Participation is 75% of total member joining in the activity of first batch.							
- 15 members/group x 5 groups/Suco = 75 members/Suco, NFO, Expert team	MD	150	Meeting cost (Lunch)	Pax	450	2	900
- **3rd year**: Participation is 75% of total members who joined the activity in the first & second batch.							
- 15 members/group x 5 groups/Suco = 75 members/Suco, NFO, Expert team	MD	150	Meeting cost (Lunch)	Pax	450	2	900
6. Continuous technical assistance for farmers group							
6.1 Field visit for technical assistance to the farmers group (3 times/week/Suco, 3 years & 3 months)	days	1,521					
- The assistance includes the follow-up activity in the third year of each batch.							
Total cost							37,725

Note:

1) These activities can be canceled in case the SP-SP SP carrys them out in the same target Suco.

b. Cost of Hired Staff and Facilities

Activities	Qualification/Specification	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
1. Hired Staff					
1.1 Facillitator/Expert	Univ graduate, Major in Forestry	MM	6	700	4,200
1.2 Field assistant	Diploma of Rudal Development college	MM	45	370	16,650
Sub-total (2)					20,850
2. Facilities					
2.1 Motor bike	125 cc	No.	1	2,200	2,200
2.2 Cost to rent a 4WD vehicle	Transport for Expert Team	Day	25	85	2,125
Sub-total (3)					4,325

Annex F (3): Cost Summary of Seedling Production Promotion Sub-program (covering 3 sucos)

Activities	Per 3 Sucos			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Meetings				26,010
1.2 Other direct expenses				30,710
Sub-total (1)				56,720
2. Remuneration of hired staff				
2.1 Facilitator/Expert	MM	5	700	3,500
2.2 Field assistant	MM	30	370	11,100
Sub-total (2)				14,600
3. Facilities				
Sub-total (3)				15,700
Total (1+2+3)				87,020
4. Management cost (10% of Total Cost)				8,702
5. Contingency (5% of Total Cost)				4,351
Grand Total				100,072
Grand Total (round)				**100,000**

Annex F (3): Cost Breakdown of Seedling Production Promotion Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

Activities	Q'ty for 1 suco		Type of cost	Total Cost for 3 sucos			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1. Formation of expert team & preparatoin of starting the activity							
1.1 Assignment of forest guard (1) and extensionist (3)	days	1					
1.2 Procurement of NGO facilitator (1) & field staff (3)	days	1					
1.3 Review of overall work plan and preparation of TOR of member of expert team	days	1					
- NDF Forest Officer, DFO, FC	MD	3					
1.4 Guidance/Orientation to the forest guard, extensionist, NGO field staff	days	1					
- NDF Forest Officer, DFO, FC, FG, EX (3), FA	MD	8					
2. Formation of farmers gropus and guidance for the group members							
2.1 One day orientation of the sub-program and formulation of farmers groups who join the program (75 pax/Suco)	MD	50	Meeting cost (Lunch)	Pax	150	2	300
2.2 Two-day discussions of the mission, roles and responsibilities of the group (75 pax/Suco)	MD	100	Meeting cost (Lunch)	Pax	300	2	600
3. Planning workshop of seedling production activity by the farmers' groups							
3.1 One-day meeting on identification of work contents, time schedule, rules and regularions of the group (75 pax/Suc	MD	75	Meeting cost (Lunch)	Pax	225	2	450
3.2 Two-day discussions on how to implement and monitor the activity (75 pax/Suco)	MD	150	Meeting cost (Lunch)	Pax	450	2	900
4. Nursery construction (1-2 year) and maintenance (2-4 year)							
4.1 One-day field verification of water source for the nursery (5 members/groups x 1 day x 5 groups)	MD	25	Meeting cost (Lunch)	Pax	75	2	150
			Map, GPS				
4.2 Two-day meeting on the rules to use the water source/tank for the seedling produciton (20 pax/group)	MD	200	Meeting cost (Lunch)	Pax	600	2	1,200
4.3 Installatoin of water supply system (3 members/group x 3 days x 5 groups for construction)	MD	45	Activity cost (Lunch)	Pax	135	2	270
			Tools & materials for construction	(See item 8.1)			
4.4 Nursery development (land preparation, set ups of poles, fences, shades, & seedbeds) (15 pax/group x 15 days x 5	MD	1,125	Activity cost (Lunch)	Pax	3375	2	6,750
4.5 Maintenance of nursery (roofing, fencing, and seedbed making) (1 person x 3 days x 6 months/groups x 5 groups)	MD	90	Activity cost (Lunch)	Pax	270	2	540
5. Training and demonstration for farmers groups on seedling production (done for 3 years)							
5.1 1st Year			Tools & materials for construction				
5.1.1 Mixing soil (20 pax x 2 days/group x 5 groups)	MD	200	Activity cost (Lunch)	Pax	600	2	1,200
5.1.2 Making seedbeds, sawing seeds, watering and maintenance (20 pax x 2 days/group x 5 groups)	MD	200	Activity cost (Lunch)	Pax	600	2	1,200
5.1.3 Filling soil into pots & arranging them on the bede (20 pax x 2 days/group x 5 groups) (90 pcs/MD x 2 MD x 20	MD	200	Activity cost (Lunch)	Pax	600	2	1,200
5.1.4 Transplanting sprouts or sawing seeds in the pots (20 pax x 1 day/group x 5 groups)	MD	100	Activity cost (Lunch)	Pax	300	2	600
5.1.5 Making organic pesticide and its application (20 pax x 1 day/group x 5 groups)	MD	100	Activity cost (Lunch)	Pax	300	2	600
5.1.6 Watering & maingtenance (weeding, etc.) (20 pax x 1 day/group x 5 groups)	MD	100	Activity cost (Lunch)	Pax	300	2	600
5.2 2nd Year			Tools & materials for construction				
5.2.1 Mixing soil (20 pax x 2 days/group x 5 groups)	MD	200	Activity cost (Lunch)	Pax	600	2	1,200
5.2.2 Making seedbeds, sawing seeds, watering and maintenance (20 pax x 2 days/group x 5 groups)	MD	200	Activity cost (Lunch)	Pax	600	2	1,200
5.2.3 Filling soil into pots & arranging them on the bede (20 pax x 2 days/group x 5 groups) (90 pcs/MD x 2 MD x 20	MD	200	Activity cost (Lunch)	Pax	600	2	1,200
5.2.4 Transplanting sprouts or sawing seeds in the pots (20 pax x 1 day/group x 5 groups)	MD	100	Activity cost (Lunch)	Pax	300	2	600
5.2.5 Making organic pesticide and its application (20 pax x 1 day/group x 5 groups)	MD	100	Activity cost (Lunch)	Pax	300	2	600
5.2.6 Watering & maingtenance (weeding, etc.) (20 pax x 1 day/group x 5 groups)	MD	100	Activity cost (Lunch)	Pax	300	2	600
6. Watering & weeding of the seedlings (From July till November: 5 months)							
- 1st year: 1M x 15D/month/nursery x 5 months=100MD/nursery, EX, FA	MD	375	Activity cost (Lunch) [2]	Pax	1125	1	1,125
- 2nd year: 1Mx15D/month/nursery x 5 months= 100 MD/nursery, EX, FA	MD	375	Activity cost (Lunch) [2]	Pax	1125	1	1,125
7. Monitoring & evaluation							
7.1 Recording of number of pots after sowing, Done by EX & FA [3]							
7.2 Weekly monitoring of seedlings produced in the nursery (from June to December), Done by EX & FA [3]	days	945					
- 1 day x 4.5 weeks x 7 months x 5 nusrseries x 3 Suco x 2 years = 1,418 days							
7.3 Distribution of seedlings: Recording of number of seedlings distributed to the group members, Done by EX & FA	days	300					
- 5 days/nurseries x 2 months (December & January) x 5 nurseries/Suco x 3 Suco x 2 years = 300 days							
7.4 Annual evaluation & planning workshop (2 days/Suco/year) [4]	days	12					
- **2nd year**: Participation is 75% of total member joining in the activity of first batch.							
- 15 members/group x 5 groups/Suco = 75 members/Suco, NFO, Expert team	MD	150	Meeting cost (Lunch)	Pax	450	2	900
- **3rd year**: Participation is 75% of total members who joined the activity in the first & second batch.							
- 15 members/group x 5 groups/Suco = 75 members/Suco, NFO, Expert team	MD	150	Meeting cost (Lunch)	Pax	450	2	900
8. Procurement of materials per one nursery							
8.1 Water tank & water supply system construction (Quantiry/Nursery)							
- Cement (4 kgs/Nursery x 5 groups)	kg	20		kg	60	7	420
- Rubber hose (1 role-20 meter/Nursery x 5 groups)	no.	5		no.	15	85	1,275
- Poly tank (1 tank/Nursery x 5 groups)	no.	5		no.	15	180	2,700
- Polyvinyl pipe (100 meter/Nursery x 5 groups)	meter	500		meter	1500	2	3,000
- Water tap (3 pcs/Nursery x 5 groups)	no.	15		no.	45	3.5	158
- Joints (5 pcs/Nursery x 5 groups)	no.	15		no.	45	4	180
- Pipe tape (2 pcs/Nursery x 5 groups)	no.	10		no.	30	1.5	45
- Sands (1 trip of truck/Nursery x 5 groups)	trip	5		trip	15	100	1,500
8.2 Nursery construction (Quantity/Nursery)							
- Wheel barrow (2 pcs/Nursery x 5 groups)	pcs	10		pcs	30	45	1,350
- Prastic rope (1 pcs x 5 groups)	pcs	5		pcs	15	3	45
- Measure tape (1pcs x 5 groups)	pcs	5		pcs	15	10	150
- Riddle of sand (1 pcs x 5 groups)	pcs	5		pcs	15	35	525
- Nails (2 kgs x 5 groups)	kgs	10		kgs	30	3	90
- Wire (1 role-20 meter x 5 groups)	no.	5		no.	15	2	30
- Small bucket (2 buckets x 5 groups)	no.	10		no.	30	5	150
- Mask (1 packet x 5 groups)	pcs.	10		pcs.	30	15	450
- Bamboo poles (250 poles x 5 groups) [5]	no.	1,250		no.	3750		0
- Palm leaves (360 leaves x 5 groups) [5]	no.	1,800		no.	5400		0
- Saw (1 pc x 5 groups)	pcs	5		pcs	15	5	75
- Hammer (1 pc x 5 groups)	pcs	5		pcs	15	5	75
- Prastic rope (1 role x 5 groups)	role	5		role	15	3	45
- Measure tape (1 pc x 5 groups)	pcs	5		pcs	15	10	150

Annex F (3): Cost Breakdown of Seedling Production Promotion Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

Activities	Q'ty for 1 suco		Type of cost	For One team (or 3 sucos)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
8.3 Seedling production (No. of seedlings per one nursery, 50 % is reserve for "non-germination" seeds.[6]							
Quantity of seeds procured/nursery/year (1st year)							
- Longan (Kelengkeng): 12 g/fruit x 360 fruits x 1.5 = 6.48 kg x 5 groups / 0.5	kgs	64.8	Tree seeds	kgs	194.4	6	1,166
- Clove (Cengkeh): 2.13 gram/seed x 360 seeds x 1.5 = 1.15 kg x 5 groups / 0.5	kgs	11.5	Tree seeds	kgs	34.5	5	173
- Rambutan: 12 g/fruit x 360 fruits x 1.5 = 6.48 kg x 5 groups / 0.5	kgs	64.8	Tree seeds	kgs	194.4	5	972
- Candle nuts or other NTFPs tree							
- Ex) Candle nuts: 12 g/seed x 360 seeds x 1.5 = 6.48 kg x 5 groups / 0.5	kgs	64.8	Tree seeds	kgs	194.4	6	1,166
- Mahogany: 0.53 g/seed x 600 seeds x 1.5 = 0.48 kg x 5 groups / 0.5	kgs	4.8	Tree seeds	kgs	14.4	10	144
- Grevillea: 0.5 g/pod x 600 pods x 1.5 = 0.45 kg x 5 groups / 0.5	kgs	20	Tree seeds	kgs	60	10	600
- Teak: 0.72 g/seed x 600 seeds x 1.5 = 0.65 kg x 5 groups / 0.5	kgs	6.5	Tree seeds	kgs	19.5	5	98
- Petai (600 pcs x 1.2 = 720 pcs), 3 g/seed x 720 seeds = 2.16 kgs x 5 groups / 0.5	kgs	21.6	Tree seeds	pcs	64.8	5	324
- Calliandra: 0.07 g/seed x 720 seeds x 1.5 = 0.08 kg x 5 groups / 0.5	kgs	0.8	Tree seeds	pcs	2.4	5	12
- Lamtoro (L 19): 0.05 g/seed x 720 seeds x 1.5 = 0.054 kgs x 5 groups / 0.5	kgs	0.54	Tree seeds	pcs	1.62	10	16
Quantity of seeds procured/nursery/year (2nd year)							
- Longan (Kelengkeng): 12 g/fruit x 360 fruits x 1.5 = 6.48 kg x 5 groups / 0.5	kgs	64.8	Tree seeds	kgs	194.4	6	1,166
- Clove (Cengkeh): 2.13 gram/seed x 360 seeds x 1.5 = 1.15 kg x 5 groups / 0.5	kgs	11.5	Tree seeds	kgs	34.5	5	173
- Rambutan: 12 g/fruit x 360 fruits x 1.5 = 6.48 kg x 5 groups / 0.5	kgs	64.8	Tree seeds	kgs	194.4	5	972
- Candle nuts or other NTFPs tree							
- Ex) Candle nuts: 12 g/seed x 360 seeds x 1.5 = 6.48 kg x 5 groups / 0.5	kgs	64.8	Tree seeds	kgs	194.4	6	1,166
- Mahogany: 0.53 g/seed x 600 seeds x 1.5 = 0.48 kg x 5 groups / 0.5	kgs	4.8	Tree seeds	kgs	14.4	10	144
- Grevillea: 0.5 g/pod x 600 pods x 1.5 = 0.45 kg x 5 groups / 0.5	kgs	20	Tree seeds	kgs	60	10	600
- Teak: 0.72 g/seed x 600 seeds x 1.5 = 0.65 kg x 5 groups / 0.5	kgs	6.5	Tree seeds	kgs	19.5	5	98
- Petai (600 pcs x 1.2 = 720 pcs), 3 g/seed x 720 seeds = 2.16 kgs x 5 groups / 0.5	kgs	21.6	Tree seeds	pcs	64.8	5	324
- Calliandra: 0.07 g/seed x 720 seeds x 1.5 = 0.08 kg x 5 groups / 0.5	kgs	0.8	Tree seeds	pcs	2.4	5	12
- Lamtoro (L 19): 0.05 g/seed x 720 seeds x 1.5 = 0.054 kgs x 5 groups / 0.5	kgs	0.54	Tree seeds	pcs	1.62	10	16
8.4 Farm tools and materials (No. of seedlings per nursery, plus 20% for reservation)							
- Hoe (1 pcs/1 group member)	pcs	100	Hoe	pcs	300	6	1,800
- Iron stick (1 pcs/1 group member)	pcs	100	Iron stick	pcs	300	7	2,100
- Machete (1 pcs/1 group member)	pcs	100	Machete	pcs	300	7	2,100
- Shovel (2 pcs/nursery)	pcs	5	Shovel	pcs	15	7	105
- Watering can (1 can/nursery)	pcs	5	Watering can	pcs	15	10	150
- Poly tube (3,600 pcs/Nursery ÷ 200 pcs/kg = 18 kgs/Nursery) in 1st year	kgs	90	Poly tube	kgs	270	5	1,350
- Poly tube (3,600 pcs/Nursery ÷ 200 pcs/kg = 18 kgs/Nursery) in 2nd year	kgs	90	Poly tube	kgs	270	5	1,350
Total							56,720

Note:

The exposure visit will be conducted as a part of TPP/FP-SP.

1) "5. Training & demonstration": Expert Team mainly work for second batch in the same nursery. They also support the activity of the first batch.

2) "6. Watering & weeding of the seedlings": To minimize the cost, only the meal of the members is included. It is reduced to $ 1/MD.

3) "7.1 Recording of number of pots after sowing": This will be done at the time of training a& demonstration in the nursery. It does not need the activity cost.

4) "7.1 The annual evaluation & planning workshop" is done with the TPP/FR-SP.

5) These materials will be provided by the community as free.

6) "8.3 Nursery seedlings": Species can be changed according to the community's needs and availability of seedlings. Tartget of seedlings distributed to each group member is 150 seedlings/member.

Target Quantiry of seedling production per one batch: 5,400 seedlings (20 % of the target figure is for reservation.)

- Longan (Kelengkeng, 300 pcs x 1.2 = 360 pcs)	360
- Clove (Cengkeh, 300 pcs x 1.2 = 360 pcs)	360
- Rambutan (300 pcs x 1.2 = 360 pcs)	360
- Candle nuts or other NTFPs tree (300 pcs x 1.2 = 360 pcs)	360
- Mahogany (500 pcs x 1.2 = 600 pcs)	600
- Grevillea (500 pcs x 1.2 = 600 pcs)	600
- Teak (500 pcs x 1.2 = 600 pcs)	600
- Petai (600 pcs x 1.2 = 720 pcs)	720
- Calliandra (600 pcs x 1.2 = 720 pcs)	720
- Lamtoro (L 19) (600 pcs x 1.2 = 720 pcs)	720
	5400

b. Cost of Hired Staff and Facilities

Activities	Qualification/Specification	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
1. Hired Staff					
1.1 Facilitator/Expert	Univ graduate, Major in Forestry/Rural developmer	MM	5	700	3,500
1.2 Field Assistant	Secondary school	MM	30	370	11,100
Sub-total (1)					14,600
2. Facilities					
2.1 Motor bike	125 cc	Unit	1	2,200	2,200
2.2 Rental vehicle	4WD	Month	6	2,250	13,500
Sub-total (2)					15,700

Annex F (4): Cost Summary of Forest Management Planning Sub-program (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Meeting Costs				1,620
1.2 Other expenses				
Sub-total (1)				1,620
2. Remuneration/Staffing cost				
2.1 Facilitator/Expert	MM	1	700	700
2.2 Field assistant	MM	1	370	370
Sub-total (2)				1,070
3. Facilities				
Sub-total (3)				2,625
Total (1+2+3)				5,315
4. Management cost (10% of Total Cost)				532
5. Contingency (5% of Total Cost)				266
Grand Total				6,112
Grand Total (round)				**6,000**

Annex F (4): Cost Breakdown of Forest Management Planning Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

Activities	Materials	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
1. Formation of expert team					
1.1 Assignment of forest guard (1) and procurement of 1 Facilitator/Expert					
1.2 Confirmation of the activities and TOR of the Expert Team					
2. Initial meetings with villagers (half day per 1 Suco)					
- Half day meeting with 50 members/Suco, Expert Team					
3. Formation of "group of representatives" & Guidance for the group (50 participants & Expert Team, 1 day/Suco)					
-Ine day meeting on the formation of a working team and discussion on roles and responsibilities of the gro	Meeting cost (Lunch)	Pax	150	2	300
4. Preparation of Draft Community Forest Management Agreement (DCFMA) in 1st year					
4.1 One day meeting on review of Forest Management Decree (4 members/aldeia x 5 aldeia = 20 members/suc	Meeting cost (Lunch)	Pax	60	2	120
4.2 Five-day meeting on preparatoin of Draft CFMA (*1) (4 members/aldeia x 5 aldeia x5 days = 100 membe	Meeting cost (Lunch)	Pax	300	2	600
5. Signing of the Draft Community Forest Management Agreement (DCFMA) (1 day/Suco)					
5.1 One day review of the Draft CFMA by the community members (100 members/suco/day)	Meeting cost (Lunch)	Pax	300	2	600
5.2 Selection of representatives who sign the DCFMA					
5.3 Sign on the DCFMA by the representatives witnessed by the relevant national/local government staffs					

Note:

*1: Contents of DCFMA are as follows:

- Map (1:25,000) to show the forest areas/resources
- Forest management objectives
- List of forest owners who hold traditional right to own the target land and forest
- Individuals, families & groups within the community who are included in the DCFMA
- Specification of use and rights of forest management granted to the community
- Rules and procedures concerning access and uses of the target forest
- Inter-community agreements on the management of target forest
- Roles and functions of relevant central/local governments & their staffs
- Other necessary terms and conditions

b. Cost of Hired Staff and Facilities

Activities	Qualification/Specification	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
1. Hired Staff					
1.1 Facilitator/Expert	Univ graduate, Major in Forestry	MM	1	700	700
1.2 Field assistant	Secondary school	MM	1	370	370
Sub-total (2)					1,070
2. Facilities					
2.1 Motor bike	125 cc	No.	1	2,200	2,200
2.2 Cost to rent a vehicle	4WD	Day	5	85	425
Sub-total (3)					2,625

Annex F (5): Cost Summary of Community Based Seed Extension Sub-program (covering 3 sucos)

Activities	For One team (or 3 suco)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training	Times	-	-	18,638
1.2 Meetings and Discussions	Times	-	-	2,475
1.3 Materials and Other Direct Expenses	-	-	-	23,250
Sub-total (1)				44,363
2. Remuneration/Staffing cost				
2.1 Expert/Facilitator	MM	4	700	2,800
2.2 Field Assistant	MM	29	370	10,545
Sub-total (2)				13,345
3. Facilities	-	-	-	
Sub-total (3)				11,050
Total (1+2+3)				68,758
4. Management cost (10% of Total Cost)				6,876
5. Contingency (5% of Total Cost)				3,438
Grand Total				79,071
Grand Total (round)				**79,000**

Annex F (5): Cost Breakdown of Community Based Seed Extension Sub-program (covering 3 Sucos)

a. Direct Material and Labor Cost

Activities	Materials	For One team (or 3 suco)				
		Unit	Q'ty	Time	Unit cost	Amount
1. Direct Cost						
1.1 Procurement of staff (Formation of Field Teams)						
1.2 Organization of farmers group						
1.2.2 Discussions of roles and responsibilities (30pax/aldeia)	Meeting cost (Snacks & Meals)	Pax	300	1	2	600
1.3 Exposure Visit	Training Cost	Pax	75	1	2.5	188
	Material Cost (Transportation)	Pax	150	1	3	450
1.4 FFS						
1.4.1 How to make compost						
(1) How to prepare compost	Training Cost (Snacks & Meals)	Pax	600	2	2	2,400
	Material cost (e.g. Wheelbarrow and shovel : 6 units/ aldeia)	Pax	90	1	40	3,600
(2) Field Application	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
1.4.2 Other common training						
(1) Soil conservation	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material Cost (Seeds of Green manure/Legume Crops) (40kg/ha * 0.06ha)	Pax	720	2	2.5	3,600
(2) How to prepare a demo plots	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material Cost (e.g. hoe)	Pax	300	1	10	3,000
1.4.3 Planting maize						
(1) How to plant maize	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material cost (Improved Seeds @ 20kg/ha*0.05ha*450 plot)	(MAF/SoL)				0
	Material cost (Outsourced Local seeds @ 20kg/ha*0.15ha*450 plot)	kg	900	2	1.5	2,700
(2) How to do farm maintenance	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
1.4.4 Planting Sweet Potatoes and Peanuts						
(1) How to plant sweet potatoes	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material cost (Improved plants)	(MAF/SoL)				
	Material cost (Outsourced seeds @ 5,151cutting/ha *0.15ha*1/300 cutting/stick*450hh)	bundle	600	2	5	6,000
(1)* how to plant peanuts	Material cost (Improved plants @ 50kg*0.02ha*450hh)	(MAF/SoL)				
	Material cost (Outsourced Local seeds @ 50kg*0.05ha*450hh)	kg	750	2	2.5	3,750
(2) How to do farm maintenance and keep records	Training Cost (Snacks & Meals)	done togather with the one for maize				
1.4.6 Harvesting Maize and Evaluation						
(1) How to harvest maize, measure yields (cob), and sun	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(2) Measure the weight of threshed grains and their taste	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(3) Grain Storage	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material cost (Seed Preservation Sheet @ 1unit for a HH)	Unit	300	1	2	600
1.4.7 Harvesting Peanuts and Evaluation						
(1) How to harvest peanuts	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(2) Measure the weight of shelled nuts and how to keep seeds and do with peanuts	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
1.4.8 Harvesting Sweet Potatoes and Evaluation						
(1) How to harvest peanuts and compare yields	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(2) Measure the weight of shelled nuts and their tastes, how to keep seeds and do with peanuts	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
1.5 Annual Evaluation and Planning Workshop (2 days)	Material Cost (photocopy) (10 page * 75 HHs* 2 times)	Pax	750	2	0.05	75
	Meeting Cost (Snacks, Meals,)(75hh *3 suco*2 days)	Pax	450	2	2	1,800
Sub-total (1)						44,363

b. Costs of Hired Staff and Facilities

Activities	Qualification/Specification	For One team (or 3 sucos)				
		Unit	Q'ty		Unit cost	Amount
2. Hired Staff						
2.1 Expert/Facilitator	Univ graduate, Major in Agronomy	MM	4		700	2,800
2.2 Field Assistant	Diploma of Agri school	MM	29		370	10,730
Sub-total (2)						13,530
3. Facilitators						
3.1 Motor bike	125 cc	Unit	4		2,200	8,800
3.2 4WD Vehicle	Mitsubishi Pajero	Unit	1		2,250	2,250
Sub-total (3)						11,050

Annex E (6): Cost Summary of Home Garden Sub-program (covering 3 suco)

Activities	For One team (or 3 suco)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training	Times	-	-	17,475
1.2 Meetings and Discussions	Times	-	-	4,478
1.2 Materials	-	-	-	18,900
Sub-total (1)				40,853
2. Remuneration/Staffing cost				
2.1 Expert/Facilitator	MM	5	700	3,500
2.2 Field Assistant	MM	26	370	9,435
Sub-total (2)				12,935
3. Facilities	-	-	-	
Sub-total (3)				13,300
Total (1+2+3)				67,088
4. Management cost (10% of Total Cost)				6,709
5. Contingency (5% of Total Cost)				3,354
Grand Total				77,151
Grand Total (round)				**77,000**

Annex F (6): Cost Breakdown of Home Garden Sub-program (covering 3 Suco)

a. Direct Material and Labor Cost

Activities	Materials	For One team (or 3 suco)				
		Unit	Q'ty	Time	Unit cost	Amount
1. Direct Cost						
1.1 Procurement of staff (Formation of Field Teams)						
1.1.1 Procurement of Specialists						
1.1.2 Procurement of extension workers						
1.1.3 Guidance/Training of the Staff						
1.2 Organization of farmers group						
1.3.1 Discussions of roles and responsibilities (20 pax/aldeia x 5 aldeia x 3 suc	Meeting cost (Snacks & Meals)	Pax	300	1	2	600
1.3 Exposure Visit	Training Cost	Pax	90	1	2.5	225
	Material Cost (Transportation)	Pax	150	1	3	450
1.4 Baseline Survey & Selection of suitable vegetable crops	Meeting Cost (Snacks & Meal) (1 day discussion)	Pax	300	1	2	600
	Material Cost (photocopy) (4 page * 300 HHs)	Page	1,200	4	0.05	240
1.5 FFS (1 batch = 20 hhs/aldeia: 2 batches in total)						
1st Year						
1.5.1 Training of Compost making						
(1) How to prepare compost (explanation & exercise at demo plot)	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material cost (e.g. Wheelbarrow & Shovel @ 6 pack /aldeia)	Pax	90	1	40	3,600
(3) How to develop compost (e.g. Turning heap etc.)	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(5) Field Application	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
1.5.2 Vegetable Production						
(1) How to develop land	Training Cost (Snacks & Meals)	Pax	300	1	2	600
	Material Cost (Farm tool)	Pax	300	1	10	3,000
(2) How to prepare nursery/seedling	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material Cost (Veg.Seeds)(20 packs * 15 group * 1 time)	Packs	20	15	7	2,100
	Material Cost (Legume crop) (3kinds * 10kg/grup	kg	30	15	5	2,250
(4) How to plant in farm land	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(6) How to maintain field (pest observation/field hygiene techniques and	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(7) How to harvest and keep seeds	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material Cost (Plastic Sheet)	Pax	300	1	2	600
1.5.3 Training of Food Processing						
(1) How to prepare solar drier	Training Cost (Snacks & Meals)	Pax	300	1	2	600
	Material Cost (Material for Solar Drier) (2 for every aldeia)	Unit	30	1	175	5,250
(2) How to make dried foods and do the maintenance of solar driers	Training Cost (Snacks & Meals)	Pax	300	1	2	600
2nd Year						
1.5.4 Training of Compost making						
(1) How to prepare compost (explanation & exercise at demo plot)	Training Cost (Snacks & Meals)	Pax	300	1	2	600
(3) How to develop compost (e.g. Turning heap etc.)	Training Cost (Snacks & Meals)	Pax	300	1	2	600
(5) Field Application	Training Cost (Snacks & Meals)	Pax	300	1	2	600
1.5.5 Vegetable Production						
(1) How to develop land	Training Cost (Snacks & Meals)	Pax	300	1	2	600
(2) How to prepare nursery/seedling	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material Cost (Veg.Seeds)(20 packs * 15 group * 1 time)	Packs	20	15	7	2,100
(4) How to plant in farm land	Training Cost (Snacks & Meals)	Pax	300	1	2	600
(6) How to maintain field (pest observation/field hygiene techniques and	Training Cost (Snacks & Meals)	Pax	300	1	2	600
(7) How to harvest and keep seeds	Training Cost (Snacks & Meals)	Pax	300	1	2	600
1.5.3 Training of Food Processing						
(1) How to prepare solar drier	Training Cost (Snacks & Meals)	Pax	300	1	2	600
(2) How to make dried foods and do the maintenance of solar driers	Training Cost (Snacks & Meals)	Pax	300	1	2	600
1.6 Semiannual Evaluation and Planning Workshop (2 days)	Material cost (photocopy) (10 page * 15 HHs/Aldeia * 5	Page	2,250	3	0.05	338
	Meeting Cost (Snacks & Meals)	Pax	450	3	2	2,700
Sub-total (1)						40,853

b. Costs of Hired Staff and Facilities

Activities	Qualification/Specification	For One team (or 3 suco)			
		Unit	Q'ty	Unit cos	Amount
2. Hired Staff					
2.1 Expert/Facilitator	Univ graduate, Major in Agronomy	MM	5	700	3,500
2.2 Field Assistant	Diploma of Agri school	MM	26	370	9,435
Sub-total (2)					12,935
3. Facilitators					
3.1 Motor bike	125 cc	Unit	4	2,200	8,800
3.2 4WD Vehicle	Mitsubishi Pajero	Unit	2	2,250	4,500
Sub-total (3)					13,300

Annex F (7): Cost Summary of Grazing Control with Protein Bank (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training	Times	-	-	15,400
1.2 Meetings and Discussions	Times	-	-	2,025
1.2 Materials	-	-	-	30,900
Sub-total (1)				48,325
2. Remuneration/Staffing cost				
2.1 Specialists	MM	7	700	4,550
2.2 Field workers	MM	42	370	15,540
Sub-total (2)				20,090
3. Facilitities	-	-	-	
Sub-total (3)				29,050
Total (1+2+3)				97,465
4. Management cost (10% of Total Cost)				9,747
5. Contingency (5% of Total Cost)				4,873
Grand Total				112,085
Grand Total (round)				**112,000**

Annex F (7): Cost Breakdown of Grazing Control with Protein Bank (coveing 3 sucos)

a. Direct Material and Labor Cost

Activities	Materials	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
1. Direct Cost					
1.1 Procurement of staff (Formation of Field Teams)					
1.1.1 Procurement of Specialists					
1.1.2 Procurement of extension workers					
1.1.3 Guidance/Training of the Staff					
1.2 Organization of farmers grouop					
1.3.1 Selection of delegated members (20 pax/aldeia x 5 aldeia x 3 sucos)	Meeting cost (Snacks & Meals)	Pax	300	2	600
1.3.2 Discussions of member roles and planning (10 pax/aldeia x 5 aldeia x 3 sucos)	Meeting cost (Snacks & Meals)	Pax	150	2	300
1.3 Exposure Visit	Training Cost	Pax	60	2.5	150
	Material Cost (Transportation)	Pax	150	3	450
1.4 FFS/Implementation					
1.4.1 1st Year					
(1) Fencing with planting/ resetting (1 km /suco)	Training Cost (Snacks & Meals)	Pax	500	2	1,000
	Material Cost (Seedling)	Seedling	1,000	0.75	750
	Material Cost (Dried Wood pole)	Pole	500	2.4	1,200
	Material Cost (Iron Stick, nails and etc)	Pole	500	10	5,000
	Material Cost (Iron Wire Role) (for 5 km)	Role	150	12	1,800
(2) Removing weeds mechanically	Training Cost (Snacks & Meals)	Pax	300	2	600
	Material Cost (Farming tools)	Set	300	10	3,000
(3) Bioligical control for Chromlaena odorata	Training Cost (Snacks and Meals)(3days)	Pax	900	2	1,800
	Material Cost (Sign Board)	Set	15	280	4,200
(4) Seedling production and Seed preparation	Training Cost (Snacks and Meals)	Pax	300	2	600
	Material Cost (Seeds:1kg*3 types)	kg	45	15	675
	Material Cost (Kinggrass)	Bundle	45	5	225
(5) Making temporary fences for protein banks	Material Cost (Bamboo)	Pole	750	1.5	1,125
(2 plot/ aldeia = 10 plot/suco = 30 plot in total)	Material Cost (Hanmmer, saw etc)	Pax	8	300	2,400
	Material Cost (Nail)	Pax	8	500	4,000
	Material Cost (Wood Pole)	Pole	1,500	1.5	2,250
	Training Cost (Snack and meals)	Pax	300	2	600
(6) Planting legume fodder trees/Inter-cropping fodder crops	Training Cost (Snacks & Meal)	Pax	300	2	600
(7) Field Maintenance	Training Cost (Snacks & Meal)	Pax	300	2	600
(8) Organic farming (Compost making)	Training Cost (Farming tools)	Set	90	40	3,600
	Training Cost (Snacks and Meals)	Pax	600	2	1,200
1.4.2 2nd Year					
(2) Removing weeds mechanically	Training Cost (Snacks & Meals)	Pax	300	2	600
(4) Seedling production and Seed preparation	Training Cost (Snacks and Meals)	Pax	300	2	600
	Material Cost (Seeds:1kg*3 types)	kg	45	15	675
	Material Cost (Kinggrass)	Bundle	45	5	225
(5) Making temporary fences for protein banks	Material Cost (Bamboo)	Pole	750	1.5	1,125
	Material Cost (Wood Pole)	Pole	1,500	1.5	2,250
	Training Cost (Snack and meals)	Pax	300	2	600
(6) Planting legume fodder trees/Inter-cropping fodder crops	Training Cost (Snacks & Meal)	Pax	300	2	600
(7) Field Maintenance	Training Cost (Snacks & Meal)	Pax	300	2	600
(8) Organic farming (Compost making)	Training Cost (Snacks and Meals)	Pax	600	2	1,200
1.5 Annual Evaluation and Planning Workshop (2 days)					
1.5.1 1st year	Material cost (photocopy)	Pax	2,250	0.05	113
	Meeting cost (Snacks, Meals)	Pax	225	2	450
1.5.2 2nd year	Material cost (photocopy)	Pax	2,250	0.05	113
	Meeting cost (Snacks, Meals)	Pax	225	2	450
Sub-total (1)					48,325

b. Costs of Hired Staff and Facilities

Activities	Qualification/Specifixation	For One team (or 4 sucos)			
		Unit	Q'ty	Unit cost	Amount
2. Hired Staff					
2.1 Silvo-pastoral specialist	Univ graduate, Major in Agroforestry	MM	7	700	4,550
2.2 Facilitators/Extension Workers	Diploma of Agri school	MM	42	370	15,540
Sub-total (2)					20,090
3. Facilitators					
3.1 Motor bike	125 cc	Unit	4	2,200	8,800
3.2 4WD Vehicle		Month	9	2,250	20,250
Sub-total (3)					29,050

Annex F (8): Cost Summary of Animal Feed Preservation Sub-program (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training	Times	-	-	8,025
1.2 Meetings and Discussions	Times	-	-	2,363
1.2 Materials	-	-	-	11,835
Sub-total (1)				22,223
2. Remuneration/Staffing cost				
2.1 Specialists	MM	4	700	2,450
2.2 Field workers	MM	18	370	6,660
Sub-total (2)				9,110
3. Facilities	-	-	-	
Sub-total (3)				11,350
Total (1+2+3)				42,683
4. Management cost (10% of Total Cost)				4,268
5. Contingency (5% of Total Cost)				2,134
Grand Total				49,085
Grand Total (round)				**49,000**

Annex F (8): Cost Breakdown of Animal Feed Preservation Sub-program (covering 3 Sucos)

a. Direct Material and Labor Cost

Activities	Materials	For One team (or 3 sucos)				
		Unit	Q'ty	Time	Unit cost	Amount
1. Direct Cost						
1.1 Procurement of staff (Formation of Field Teams)						
1.1.1 Procurement of Specialists						
1.1.2 Procurement of extension workers						
1.1.3 Guidance/Training of the Staff						
1.2 Organization of farmers grouop						
1.2.2 Discussions of roles and responsibilities (20 pax/aldeia x 5 aldeia x 3 suco	Meeting cost (Snacks & Meals)	Pax	300	2	3	1,800
1.3 Exposure Visit	Training Cost	Pax	150	1	2.5	375
	Material Cost (Transportation)	Pax	150	1	3	450
1.4 FFS						
1.4.1 Module 1: Hay making						
(1) One-day training on how to process hay (20 pax/aldeia x 5 aldeia x 1 day)	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(2) One-day training on how to feed to animals (20 pax/aldeia x 5 aldeia x 1 day	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
1.4.2 Module 2: Silage making						
(1) One-day training on how to prepare silage site (20 pax/aldeia x 5 aldeia x 1 d	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
	Material cost (A plastic sheet @ 3 unit for alideia)	Unit	45	1	5	225
	Material cost (Urea basic fertilizer)	Kg	2,700	2	1	5,400
	Material cost (Drum: 2 drums for each haroson(3/al)	Unit	90	1	65	5,850
	Material Cost (e.g. shovel)	pax	36	1	10	360
(2) One-day training on how to prepare silage (20 pax/aldeia x 5 aldeia x 1 day)	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
(3) One-day training on how to feed to animals (20 pax/aldeia x 5 aldeia x 1 day	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
1.4.3 Module 3: Compost making making (2m * 2m * 1m / one aldeia)	Training Cost (Snacks & Meals)	Pax	300	2	2	1,200
1.5 Annual Evaluation and Planning Workshop	Material cost (photocopy) (10page * 75/suco)	Pax	2,250	2	0.05	113
	Meeting Cost (75 pax/suco)	Pax	225	2	2	450
Sub-total (1)						22,223

b. Costs of Hired Staff and Facilities

Activities	Qualification/Specifixation	For One team (or 3 sucos)				
		Unit	Q'ty		Unit cost	Amount
2. Hired Staff						
2.1 Expert/Facilitator	Univ graduate, Major in Agronomy	MM	4		700	2,450
2.2 Field Assistant	Diploma of Agri school	MM	18		370	6,660
Sub-total (2)						
3. Facilitators						
3.1 Motor bike	125 cc	Unit	4		2,200	8,800
3.2 4WD Vehicle	Mitsubish Pajero	Unit	1		2,550	2,550
Sub-total (3)						11,350

Annex F (9): Cost Summary of Sustainable Upland Farming Promotion Sub-program (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training	Times	-	-	24,750
1.2 Meetings and Discussions	Times	-	-	9,000
1.2 Materials	-	-	-	12,000
Sub-total (1)				45,750
2. Remuneration/Staffing cost				
2.1 Specialists	MM	20	700	14,000
2.2 Field workers	MM	132	370	48,840
Sub-total (2)				62,840
3. Facilities	-	-	-	
Sub-total (3)				6,700
Total (1+2+3)				115,290
4. Management cost (10% of Total Cost)				11,529
5. Contingency (5% of Total Cost)				5,765
Grand Total				132,584
Grand Total (round)				**133,000**

Annex F (9): Cost Breakdown of Sustainable Upland Farming Promotion Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

Activities	Per Suco		Materials	One Team (For 3 scuso)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1. Direct Cost							
1.1 Procurement of staff (Formation of Field Teams)							
1.1.1 Procurement of Specialists							
1.1.2 Procurement of extension workers							
1.1.3 Guidance/Training of the Staff							
1.2 Guidance and Orientation to villages							
1.2.1 One-day initial meetings with villagers (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Meeting cost (Snacks & Meals)	Pax	300	2	600
1.2.2 One-day introductry meeting (2o pax/aldeia x 5 aldeias x 1 day)	MD	100	Meeting cost (Snacks & Meals)	Pax	300	2	600
1.3. Organization of farmers grouop							
1.3.1 Two-day meeting on selection of delegated members (20 pax/aldeia x 5 aldeias x 2 d	MD	200	Meeting cost (Snacks & Meals)	Pax	600	2	1,200
1.3.2 Two-day discussions on roles and responsibilities (10 pax/aldeia x 5 aldeias x 2 days	MD	100	Meeting cost (Snacks & Meals)	Pax	300	2	600
1.4 Exposure visit (One-day trip with 10 persons each from aldeia)	MD	50	Meeting cost (Snacks & Meals)	Pax	150	2	300
	UD	1	Transportation cost	UD	3	150	450
5. Situation Analysis							
5.1 One-day session for situation alasysis (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Meeting cost (Snacks & Meals)	Pax	300	2	600
5.2 Three-day session on identification of potential areas (20 pax/aldeia x 5 aldeias x 3 day	MD	300	Meeting cost (Snacks & Meals)	Pax	900	2	1,800
6. Three-day meeting on action planning (20 pax/aldeia x 5 aldeias x 3 days)	MD	300	Meeting cost (Snacks & Meals)	Pax	900	2	1,800
7. Field Farmers School							
7.1 Hands-on Training Courses of 1st batch							
(1) Two-day training on compost making (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(2) One-day session on effect of soil conservation measures (20 pax/aldeia x 5 aldeias	MD	100	Training Cost (Snacks & Meals)	Pax	300	2	600
(3) One-day training on designing of plot (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Training Cost (Snacks & Meals)	Pack	300	2	600
(4) Two-day training on use of A-frame (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(5) One-day training on contour mulching (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Training Cost (Snacks & Meals)	Pax	300	2	600
			Material cost (farm tools)	Pax	300	10	3,000
(6) Four-day training on contour composting and Terrace making (20 x 5 x 4)	MD	400	Training Cost (Snacks & Meals)	Pax	1,200	2	2,400
(7) Two-day training on fodder tree planting (20 pax/aldeia x 5 aldeia x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
			Material cost (seedlings) (20 pcs/pax)	Pax	6,000	0.5	3,000
(8) Two-day training on land preparation (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(9) Two-day training on line planting (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(10) Three times of one-day training on arm management (20 pax/aldeia x 5 aldeias x 3	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
7.1 Hands-on Training Courses of 2nd batch							
(1) Two-day training on compost making (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(2) One-day session on effect of soil conservation measures (20 pax/aldeia x 5 aldeias	MD	100	Training Cost (Snacks & Meals)	Pax	300	2	600
(3) One-day training on designing of plot (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Training Cost (Snacks & Meals)	Pack	300	2	600
(4) Two-day training on use of A-frame (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(5) One-day training on contour mulching (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Training Cost (Snacks & Meals)	Pax	300	2	600
			Material cost (farm tools)	Pax	300	10	3,000
(6) Four-day training on contour composting and Terrace making (20 x 5 x 4)	MD	400	Training Cost (Snacks & Meals)	Pax	1,200	2	2,400
(7) Two-day training on fodder tree planting (20 pax/aldeia x 5 aldeia x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
			Material cost (seedlings) (20 pcs/pax)	Pax	6,000	0.5	3,000
(8) Two-day training on land preparation (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(9) Two-day training on line planting (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(10) Three times of one-day training on arm management (20 pax/aldeia x 5 aldeias x 3	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
8. Two times of three-day evaluation and annual planning meeting (50 x 3 x 2)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
Sub-total (1)							45,750

b. Costs of Hired Staff and Facilities

Activities	Per Suco		Qualification/Specifixation	One Team (For 3 scuso)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
2. Remuneration/Staffing cost							
2.1 Facilitator/Coffee Expert			Univ graduate, Major in Agroforestry	MM	20	700	14,000
2.2 Field Assitance			Diploma of Agri school	MM	132	370	48,840
Sub-total (2)							62,840
3. Facilitators							
3.1 Motor bike			125 cc	Unit	1	2,200	2,200
3.2 4WD Vehicle			4WD	Month	2	2,250	4,500
Sub-total (3)							6,700

Annex F (10): Cost Summary of Coffee Plantation Rehabilitation Sub-program (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Discusssions				44,550
1.2 Meetings				8,400
1.3 Materials and other direct expenses				4,560
Sub-total (2)				57,510
2. Remuneration/Staffing cost				
2.1 Specialists	MM	19	700	12,950
2.2 Field workers	MM	132	370	48,840
Sub-total (2)				61,790
3. Facilities				
Sub-total (3)				4,450
Total (1+2+3)				74,640
4. Management cost (10% of Total Cost)				7,464
5. Contingency (10% of Total Cost)				7,464
Grand Total				89,568
Grand Total (round)				**90,000**

Annex F (10): Cost Breakdown of Coffee Plantation Rehabilitation Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

Activities	Per Suco		Materials	One Team (For 3 sucos)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1. Direct Cost							
1.1 Procurement of staff (Formation of Field Teams)							
1.1.1 Procurement of Specialists							
1.1.2 Procurement of extension workers							
1.1.3 Guidance/Training of the Staff							
1.2 Guidance and Orientation to villages							
1.2.1 One-day initial meetings with villagers (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Meeting cost (Snacks & Meals)	Pax	300	2	600
1.2.2 One-day introductry meeting (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Meeting cost (Snacks & Meals)	Pax	300	2	600
1.3. Organization of farmers grouop							
1.3.1 Two-day meeting on selection of delegated members (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Meeting cost (Snacks & Meals)	Pax	600	2	1,200
1.3.2 Two-day discussions on roles and responsibilities (10 pax/aldeia x 5 aldeias x 2 days)	MD	100	Meeting cost (Snacks & Meals)	Pax	300	2	600
1.4 Exposure visit (One-day trip with 10 persons each from aldeia)	MD	50	Meeting cost (Snacks & Meals)	Pax	150	2	300
	UD	1	Transportation cost	UD	3	150	450
1.5 Situation Analysis							
1.5.1 Inventory of coffee farms			Material cost (Aerial photo maps)	Sheet	9	20	180
1.5.2 Three-day session on identification of unproductive coffee farms (20 x 5 x 3)	MD	300	Meeting cost (Snacks & Meals)	Pax	900	2	1,800
1.6 Three-day meeting on action planning (20 pax/aldeia x 5 aldeias x 3 days)	MD	300		Pax	900	2	1,800
1.7 Development of demonstration farms with core farmers and Field Farmers Schools (FFSs)							
1.7.1 Training of core farmers at Suco in 1st year							
(1) One-day general guidance on coffee production (20 pax/aldeia x 5 aldeias x 1 day)	MD	100	Training Cost (Snacks & Meals)	Pax	300	2	600
(4) Two-day training on compost making (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
			Material (wheel barrow, etc.) (2 pack/aldeia)	Pack	30	40	1,200
(2) Three-day training on identification of unproductive coffee (20 pax/aldeia x 5 aldeias x 3 days)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
(4) Three-day training on harvesting and post-harvesting (20 pax/aldeia x 5 aldeias x 3 days)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
(3) Training on production of coffee seedlings for 20 days (20 pax/aldeia x 5 aldeias x 20 days)	MD	2000	Training Cost (Snacks & Meals)	Pax	6,000	2	12,000
(5) Two times of two-day training on coffee farm management (20 pax/aldeia x 5 aldeias x 4 days)	MD	400	Training Cost (Snacks & Meals)	Pax	1,200	2	2,400
(6) Three-day training on rejuvenation of coffee trees (20 pax/aldeia x 5 aldeias x 3 days)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
			Material cost (hand saw)	Pax	300	5	1,500
(7) Three-day training on establishment of coffee plantation (20 pax/aldeia x 5 aldeias x 3 days)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
(8) Three-day training on maintenance (20 pax/aldeia x 5 aldeias x 3 days)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
			Material cost (ciseaux)	Pax	300	5	1,500
1.7.1 Training of core farmers at Suco in 2nd year							
(1) Two-day training on compost making (20 pax/aldeia x 5 aldeias x 2 days)	MD	200	Training Cost (Snacks & Meals)	Pax	600	2	1,200
(2) Training on production of coffee seedlings for 20 days (20 pax/aldeia x 5 aldeias x 20 days)	MD	2000	Training Cost (Snacks & Meals)	Pax	6,000	2	12,000
(3) Three-day training on rejuvenation of coffee trees (20 pax/aldeia x 5 aldeias x 3 days)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
(4) 10-day training on establishment of coffee plantation (20 pax/aldeia x 5 aldeias x 10 days)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
(5) Five-day training on maintenance (20 pax/aldeia x 5 aldeias x 5 days)	MD	300	Training Cost (Snacks & Meals)	Pax	900	2	1,800
7.2 Procurement of necessary materials							
(1) Polybag (50 pcs * 100 =5,000 pcs/yr)			Material cost (30 kg of polybag)	kg	90	2	180
7.3 Development of demo farms by core farmers at aldeias							
8. Evaluation and Annual planning (Three-day discussion)							
(1) 1st year (50 pax/suco x 3 days)	MD	150	Training Cost (Snacks & Meals)	Pax	450	2	900
(2) 2nd year (50 pax/suco x 3 days)	MD	150	Training Cost (Snacks & Meals)	Pax	450	2	900
Sub-total (1)							57,510

b. Costs of Hired Staff and Facilities

Activities	Per Suco		Qualification/Specifixation	One Team (For 3 sucos)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
2. Remuneration/Staffing cost							
2.1 Facilitator/Coffee Expert			Univ graduate, Major in Agroforestry	MM	19	700	12,950
2.2 Field Assitance			Diploma of Agri school	MM	132	370	48,840
Sub-total (2)							61,790
3. Facilitators							
3.1 Motor bike			125 cc	Unit	1	2,200	2,200
3.2 4WD Vehicle			4WD	Month	1	2,250	2,250
Sub-total (3)							4,450

Annex F (11): Cost Summary of Slope Protection Works (covering 1 catchment:8 gabion walls)

Activities	For One team (or 1 catchment)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Meeting Cost	-	-	-	0
1.2 Costs for survey and planning	-	-	-	2,880
1.3 Cost for construction and maintenance	-	-	-	87,322
Sub-total (1)				90,202
2. Remuneration/Staffing cost				
2.1 Specialists	MM	13	700	9,100
Sub-total (2)				9,100
3. Facilities	-	-	-	
Sub-total (3)				15,218
Total (1+2+3)				114,520
4. Management cost (10% of Total Cost)				11,452
5. Contingency (5% of Total Cost)				5,726
Grand Total				131,698
Grand Total (round)				**132,000**

Annex F (11): Cost Breakdown of Slope Protection Works (covering 1 catchment)

a. Direct Material and Labor Cost

1. Direct Expenses		Per Team		Materials	For One team (or 1 catchment)			
		Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1.1 Formation of working team							(US$)	(US$)
1.1.1	Assignment of gov staff	days	7					
1.1.2	Procurement of NGOs or experts							
1.1.2.1	Preparation of TOR for the works to be contracted out	days	5					
1.1.2.2	Recruitment of experts or NGOs	days	10					
1.1.2.3	Evaluation and selection of experts or NGOs	days	5					
1.1.3	Guidance to the project staf	days	1					
1.2 Assessment of soil movement in the target catchment								
1.2.1	Identification of possible construction sites through existing information	days	10					
1.2.2	Assessment of soil movement and determination of the construction site	days	3					
1.3 Topographic survey								
1.3.1	Implementation of topographic survey	days	24	Survey cost (Topographic survey)	km	1.6	1,500.0	2,400
1.3.2	Elaboration of longitudinal section and plan for target site	days	15	Printing cost (A2 size)	PCs	16	15.0	240
1.4 Basic Design								
1.4.1	Drawing basic design of the structure	days	15	Printing cost (A2 size)	PCs	16	15.0	240
1.4.2	Cost estimation and preparation of implementation plan	days	15					
1.5 Implementation, monitoring and evaluation of construction works								
1.5.1	Recruitment of local labors	days	5					
1.5.2	Material Procurement			Materials (Tools)	L.S.	10	50.0	500
		days	30	Material cost (Stone)	m^3	1,048	21.0	22,008
				Material cost (Gabion Wire)	Roll	16	80.0	1,280
				Material cost (Gabion Box 1*1*2	Set	480	110.0	52,800
				Material cost (Wood Pile)	PCs	256	0.2	51
				Labour cost (Unskilled labour)	MD	120	3.0	360
				Labour cost (Foreman)	MD	30	7.0	210
1.5.3	Monitoring of progress of work	days	90					
1.5.4	Implementation of constructio							
1.5.4.1	Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 1st batch.			Labour cost (Unskilled labour)	MD	12	3.0	36
	(1) Excavation and compaction at foundation	days	6	Labour cost (Foreman)	MD	6	7.0	42
	(2) Gabion Installation	days	27	Labour cost (Unskilled labour)	MM	3.6	66.0	238
				Labour cost (Skilled labour)	MM	1.8	110.0	198
				Labour cost (Foreman)	MM	0.9	154.0	139
	(3) Back fill	days	6	Labour cost (Unskilled labour)	MD	18	3.0	54
				Labour cost (Foreman)	MD	6	7.0	42
1.5.4.2	Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 2nd batch. 3 Gabions			Labour cost (Unskilled labour)	MD	12	3.0	36
	(1) Excavation and compaction at foundation	days	6	Labour cost (Foreman)	MD	6	7.0	42
	(2) Gabion Installation	days	27	Labour cost (Unskilled labour)	MM	3.6	66.0	238
				Labour cost (Skilled labour)	MM	1.8	110.0	198
				Labour cost (Foreman)	MM	0.9	154.0	139
	(3) Back fill	days	6	Labour cost (Unskilled labour)	MD	18	3.0	54
				Labour cost (Foreman)	MD	6	7.0	42
1.5.4.3	Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 3rd batch.			Labour cost (Unskilled labour)	MD	8	3.0	24
	(1) Excavation and compaction at foundation	days	4	Labour cost (Foreman)	MD	4	7.0	28
	(2) Gabion Installation	days	18	Labour cost (Unskilled labour)	MM	2.4	66.0	158
				Labour cost (Skilled labour)	MM	1.2	110.0	132
				Labour cost (Foreman)	MM	0.6	154.0	92
	(3) Back fill	days	4	Labour cost (Unskilled labour)	MD	12	3.0	36
				Labour cost (Foreman)	MD	4	7.0	28
1.6 Menteinance of facilitires		years	1	Mainteinance cost (10% of construction cost)				8,117
Sub-total (1)								90,202

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Qualification	For One team (or 1 catchment)			
		Unit	Q'ty	Unit cost	Amount
2.1 Soil Conservation Specialist	Experienced. University Graduate. Major in Soil	MM	13.0	700	9,100
Sub-total (2)					9,100

c. Cost of Facilities

3. Facilities	Specification	For One team (or 1 catchment)			
		Unit	Q'ty	Unit cost	Amount
3.1 Motor bike	Mega pro 160 cc	UM	1	2,200	2,200
3.2 Car rental	Toyota Hilux 4WD	UD	130	85	11,050
3.3 Dump truck (i/c operator)		UD	10	120	1,200
3.4 Stemper/Mini Roller (i/c operator)		UD	16	48	768
Sub-total (3)					15,218

Annex F (12): Cost Summary of Sediment Flow Control (covering 1 catchment:10 checkdams)

Activities	For One team (or 1 catchment)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Meeting Cost	-	-	-	0
1.2 Costs for survey and planning	-	-	-	5,100
1.3 Cost for construction and maintenance	-	-	-	49,748
Sub-total (1)				54,848
2. Remuneration/Staffing cost				
2.1 Specialists	MM	13	700	9,100
Sub-total (2)				9,100
3. Facilities	-	-	-	
Sub-total (3)				22,675
Total (1+2+3)				86,623
4. Management cost (10% of Total Cost)				8,662
5. Contingency (5% of Total Cost)				4,331
Grand Total				99,617
Grand Total (round)				**100,000**

Annex F (12): Cost Breakdown of Sediment Flow Control (covering 1 catchment:10 checkdams)

a. Direct Material and Labor Cost

1. Direct Expenses	Per Team		Materials	For One team (or 1 catchment)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1.1 Formation of working team						(US$)	(US$)
1.1.1 Assignment of gov staff	days	7					
1.1.2 Procurement of NGOs or experts							
1.1.2.1 Preparation of TOR for the works to be contracted out	days	5					
1.1.2.2 Recruitment of experts or NGOs	days	10					
1.1.2.3 Evaluation and selection of experts or NGOs	days	5					
1.1.3 Guidance to the project staff	days	1					
1.2 Assessment of soil movement in the target catchment							
1.2.1 Identification of possible construction sites through existing information	days	3					
1.2.2 Assessment of soil movement and determination of the construction site	days	10					
1.3 Topographic survey							
1.3.1 Implementation of topographic survey	days	30	Survey cost (Topographic survey)	km	3.0	1,500	4,500
1.3.2 Elaboration of longitudinal section and plan for target site	days	20	Printing cost (A2 size)	sheets	20	15.0	300
1.4 Basic Design							
1.4.1 Drawing basic design of the structure	days	20	Printing cost (A2 size)	sheets	20	15.0	300
1.4.2 Cost estimation and preparation of implementation plan	days	20					
1.5 Implementation, monitoring and evaluation of construction works							
1.5.1 Recruitment of local labors	days	5					
1.5.2 Material Procurement	days	20	Material cost (Stone)	m^3	747	3.0	2,241
			Material cost (Gabion Wire)	Roll	20	80.0	1,600
			Material cost (Gabion Box 1*1*2M)	Set	340	110.0	37,400
			Labour cost (Unskilled labour)	MD	80	3.0	240
			Labour cost (Foreman)	MD	20	7.0	140
1.5.3 Monitoring of progress of work	days	90					
1.5.4 Implementation of construction							
1.5.4.1 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 1st batch. 4	days	8	Labour cost (Unskilled labour)	MD	16	3.0	48
(1) Excavation in foundation			Labour cost (Foreman)	MD	8	7.0	56
(2) Gabion Installatior	days	36	Labour cost (Unskilled labour)	MM	6.0	66.0	396
			Labour cost (Skilled labour)	MM	2.4	110.0	264
			Labour cost (Foreman)	MM	1.2	154.0	185
(3) Back fill	days	8	Labour cost (Unskilled labour)	MD	16	3.0	48
			Labour cost (Foreman)	MD	8	7.0	56
1.5.4.2 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 2nd batch. 3			Labour cost (Unskilled labour)	MD	12	3.0	36
(1) Excavation in foundation	days	6	Labour cost (Foreman)	MD	6	7.0	42
(2) Gabion Installatior	days	27	Labour cost (Unskilled labour)	MM	4.5	66.0	297
			Labour cost (Skilled labour)	MM	1.8	110.0	198
			Labour cost (Foreman)	MM	0.9	154.0	139
(3) Back fill	days	6	Labour cost (Unskilled labour)	MD	12	3.0	36
			Labour cost (Foreman)	MD	6	7.0	42
1.5.3.2 Implementation of Gavion retention wall (H=4.0m, L=15.0m) : 3rd batch. 3			Labour cost (Unskilled labour)	MD	12	3.0	36
(1) Excavation in foundation	days	6	Labour cost (Foreman)	MD	6	7.0	42
(2) Gabion Installatior	days	27	Labour cost (Unskilled labour)	MM	4.5	66.0	297
			Labour cost (Skilled labour)	MM	1.8	110.0	198
			Labour cost (Foreman)	MM	0.9	154.0	139
(3) Back fill	days	6	Labour cost (Unskilled labour)	MD	12	3.0	36
			Labour cost (Foreman)	MD	6	7.0	42
1.6 Supervision and maintenance of structure	years	1	Mainteinance cost (10% of construction cost)				5,495
Sub-total (1)							54,848

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Qualification	For One team (or 1 catchment)			
		Unit	Q'ty	Unit cost	Amount
2.1 Soil Conservation Specialist	Experienced. University Graduate. Major in Soil Conservation	MM	13	700	9,100
Sub-total (2)					9,100

c. Cost of Facilities

3. Facilities	Specification	For One team (or 1 catchment)			
		Unit	Q'ty	Unit cost	Amount
3.1 Motor bike	Mega pro 160 cc	Unit	1	2,200	2,200
3.2 Car rental	Toyota Hilux 4WD	UD	115	85	9,775
3.3 Excavator (i/c operator)		UD	20	370	7,400
3.4 Dump truck (i/c operator)		UD	20	120	2,400
3.5 Stemper/Mini Roller (i/c operator)		UD	20	45	900
Sub-total (3)					22,675

Annex F (13): Cost Summary of River Bank Protection Sub-program (covering 1 catchment: L=180 m)

Activities	For One team (or 1 catchment)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Meeting Cost	-	-	-	0
1.2 Costs for survey and planning	-	-	-	1,740
1.3 Cost for construction and maintenance	-	-	-	119,219
Sub-total (1)				120,959
2. Remuneration/Staffing cost				
2.1 Specialists	MM	12	700	8,400
Sub-total (2)				8,400
3. Facilities	-	-	-	
Sub-total (3)				20,400
Total (1+2+3)				149,759
4. Management cost (10% of Total Cost)				14,976
5. Contingency (5% of Total Cost)				7,488
Grand Total				172,223
Grand Total (round)				**172,000**

Annex F (13): Cost Breakdown of River Bank Protection Sub-program (covering 1 catchment : Gabion L=180 m)

a. Direct Material and Labor Cost

1. Direct Expenses	Per Team		Materials	For One team (or 1 catchment)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1.1 Formation of working team						(US$)	(US$)
1.1.1 Assignment of gov staff	days	7					
1.1.2 Procurement of NGOs or experts							
1.1.2.1 Preparation of TOR for the works to be contracted out	days	5					
1.1.2.2 Recruitment of experts or NGOs	days	10					
1.1.2.3 Evaluation and selection of experts or NGOs	days	5					
1.1.3 Guidance to the project staff	days	1					
1.2 Assessment of soil movement in the target catchment							
1.2.1 Identification of possible construction sites through existing information	days	3					
1.2.2 Assessment of soil movement and determination of the construction site	days	10					
1.3 Topographic survey							
1.3.1 Implementation of topographic survey	days	30	Survey cost (Topographic survey)	km	1.00	1,500.0	1,500
1.3.2 Elaboration of longitudinal section and plan for target site	days	20	Printing cost (A2 size)	PCs	8	15.0	120
1.4 Basic Design							
1.4.1 Drawing basic design of the structure	days	15	Printing cost (A2 size)	PCs	8	15.0	120
1.4.2 Cost estimation and preparation of implementation plan	days	15					
1.5 Implementation, monitoring and evaluation of construction works							
1.5.1 Recruitment of local labors	days	5					
1.5.2 Material Procurement	days	30	Materials (Tools)	L.S.	3	50.0	150
			Material cost (Stone)	m^3	1,572	21.0	33,012
			Material cost (Gabion Wire)	Roll	18	80.0	1,440
			Material cost (Gabion Box 1*1*2M)	Set	720	110.0	79,200
			Material cost (Wood Pile)	PCs	381	0.2	76
			Labour cost (Foreman)	MD	30	7.0	210
			Labour cost (Unskilled labour)	MD	120	3.0	360
1.5.3 Monitoring of progress of work	days	70					
1.5.4 Implementation of construction							
1.5.4.1 Implementation of construction (gabion retention work: H = 4.0m, L =			Labour cost (Unskilled labour)	MD	8	3.0	24
(1) Excavation in foundation	days	4	Labour cost (Foreman)	MD	4	7.0	28
(2) Gabion Installation	days	40	Labour cost (Unskilled labour)	MM	5.2	66.0	343
			Labour cost (Skilled labour)	MM	2.6	110.0	286
			Labour cost (Foreman)	MM	1.3	154.0	200
(3) Back fill	days	6	Labour cost (Unskilled labour)	MD	12	3.0	36
			Labour cost (Foreman)	MD	6	7.0	42
1.5.4.2 Implementation of construction (gabion retention work: H = 4.0m, L =							
(1) Excavation in foundation			Labour cost (Unskilled labour)	MD	8	3.0	24
	days	4	Labour cost (Foreman)	MD	4	7.0	28
(2) Gabion Installation	days	40	Labour cost (Unskilled labour)	MM	5.2	66.0	343
			Labour cost (Skilled labour)	MM	2.6	110.0	286
			Labour cost (Foreman)	MM	1.3	154.0	200
(3) Back fill	days	6	Labour cost (Unskilled labour)	MD	12	3.0	36
			Labour cost (Foreman)	MD	6	7.0	42
1.5.4.3 Implementation of construction (gabion retention work: H = 4.0m, L =							
(1) Excavation in foundation			Labour cost (Unskilled labour)	MD	8	3.0	24
	days	4	Labour cost (Foreman)	MD	4	7.0	28
(2) Gabion Installation	days	40	Labour cost (Unskilled labour)	MM	5.2	66.0	343
			Labour cost (Skilled labour)	MM	2.6	110.0	286
			Labour cost (Foreman)	MM	1.3	154.0	200
(3) Back fill	days	6	Labour cost (Unskilled labour)	MD	12	3.0	36
			Labour cost (Foreman)	MD	6	7.0	42
1.6 Supervision and maintenance of structure	years	1	Mainteinance cost (1.5% of construction cost)				1,893
Sub-total (1)							120,959

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Qualification	For One team (or 1 catchment)			
		Unit	Q'ty	Unit cost	Amount
2.1 Soil Conservation Specialist	Experienced. University Graduate. Major in Soil Conservation	MM	12	700	8,400
Sub-total (2)					8,400

c. Cost of Facilities

3. Facilities	Specification	For One team (or 1 catchment)			
		Unit	Q'ty	Unit cost	Amount
3.1 Motor bike	Mega pro 160cc	Unit	1	2,200	2,200
3.2 Car rental	Toyota Hilux 4WD	UD	110	85	9,350
3.2 Excavator (i/c operator)		UD	12	370	4,440
3.3 Dump truck (i/c operator)		UD	30	120	3,600
3.4 Stemper/Mini Roller (i/c operator)		UD	18	45	810
Sub-total (3)					20,400

Annex F (14): Cost Summary of Initial Gully Control Sub-program (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Cost of Training	-	-	-	5,925
1.2 Cost of Meetings	-	-	-	3,180
1.3 Costs of Materials and Other Direct Expenses	-	-	-	1,425
Sub-total (1)				10,530
2. Remuneration/Staffing cost				
2.1 Specialists	MM	10	700	7,000
2.2 Field assistant	MM	117	370	43,290
Sub-total (2)				50,290
3. Facilities	-	-	-	
Sub-total (3)				17,650
Total (1+2+3)				78,470
4. Management cost (10% of Total Cost)				7,847
5. Contingency (5% of Total Cost)				3,924
Grand Total				90,241
Grand Total (round)				**90,000**

Annex F (14): Cost Breakdown of Initial Gully Control Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

Direct Expenses	Per Team		Materials	For One team (or 3 sucos)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1. Preparatory Work						(US$)	(US$)
1 Assignment of gov staff (1 NDF, 1 DFO, 3 Extensionists	days	3					
1 Procurement of NGOs or experts (1 Expert and 9 Field Assistants							
1.2.1 Preparation of TOR for the works to be contracted ou	days	10					
1.2.2 Recruitment of experts or NGOs	days	10					
1.2.3 Evaluation and selection of experts or NGO	days	5					
1 Guidance to the project staff							
1.3.1 Definition of roles and responsibilities of the government staff involv	days	2					
1.3.2 Organization of guidance sessions to the government staff involved and experts/NGOs recruited respectively	days	3					
1 Consultation with communities							
1.4.1 One-day meetings to explain the watershed management plan (10 pax/suco	days	3	Meals & Snack	Pax	30	2.0	60
1.4.2 One-day consultation meeting to explain the sub-program (20 pax/suco x 1	day	3	Meals & Snack	Pax	60	2.0	120
2. Identification of Potential Areas							
2 One-day session for resource mapping (50 pax/suco x 1 day)	day	3	Meals & Snack	Pax	150	2.0	300
2 One-day session for identification of potential areas (50 pax/suco x 1 day)	day	3	Meals & Snack	Pax	150	2.0	300
3. Group organization							
3 One-day meeting on organization of working groups (50 persons/suco x 1 day)	days	3	Meals & Snack	Pax	150	2.0	300
3 Two-day meeting on roles and responsibilities of the groups (50 pax/suco x 2 days)	days	6	Meals & Snack	Pax	300	2.0	600
4. Exposure visit							
4 Coordination with the other organizations	days	10					
4 One-day exposure visit to suco where similar activities implemented (10/suco x	day	3	Meals	Pax	30	2.5	75
			Transport (Hiring)	bus*day	3	150.0	450
4 One-day feedback meeting among the members (10 pax/aldeia x 5 aldeia x 1 day)	day	3	Meals & Snack	Pax	150	2.0	300
5. Work planning							
5 One-day planning workshop on a work plan (10 pax/aldeia x 5 aldieas x 1 day)	days	3	Meals & Snack	Pax	150	2.0	300
5 Re-estimation of the necessary budget for implementation of the work plan	days	6					
6. Selection of the demonstration plots (3 days/suco)	days	9					
7. Hands-on training at the demonstration plots							
7 Procurement and distribution of materials							
7.1.1 Procurement of agricultural tools	days	5	Shovel (one shovel per member)	unit	150	7.0	1,050
7.1.2 Distribution of materials to members (3 day/suco)	days	9					0
7.1.3 Two-day work for arrangement of local materiasls (10 pax/aldeia x 5 aldeia	days	30	Meals & Snack	Pax	300	2.0	600
			Local materials*1				
7.1.4 Procurement of seeds of king grass	days	14	Seedling of king grass	bundle	75	5.0	375
7.1.5 Provision of seeds of king grass (3 day/suco)	days	9					
7 Organization of Hands-on training							
7.2.1 One-day guidance on gully control (10 pax/aldeia x 5 aldeia x 1 day)	days	15	Meals & Snack	Pax	150	2.0	300
7.2.2 One-day session on design of the plot (10 pax/aldeia x 5 aldeia x 1 day)	days	15	Meals & Snack	Pax	150	2.0	300
7.2.3 Three-day training on cleaning & compactation (10 pax/aldeia x 5 aldeia x	days	45	Meals & Snack	Pax	450	2.0	900
7.2.4 Five-day training on installation of structures (10 pax/aldeia x 5 aldeia x 5	days	75	Meals & Snack	Pax	750	2.0	1,500
7.2.5 Three-day trainng on back fill (10 pax/aldeia x 5 aldeia x 3 days)	days	45	Meals & Snack	Pax	450	2.0	900
7.2.6 Two-day training on planting king grass (10 pax/aldeia x 5 aldeia x 2 days)	days	30	Meals & Snack	Pax	300	2.0	600
7.2.7 Two times of one-day training on maintenance (10 pax/aldeia x 5 aldeias x	days	30	Meals & Snack	Pax	300	2.0	600
8. Technical Assistance to the members in replication of the techniques at individual level	months	9.6					
9. Monitoring and evaluation							
9 Monitoring and maintenance for the deomnstration plots	months	9.6					
9 Monitoring of the tools provided	months	9.6					
9 Two-day participatory evaluation workshop (10 pax/aldeia x 5 aldeia x 2 days)	days	6	Meals & Snack	Pax	300	2.0	600
Sub-total (1)							10,530

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Qualification	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
2 Soil Conservation Specialist	Experienced more than 10 years. University Graduate. Major in Soil Conservation	MM	10	700	7,000
2.2 Field assistant	Experienced more than 5 years in agriculture, forestry and /or rural development. Graduate of	MM	117	370	43,290
Sub-total (2)					50,290

c. Cost of Facilities

3. Facilities	Specification	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
3.1 Motorbike	Mega-pro	Unit	4	2,200	8,800
3.2 Car rental	Toyota Hilux 4WD	UD	90	85	7,650
3.3 Dump truck (i/c operator)		UD	10	120	1,200
Sub-total (3)					17,650

Annex F (15): Cost Summary of Rural Energy Development Sub-program (covering 3 sucos)

Activities	For One team (or 3 suco)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training	Times	-	-	1,875
1.2 Meetings and Discussions	Times	-	-	2,175
1.3 Materials and Other direct expenses	-	-	-	10,087
Sub-total (1)				14,437
2. Remuneration/Staffing cost				
2.1 Expert/Facilitator	MM	2	700	1,400
2.2 Field Assistant	MM	30	370	11,100
Sub-total (2)				12,500
3. Facilities	-	-	-	
Sub-total (3)				25,675
Total (1+2+3)				52,612
4. Management cost (10% of Total Cost)				5,261
5. Contingency (5% of Total Cost)				2,631
G 1.4.1 Discussions of responsibilities and action planning (15 pax/suco x 3 sucos)				60,504
Grand Total (round)				**61,000**

Annex F (15): Cost Breakdown of Rural Energy Development Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

Activities	Materials	For One team (or 3 suco)			
		Unit	Q'ty	Unit cost	Amount
1. Direct Cost					
1.1 Procurement of staff (Formation of Field Teams)					
1.1.1 Procurement of Specialists					
1.1.2 Procurement of extension workers					
1.1.3 Guidance/Training of the Staff					
1.2 Exposure Visit	Training Cost (30 pax/suco x 1 day)	Pax	90	2.5	225
	Material Cost (Transportation)	UD	3	150	450
1.3 Participatory Workshop for Improved Cooking Stove (ICS)s					
1.3.1 Introduction of ICS (15 pax/suco x 2 days x 3 suco)	Meeting cost (Snacks & Meals)	Pax	90	2	180
1.3.2 Discussion of Possible Options and Project Identification	same as above				0
1.3.3 Baseline Survey	Meeting Cost (for core members, Snacks and Meals)	Pax	45	2	90
	Material cost (photocopy) (5 page * 300 HHs)	Page	1,500	0.05	75
1.4 Organization of farmers group					
1.4.1 Discussions of responsibilities and action planning (15 pax/suco x 1 day)	Meeting cost (Snacks & Meals)	Pax	45	2	90
1.5 Model Test					
(1) Preparation of materials, designing and making ICSs (15 days/suco)	Material cost (bricks)(60 brks x 2 types x 45 hhs)	unit	5,400	0.25	1,350
	Material cost (tools) (1 pax for 15 core of 3 suco)	packs	45	40	1,800
	Meeting cost (Snacks & Meals, incentives)(15 packs/suco	Pax	45	5	225
(2) Test Use of Models (3 days /suco with different dates)	Material cost (photocopy) (3 pages for 45hh)	Page	135	0.05	7
(3) Workshop to discuss effectiveness (15 hh/suco)	Meeting cost (Snacks & Meals)	Pax	45	2	90
(4) Design Modification (20 days/suco)	Material cost (bricks)(60 brks x 2 types x 45 hhs)	unit	5,400	0.25	1,350
1.6 Presentation Workshop to other members					
(1) PAC on ISC (20 pax/aldeia x 5 aldeias x 1 day)	Training Cost (Snacks & Meals, Stationary)	Pax	300	2	600
(2) Demonstration for ICS installation (1day, 5 days /suco)	Material cost (60 bricks x 2 types*3 suco *2 time)	unit	720	0.25	180
1.7 ICS Material Distribtuion	Material cost (bricks)(60 brks x 300hh)	unit	18,000	0.25	4,500
1.8 ICS making by participants	Material cost (labor incentives)	unit	300	2	600
1.9 Training on use, monitoring and follow-up training (3 times x 1 day x 100 pax/	Meeting cost (Snacks & Meals)	Pax	600	2	900
1.10 Training on maintenance (100 pax/suco x 1 day)	Training (Snacks & Meals)	Pax	300	2	600
1.11 Annual Evaluation and Planning Workshop (2 days)	Material cost (photocopy) (10 p for 75 hh/suco *3times)	Page	4,500	0.05	225
	Meeting cost (Snacks & Meals)	Pax	450	2	900
Sub-total (1)					14,437

b. Costs of Hired Staff and Facilities

Activities	Qualification/Specification	For One team (or 3 suco)			
		Unit	Q'ty	Unit cost	Amount
2. Hired Staff					
2.1 Expert/Facilitator	Univ graduate, Major in CD/Energy	MM	2	700	1,400
2.3. Field Assistant	Diploma	MM	30	370	11,100
Sub-total (2)					12,500
3. Facilitators					
3.1 Motor bike	125 cc	Unit	4	2,200	8,800
3.2 4WD Vehicle	Pick up	Unit	8	2,250	16,875
Sub-total (3)					25,675

Annex F (16): Cost Summary of Income-Generating/Cost-Saving Sub-program (covering 3 sucos)

Activities	For One team (or 3 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training	Times	-	-	29,723
1.2 Meetings and Discussions	Times	-	-	8,010
1.2 Materials	-	-	-	23,483
Sub-total (1)				61,215
2. Remuneration/Staffing cost				
2.1 Expert/Facilitator	MM	6	700	3,850
2.2.Subject Matter Specialists	MM	4	700	2,800
2.3 Field Assistant	MM	39	370	14,430
Sub-total (2)				21,080
3. Facilities	-	-	-	
Sub-total (3)				12,175
Total (1+2+3)				94,470
4. Management cost (10% of Total Cost)				9,447
5. Contingency (5% of Total Cost)				4,724
Grand Total				108,641
Grand Total (round)				**109,000**

Annex F (16): Cost Breakdown of Income-Generating/Cost-Saving Sub-program (covering 3 sucos)

a. Direct Material and Labor Cost

Activities	Materials	For One team (or 3 sucos)				
		Unit	Q'ty	Time	Unit cost	Amount
1. Direct Cost						
1.1 Procurement of staff (Formation of Field Teams)						
1.1.1 Procurement of Specialists						
1.1.2 Procurement of extension workers						
1.1.3 Guidance/Training of the Staff						
1.2 Situation Analysis						
1.2.1 Resource Finding (50pax /suco* 3 days/suco* 3 suco)	Meeting cost (Snacks & Meals)	Pax	450		3	1,350
1.2.3 Discussion of Possible Options, Project Identification and Action Planning (20 pax/suco x 2 days x 3 suco)	Meeting cost (Snacks & Meals)	Pax	240		3	720
1.3 Situation Analysis						
1.3.1Selection of delegated members (2 days/suco 6days) (40 hh/suco, 120hh in total)						
1.3.2 Discussions of roles, responsibilities and action plan (3 day/suco, 9 days)	Meeting cost (Snacks & Meals)	Pax	450		3	1,350
1.4 Baseline Survey						
	Material cost (photocopy) (5 page * 150 HHs)	Page	750		0.05	38
1.5 Exposure Visit	Training Cost	Pax	90	1	2.5	225
	Material Cost (Transportation)	Pax	150	1	3	450
1.6 Common Issue Training						
(1) Market Survey (including preparation)	Training Cost (Snacks & Meals)	Pax	90	1	2	180
(2 rep. from each group; 5 groups=aldeia/suco, 30 in total)	Meeting Cost (Fee for interviewees)	Person	24	1	10	240
	Material Cost (Transportation&Accomodation)	Person	10	1	30	300
	Material Cost (photocopy) (5 page * 30 HHs)	Page	150	1	0.05	8
(2) Business Management (Bookkeeping & Accounting) and Checking	Training Cost (Snacks & Meals)	Pax	60	2	2	240
(2 rep. from each group; 5 groups=aldeia/suco, 30 in total)	Material Cost (calculator, etc)	Unit	15	2	30	900
	Material Cost(photocopy) (20 page * 30 HHs)	Page	600	2	0.05	60
(3) Advertisement	Training Cost (Snacks & Meals)	Pax	30	2	2	120
(2 rep. from each group; 5 groups=aldeia/suco, 30 in total)						
1.7 Training of dried food processing						
(1) How to prepare a solar drier (3-day training/ aldeia)	Training Cost (Snacks & Meals)	Pax	675	2	2	2,700
	Material Cost (Material for Solar Drier)	Unit	15	2	175	5,250
(2) How to make dried vegetable, fruits, fishes and meats (5 days)	Training Cost (Snacks & Meals)	Pax	1,125	2	2	4,500
	Material Cost (Kitchen tools)	Pax	15	1	100	1,500
(3) How to make a package						
	Material Cost (Trial Package Development)	Pax	3	2	7.5	45
(2) Trial Implementation (including follow-up : 3 times/group)	Training Cost (Snacks & Meals (1 times /group)	Pax	225	2	2	900
1.8 Training of Tais making						
(1) How to prepare tais (5 days)	Training Cost (Snacks & Meals)	Pax	1,125	2	2	4,500
	Material Cost (Plastic ropes)	Role	30	2	15	900
	Material Cost (Plastic ropes small)	Role	24	2	15	720
	Material Cost (Doreng)	Pack	24	2	10	480
	Material Cost (Color String)	Role	300	2	1.25	750
(2) Trial Implementation (including follow-up : 3 times/group)	Training Cost (Snacks & Meals (1 times /group)	Pax	225	2	2	900
1.9 Training of Sewing machine / Cloth making						0
(1) Use of sewing machine for cloth making/reparing (5 days)	Training Cost (Snacks & Meals)	Pax	1,125	2	2	4,500
	Material Cost (Sewing Machine and string etc.)	Pax	15	2	218	6,540
(2) Trial Implementation (including follow-up training: 3 times/group)	Training Cost (Snacks & Meals (1 times /group)	Pax	225	2	2	900
1.10 Handicraft production (for 2 groups)						
(1) How to produce handicraft (5 days)	Training Cost (Snacks & Meals)	Pax	1,125	2	4	9,000
	Material Cost (Leaves for handicraft , etc)	Pax	60	2	45	5,400
	Material Cost (Color powder)	Pax	30	2	25	1,500
1.11 Annual Evaluation and Planning Workshop (2 days)	Meeting Cost (Snack & Meal)	Pax	450	4	2	3,600
	Material cost (photocopy) (10 page * 75 HHs)	Pax	2,250	4	0.05	450
Sub-total (1)						61,215

b. Costs of Hired Staff and Facilities

Activities	Qualification/Specification	For One team (or 3 sucos)			
		Unit	Q'ty	Unit cost	Amount
2. Hired Staff					
2.1 Expert/Facilitator	Univ graduate, Major in CD and Business Managemei	MM	6	700	3,850
2.2 Subject Matter Specialists (Working in NGO, University graduate)	Univ graduate, Major in CD and Business Managemei	MM	4	700	2,800
2.3 Field Assistant	Diploma of Agri school	MM	39	370	14,430
Sub-total (2)					21,080
3. Facilitators					
3.1 Motor bike	125 cc	Unit	4	2,200	8,800
3.2 4WD Vehicle	Mitsubishi Pajero	Unit	2	2,250	3,375
Sub-total (3)					12,175

Annex F (17): Cost Breakdown of Public Awareness Campaign Sub-Program (covering 4 sucos)

Activities	For One team (or 4 sucos)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Workshop/meeting Cost	Times	-	-	10,060
1.2 PAC materials Cost	L.S.	-	-	11,290
Sub-total (1)				21,350
2. Remuneration/Staffing cost				
2.1 PAC expert/facilitator	MM	21	700	14,700
2.2 PAC material development Expert	MM	17	700	11,900
2.3 Field workers	MM	14	370	5,180
Sub-total (2)				31,780
3. Facilities	-	-	-	
Sub-total (3)				16,130
Total (1+2+3)				69,260
4. Management cost (10% of Total Cost)				6,926
5. Contingency (5% of Total Cost)				3,463
Grand Total				79,649
Grand Total (round)				**80,000**

Annex F (17): Cost Breakdown of Public Awareness Campaign Sub-Program (covering 4 sucos)

a. Direct Material and Labor Cost

1. Direct Expenses	Per Village		Materials	For One team (or 4 sucos)			
	Unit	Q'ty		Unit	Q'ty	Unit cost	Amount
1.1 Preparatory Work						(US$)	(US$)
1.1.1 Assignment of gov staff (1 NDF, 1 NDRSS, 1 DFO	days	3					
1.1.2 Procurement of NGOs or experts (1 PAC Expert, 1 PAC Material Development Expert, 3 Field Assistants							
1.1.2. Preparation of TOR for the works to be contracted ou	days	10					
1.1.2. Recruitment of experts or NGOs	days	10					
1.1.2. Evaluation and selection of experts or NGOs	days	5					
1.1.3 Guidance to the project staff							
1.1.3. Definition of roles and responsibilities of the government staff involve	days	2					
1.1.3. Organization of guidance sessions to the government staff involved and 2 experts/NGOs recruited respectively	days	3					
1.2 Assessment of current conditions of the villages							
1.2.1 Review of the reports on present condition of the villages	days	2					
1.2.2 Determination of the main theme and topics to be addresse	days	2					
1.3 Development of Awareness Raising Materials							
1.3.1 Development of materials for children							
1.3.1.1 Development of a story line of a picture book	days	60					
1.3.1.2 Development of the picture book	days	90	Material cost for the Picture book	L.S.	1	100.0	100
1.3.2 Development of materials for adults-1							
1.3.2.1 Development of a plot for pamphlet	days	60					
1.3.2.2 Development of the pamphlet	days	90	Material cost for the Pamphlet	L.S.	1	50.0	50
1.3.3 Development of materials for adults-2							
1.3.3.1 Development of a plot for leaflet	days	90					
1.3.3.2 Development of the leaflet	days	120	Material cost for the Leaflet for 13 types of Sub-programs	L.S.	10	10.0	100
1.3.4 Organization of a meeting for the trial use of the material prepared	days	2	Meals & Snack	Pax	30	2.0	60
1.3.5 Finalization of the material	days	30	Copy of the Picture book	copie	8	60.0	480
			Copy of the Pamphlet	copie	240	4.0	960
			Copy of the leaflet	copie	4800	2.0	9,600
1.4 Consultation with communities							
1.4.1 Organization of meetings with suco leaders and teachers of the target sucos to explain the purpose and outlines of the watershed management plan and to sound their willingness to take part in the sub-programs (1 day/suco	days	8	Meals & Snack	Pax	80	2.0	160
1.5 Awareness Level Survey							
1.5.1 Preparation of the questionnare form	days	10					
1.5.2 Implementation of the survey (to 60 children and 30 adults per suco) (4 day	days	32	Meals & Snack	Pax	360	2.0	720
1.5.3 Data encoding	days	20					
1.5.4 Data analysis to identify the baseline of the target members	days	5					
1.6 Organization of a workshop with the target members-1							
1.6.1 Development of a workshop design	days	10					
1.6.2 Organization of a 1st workshop on sustainablel forest and watershed management for children							
1.6.2.1 Presentation of the material for children (1day/suco)	days	8	Meals & Snack	Pax	480	2.0	960
1.6.2.2 Organization of a drawing session with children and a dialogue session betv adult and children (2 days/suco)	days	16	Drawing paper (A3)	Pcs	480	2.5	1,200
			Color pencil	Box	480	2	960
			Meals & Snack	Pax	#####	2.0	2,400
1.6.3 Organization of a 2nd workshop on sustainablel forest and watershed management for adults							
1.6.3.1 Presentation of the material for adults (1day/suco)	days	8	Meals & Snack	Pax	240	2.0	480
1.6.3.2 Organization of a meeting among participating adults to discuss about sustainablel forest and watershed management (2 days/suco	days	16	Meals & Snack	Pax	480	2.0	960
1.6.4 Organization of a 3rd workshop on the topics related to sub-programs implemented in the villages							
1.6.4.1 Presentation of the material for adults (1day/suco)	days	8	Meals & Snack	Pax	240	2.0	480
1.6.4.2 Organization of a meeting among participating adults to discuss on issues in implementation of the sub-program or/and attainment of main aims of the sub-program (2 days/suco	days	16	Meals & Snack	Pax	480	2.0	960
1.7 Post evaluation of Awareness Level							
1.7.1 Preparation of the questionnare form	days	5					
1.7.2 Implementation of the survey	days	32	Meals & Snack	Pax	360	2.0	720
1.7.3 Data encoding	days	20					
1.7.4 Data analysis to identify the baseline of the target members	days	5					
1.8 Coordination with other organizations	months	23					
Sub-total (1)							21,350

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Qualification	For One team (or 4 sucos)			
		Unit	Q'ty	Unit cost	Amount
2.1 PAC Expert/Facilitator	Expeienced more than 10 years, University Graduate	MM	21	700	14,700
2.2 PAC material development Expert	Expeienced more than 10 years, University Graduate	MM	17	700	11,900
2.3 Field assistant	Expeienced more than 5 years, Graduate of vocational schoo	MM	14	370	5,180
Sub-total (2)					31,780

c. Cost of Facilities

3. Facilities	Specification	For One team (or 4 sucos)			
		Unit	Q'ty	Unit cost	Amount
3.1 Motorbike	Mega-pro	Unit	2	2,200	4,400
3.2 Car rental	Toyota Hilux 4WD	UD	138	85	11,730
Sub-total (3)					16,130

Annex F (18): Cost Summary of Environmental Education Sub-Program (covering 14 schools)

Activities	For One team (or 14 schools)			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Training and Meeting Cost	-	-	-	6,259
1.2 Environmental Education Materials Cost	-	-	-	41,250
Sub-total (1)				47,509
2. Remuneration/Staffing cost				
2.1 Specialists	MM	29	700	20,300
2.2 Surveyors	MM	2	370	740
Sub-total (2)				21,040
3. Facilities	-	-	-	
Sub-total (3)				5,550
Total (1+2+3)				74,099
4. Management cost (10% of Total Cost)				7,410
5. Contingency (5% of Total Cost)				3,705
Grand Total				85,214
Grand Total (round)				**85,000**

Annex F (18): Cost Breakdown of Environmental Education Sub-Program (covering 14 schools)

a. Direct Material and Labor Cost

1. Direct Expenses	Per Unit	Team Q'ty	Materials	For One team (or 14 schools) Unit	Q'ty	Unit cost	Amount
1.1 Formation of working team						(US$)	(US$)
1.1.1 Recuirtment of members	days	7					
1.1.2 Assignment of gov staff	days	7					
1.1.3 Guidance/Orientation to members	days	1	Meeting cost (snacks & meals)	Pax	10	2	20
1.2 Needs Assessment for Environmental Education							
1.2.1 Preparation of needs sssessment, e.g.,identification of target groups, preparation of format	days	10					
1.2.2 Conduct of needs sssessment survey	days	1	Printing cost (Format for Needs Assessment)	copy	70	1	70
			Meeting cost (snacks & meals)	Pax	80	2	160
			Meeting cost (Transportation cost for participants)	Person	70	8	560
1.2.3 Data Analysis	days	10					
1.2.4 Identification of main components of activities							
1.2.4.1 Identification of possible subjects for curriculum of environemntal education	days	10					
1.2.4.2 Identification of possible themes and type of materials for environmental education	days	10					
1.2.4.3 Determination of contents of Teacher's handbook	days	10					
1.2.4.4 Determination of components of teacher training courses	days	10					
1.3 Development of curriculum and materials of environmental education							
1.3.1 Development of curriculum of environmental education	days	60					
1.3.2 Development of a Teacher's Handbook on environmental	days	30	Material cost (Teacher's handbook)	L.S.	10	25	250
1.3.3 Development of materials for environmental education	days	60	Material cost (Material of env education)	L.S.	100	25	2,500
1.3.4 Pretest of curriculum of environmental education, Teacher's Handbook and material for environmental education @ 4 schools							
1.3.4.1 Identification of target schools	days	5					
1.3.4.2 Guidance with target schools	days	4					
1.3.4.3 Implementation of pretest	days	30					
1.3.5 Meeting with teachers to monitor the progress of the pretest of							
1.3.5.1 Preparation of monitoring format	days	5					
1.3.5.2 Meeting with teachers to monitor the progress of the pretest of	days	4					
1.3.6 Feed-back meeting to revise curriculum of environmental education, Teacher's Handbook and material for environmental education	days	1	Meeting cost (snacks & meals)	Pax	15	2	30
			Printing cost (handouts for meeting)	copy	15	1	15
			Meeting cost (Transportation cost for participants)	Person	8	8	64
1.3.7 Preparation of Draft Final of curriculum of environmental Teacher's Handbook and material for environmental education	days	30	Material cost (Teacher's handbook)	L.S.	40	25	1,000
			Material cost (Material of env education)	L.S.	400	25	10,000
1.3.8 Implementation of curriculum @ 14 schools (1 school/sub-	days	1					
1.3.9 Feed-back meeting to revise curriculum of environmental Teacher's Handbook and material for environmental education	days	1	Meeting cost (snacks & meals)	Pax	60	2	120
			Printing cost (handouts for meeting)	copy	60	1	60
			Meeting cost (Transportation cost for participants)	Person	42	8	336
1.3.10 Finalization of curriculum of environmental education, Teacher's Handbook and material for environmental education	days	30	Material cost (Teacher's handbook)	L.S.	100	25	2,500
			Material cost (Material of env education)	L.S.	1,000	25	25,000
1.4 Development of teacher training courses @ 42 participants from 14 schools : 1 school/sub-district in the target watersheds							
1.4.1 Preparation of training materials	days	20					
1.4.2 Preparation of schedule f training courses and coordination	days	10					
1.4.3 Conducts of training courses	days	7	Printing cost (handouts for training course)	copy	350	1	350
			Training cost (snacks & meals)	Pax	350	3	1,050
			Training cost (Transportation cost for participants)	person	294	8	2,352
1.4.4 Implementation of exposure visit	days	2	Training cost (snacks & meals)	Pax	100	3	300
			Printing cost (materials for exposure visit)	copy	100	1	100
			Training cost (Transportation cost for participants)	person	84	8	672
Sub-total (1)							47,509

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Qualification	For One team (or 14 schools) Unit	Q'ty	Unit cost	Amount
2.1 Environmental Education Expert	Expeienced, University Graduate, Major in Environment	MM	29	700	20,300
2.2 Surveyors	Experience in environmental project	MM	2	370	740
Sub-total (2)					21,040

c. Cost of Facilities

3. Facilities	Specification	For One team (or 14 schools) Unit	Q'ty	Unit cost	Amount
3.1 4WD Vehicle	Mitsubish Pajero	UM	1	2,250	2,250
3.2 Computor	Desktop, Microsoft Office	Unit	1	1,000	1,000
3.3 Projector		Unit	1	1,000	1,000
3.4 Printer	Inkjet	Unit	1	300	300
3.6 Digital camera		Unit	5	200	1,000
Sub-total (3)					5,550

Annex F (19): Cost Summary of Wateshed-related Institutional Development Sub-program

Activities	Total Cost			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Airfair for the International Specialist	-	-	-	8,000
1.2 Consultation meetings				750
1.3 Allowance and other direct expenses	-	-	-	18,250
Sub-total (1)				27,000
2. Remuneration/Staffing cost				
2.1 Forestry Institutional Development	MM	5	4,000	20,000
2.2 Translator/Facilitator	MM	5	500	2,500
Sub-total (2)				22,500
3. Facilities	-	-	-	
Sub-total (3)				5,850
Total (1+2+3)				55,350
4. Management cost (10% of Total Cost)				5,535
5. Contingency (5% of Total Cost)				2,768
Grand Total				63,653
Grand Total (round)				**64,000**

Annex F (19): Cost Breakdown of Wateshed-related Institutional Development Sub-program

a. Direct Material and Labor Cost

1. Direct Expenses	Total Cost			
	Unit	Q'ty	Unit cost	Amount
1.Airfair for the International Specialist				
1.1 1st visit for preparation of procedures	round	1	2,000	2,000
1.2 Visits for monitoring	round	3	2,000	6,000
2. Consultation meetings				
2.1 1st meeting for situation analysis	Pax	50	5	250
2.2 Consultation meetings for the draft procedures	Pax	100	5	500
3. Allowance and other direct expenses				
3.1 Allowance for International Specialist	Days	150	80	12,000
3.2 Transportation cost (Rental car)	LS	150	35	5,250
3.3 Preparation of draft report	LS	1	500	500
3.4 Miscellaneous	LS	1	500	500
Sub-total				27,000

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Total Cost			
	Unit	Q'ty	Unit cost	Amount
2.1 Forestry Institutional Development	MM	5	4,000	20,000
2.2 Translator/Facilitator	MM	5	500	2,500
Sub-total (2)				22,500

c. Cost of Facilities

3. Facilities	Total Cost			
	Unit	Q'ty	Unit cost	Amount
3.1 4WD	Month	1	2,250	2,250
3.4 Sedan	Month	4	900	3,600
Sub-total (3)				5,850

Annex F (20): Cost Summary of Capacity Development Sub-program (CD-SP)

Activities	Total Cost			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Meetings and Workshops	-	-	-	820
1.2 Cost for Training	-	-	-	6,875
1.3 Reporting and Documentation	-	-	-	2,500
1.4 Direct Cost for International Specialist	-	-	-	21,650
Sub-total (1)				31,845
2. Remuneration/Staffing cost				
2.1 International Specialists	MM	12	4400	52,800
2.2 Specialists from Local NGOs	MM	6	700	4,200
2.3 Other supporting staff	MM	8	370	2,960
Sub-total (2)				59,960
3. Facilities				
Sub-total (3)				13,500
Total (1+2+3)				105,305
4. Management cost (10% of Total Cost)				10,531
5. Contingency (5 % of Total Cost)				5,265
Grand Total				121,101
Grand Total (round)				**121,000**

Annex F (20): Cost Breakdown of Capacity Development Sub-program (CD-SP)

a. Direct Material and Labor Cost

1. Direct Expenses	Total Cost			
	Unit	Q'ty	Unit cost	Amount
1.1 Meetings and Workshops				
1.1.1 Two-day TNA Workshop with the participation of 60 persons	Person-day	120	3	360
1.1.2 Two-day evaluation workshops with the participation of 60 persons	Person-day	120	3	360
1.1.3 Miscellaneous	LS	1	100	100
1.2 Cost for Training				
1.2.1 Training of NDF (5 from NDF + 5 from districts)				
Project management/overall aspect (10 pax x 10 days)	Person-day	100	3	300
Other direct expenses	Person-day	100	3	250
1.2.2 Training of NDAH, NDIPA, NDSDAC, etc. (5 from central + 5 from District)				
Project management/overall aspect (10 pax x 10 days)	Person-day	100	3	300
Other direct expenses	Person-day	100	3	250
1.2.3 Training of DFOs and Forest Guards (5 from DFOs + 15 from guards)				
TOT on managerial and technical aspects (20 pax x 5 courses x 3 days/course)	Person-day	300	3	900
Other direct expenses	Person-day	300	3	750
1.2.4 Training of DCrOs , DCoOs, ane Extensionists (5 from distrcts and 45 extensionists)				
TOT on managerial and technical aspects (50 pax x 5 courses x 3 days/course)	Person-day	750	3	2,250
Other direct expenses	Person-day	750	3	1,875
1.3 Reporting and Documentation				
1.3.1 Report making	LS	1	500	500
1.3.2 Preparation of materials, etc.	Pax	100	20	2,000
1.4 Direct Cost for International Specialist				
1.4.1 Airfair	Round	4	2,000	8,000
1.4.2 Allowance	Person-day	195	70	13,650
Sub-total (1)				31,845

b. Cost of Hired Staff

2. Remuneration/Staffing cost	Total Cost			
	Unit	Q'ty	Unit cost	Amount
2.1 International Specialist				
2.1.1 Training/Capacity Development Specialist	MM	9.0	4,400	39,600
2.1.2 Subject matter specialists	MM	3.0	4,400	13,200
2.2 Specialists from Local NGOs				
2.2.1 Subject matter specialist	MM	6.0	700	4,200
2.3 Other supporting staff				
2.3.1 Data encorder	MM	2.0	250	500
2.3.2 Translator/Facilitator	MM	6.0	700	4,200
Sub-total (2)				61,700

c. Cost of Facilities

3. Facilities	Total Cost			
	Unit	Q'ty	Unit cost	Amount
3.1 4WD	Month	6	2,250	13,500
3.2 Motor Bike	Unit	0	2,250	0
Sub-total (3)				13,500

Annex F (21): Cost of Mobility Improvement Sub-program

Activities	Total Cost			
	Unit	Q'ty	Unit cost	Amount
1. Direct Cost				
1.1 Motor Bike (off-road type)	Unit	8	2,250	18,000
1.2 4WD	Unit	1	35,000	35,000
Sub-total (1)				53,000
2. Remuneration/Staffing cost	-	-	-	0
3. Facilities	-	-	-	0
Total (1+2+3)				53,000
4. Management cost (10% of Total Cost)				5,300
5. Contingency (5% of Total Cost)				2,650
Grand Total				60,950
Grand Total (round)				**61,000**

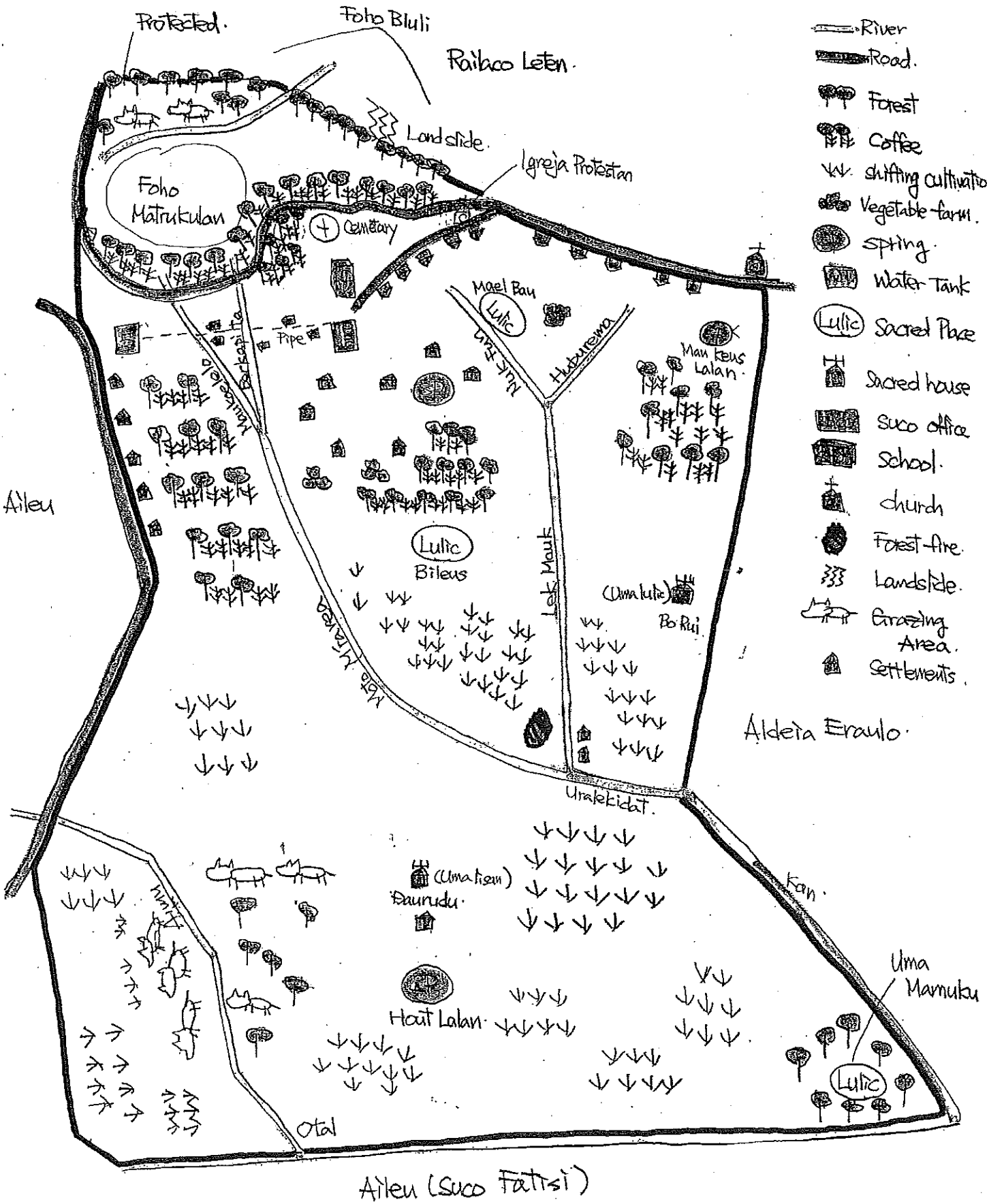
Annex – G

Results of RRA Survey at the Target Villages

Annex – G (1)

Results of RRA Survey at Suco Samalete

Annex-G (1-1) Resource Map of Aldeia Leborema,Suco Samalete



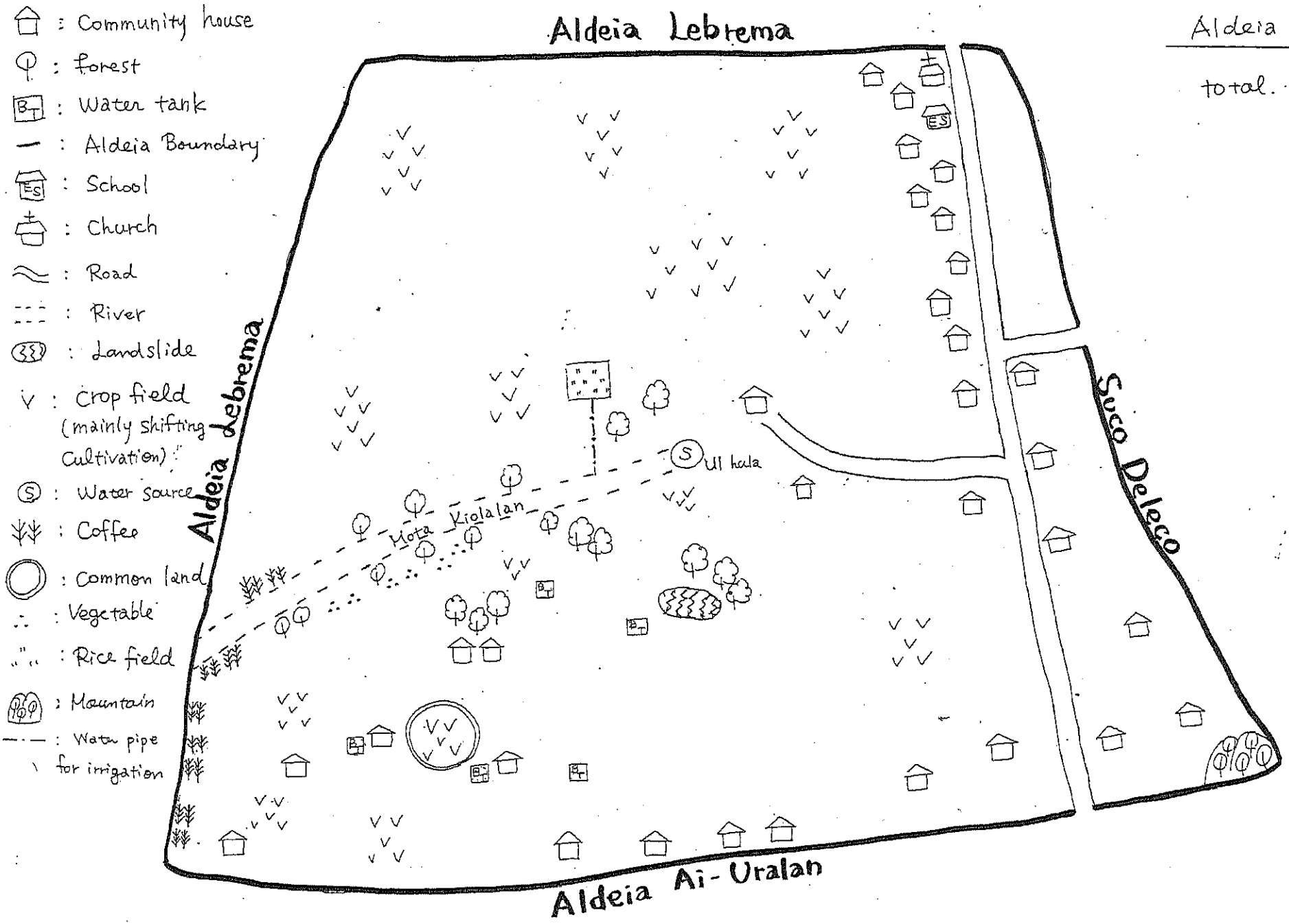
Aileu (Suco Fatisi)

*1 Households were forced to live along the main road in the Indonesian era.

*2 They have not returned back to their original places since the original ones are far from their

Appendix-G (1-1). Points of Discussions on Resource Mapping of Aldeia Leborema (Aldeia I)

Topic	Discussions
Important water sources and their purposes	➢ Water sources (springs) are used for watering vegetable gardens, which are developed near the springs in general.
Other natural resources	➢ In the discussion about the forest resources, elders informed that during the Portuguese times *Ai Ru* and *Ai Bubur* were cut down and replaced with *Ai Samtuku* for shade trees for coffee trees. ➢ Other trees such as *Ai Rame*, *Ai Denu,*and *Ai Samtuku Metan* are self grown in forest or farmland.
Agricultural resources	➢ Taro, cassava, banana, jackfruit, mango, vegetables, citrus and *tunis* (pigeon pea) are planted in permanent (fixed) farms and backyard gardens. ➢ Coffee plantation in the aldeia is about 18 – 22 ha in total. It takes about 5-10 years to bear fruits after plnating. Average distance from their houses to the farms is about 1 km. ➢ The price of coffee is about US$ 0.25/kg in cherry and US$ 1.50/kg in parchment. Women keep sales (the money from the sale) and both men and women decide the usage of the money. Some family who have owed other families repay their debts after the coffee harvest season. ➢ Vegetables are mainly planted near the water sources or riverside. ➢ During the Indonesian period, Cashew Nuts *(Jambu Menteh)* and Clove *(cengkeh)* were introduced, but many of them died as they were planted in infertile soils in the village.
NTFP	None discussed during session
Land ownership & Land use	➢ There is no government land or no communal land. All lands have been owned privately since the ancestral time. ➢ Farmers practiced shifting cultivation by slash and burning, planting corn, peanuts and *tunis* (pigeon pea). The total area for shifting cultivation is approximately 2 ha per family. ➢ Inheritance of land is only to the male line, since male is considered as a landlord and is not 'married out', while daughters are considered to be married out to another male landowner. Daughter can be given part of the land to cultivate if they return to their home town.
Grazing	➢ Grazing animals is limited to their own farms (shifting cultivation plot) or other people's farms. As long as there is permission from the land owner and the land is yet to be planted with food crops, the land can be used for grazing.
Landslides	➢ Erosion or land slide occurred last year during heavy rains (at the top of the village). But the villagers don't know the cause, as one commented that it might be because of the death of a 'big snake', referring to their animist beliefs.
Others	➢ **Women** mainly shares tasks of slash and burning, clearing, picking up dry woods for firewood. Men mainly cut trees and do more laborious part of the cultivation.

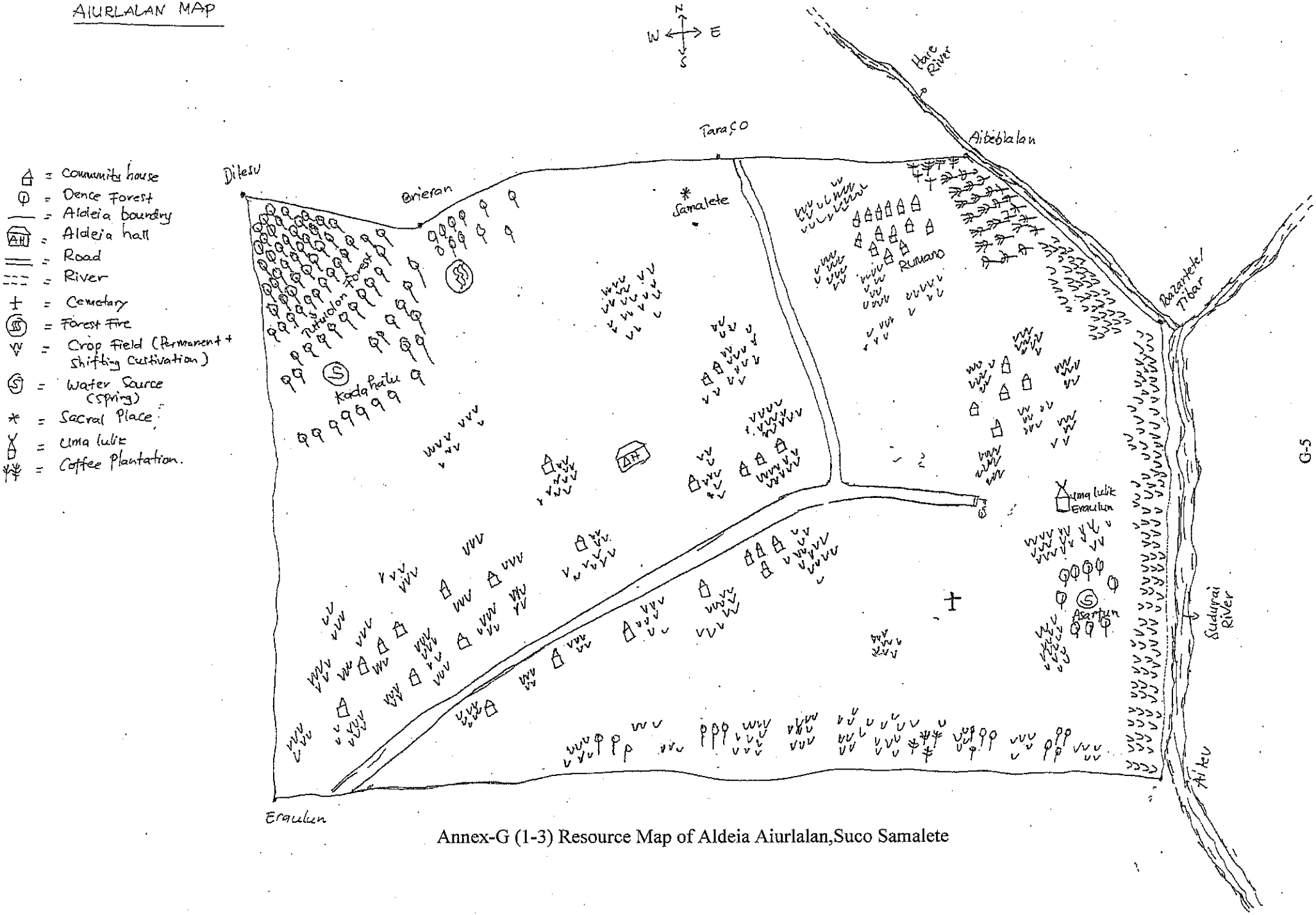


Annex-G (1-2) Resource Map of Aldeia Eraulo,Suco Samalete

Appendix-G (1-2). Points of Discussions on Resource Mapping of Aldeia Eraulo

Topic	Discussions
Identification of main facilities	➢ The houses were built by themselves. The villagers purchased its materials with income from coffee, corn and cassava. Their markets are in Dili and Aileu. The villagers go to Aileu on foot. ➢ They mentioned that there are 74 HHs (272 males and 203 females) in the Aldeia. ➢ It was also mentioned that they started to live in the Aldeia in 1982.
Identification of natural resources	➢ The villagers believe that the trees in the mountain can conserve the sources of water. The mountain belongs to 10 owners including Mr. Martino. The villagers can collect fire woods from the mountain with permission of the owners just for domestic use but not for selling. In addition, there is agreement that the villagers can cut the trees from the mountain for construction of houses with permission of the owners. ➢ As important natural resources, coffee, jack fruits, banana and Koto Moruk were also identified. ➢ Their farm plots are mainly located near the river due to the access of water. ➢ As regards landslide it was suggested by the participants that its possible cause was deforestation derived from shifting cultivation, which have been practiced in most of the Aldeia. The total holding size of areas for shifting cultivation ranges from 5 to 7 ha/HH. ➢ Land preparation for annual cropping starts from August. The farm plots are burned to clean. ➢ The issue on water degradation was pointed out by the participants. They also mentioned that the quality of water is still the same as before while its quantity became reduced. ➢ A water tank was constructed with the financial assistance by Finland government. Its water was used for drinking and washing but now the tank is out of order. ➢ About the coffee plantation, it was mentioned that all 74 HHs have own coffee fields. Seeds of coffee can be obtained in Ermera. Coffee farming started in the Portuguese era. The main shade tree is Albizia (Samutuku), which was recommended by Portuguese government. Coffee is consumed and also sold to the middlemen including those belongs to CCT. The middlemen come to the community to purchase the products. They also mentioned that the trees with about 15 years old would give better production. Its selling price is US$ 1.50/kg on average. The selling season is during July-August, while the planting season is in December. ➢ Corn, Bean and Cassava are planted in November. After harvesting corn and the 1st beans, the 2nd beans are replanted first, and then cassava and banana are planted in the empty spaces after harvesting second cropping of beans. Corns can be stock for 5-6 months. ➢ The agricultural production in the slope area is lower than that in the plain area. ➢ Terrace making is yet to be introduced. ➢ There are some water tanks in the villages and during the dry season some villagers move near to the tanks to use water. ➢ There is 0.5 ha of paddy field, which is irrigated by a canal directly from the river. It was mentioned that most of the area in the Aldeia is located in hilly areas with slopes, so that they cannot operate lowland rice farming ➢ There is an incidence of a coffee disease caused by red ants. ➢ If there is few rains after planting corns, the villagers would organize the traditional ceremony to pray for rain. ➢ It is difficult for the villagers to control a forest fire. The villagers usually prepare firebreak belts/lines to reduce the occurrence of forest fire. ➢ Tua mutin is produced near the river.
Land ownership	➢ Accordingly, all the lands of the Aldeia are categorized as private land. ➢ There is no government land.

AIURLALAN MAP



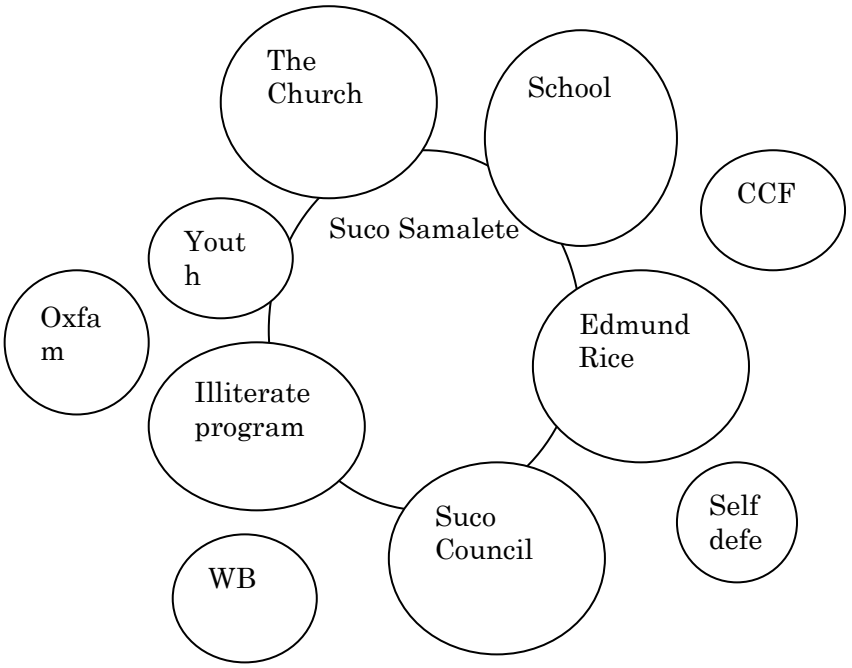
Annex-G (1-3) Resource Map of Aldeia Aiurlalan,Suco Samalete

Annex-G (1-3). Results of Historical Profile of Suco Samalete

Theme	Discussions
General History	The key informants were interviewed on the evening of Wednesday, 3 October 2007. The key informants started telling the history of suco since their ancestor times. The history of suco is largely divided into several parts, namely, i) Ancestor time, ii) Portuguese era (1936-1975), which was further interrupted by the Japanese occupation between 1940 - 1943, iii) Indonesian era (1975-1999), and iv) After the referendum (2000-2007).
Ancestor Time	A man was born and he was called "Mau Sama", which further known as "Samalete". Therefore, the name of this suco was given after his name, namely, Sama Lete. In this time, Sama Lete was comprised of 6 aldeas. However, it was told that "Mau poni" was the successor of "Mau Sama" and "Mau poni" was "Mau Lelo". Tara bandu was practice even in this time to control natural resources, social morality and security. Shifting cultivation has started since this era. It was told by the participants that the reasons that this practice has been maintained are the land productivity and yields of crops. To resolve issues that arise in the suco, traditional and cultural leaders sit down and talk to discuss to see fairness and justice of the person who offended the rules.
Portuguese Era	**1936** ➢ Mau Lelo" was belief to rule in 1936 where 6 aldeas in Samalete was divided into 5 aldeas. There was no clear reason why this happened; most likely due to many people migrated to other places as they were scared of heavy work ➢ Forest was untouched ➢ The villagers lived faraway from each other . **1942** ➢ The villagers fled to other places due to the Second World War known as Japanese war. **1950** ➢ Mr. Antonio Taraleko, District Administrator Ermera introduced coffee farming in Fatubesi ➢ He introduced his policy on planting coffee and shade trees ➢ The villagers started a barter system. ➢ The villagers started selling agriculture products to earn money to pay taxes. ➢ There were many dump people. **1953** ➢ There was a large scale landslide occurred in Samalete and several natural springs were destroyed. **1969** ➢ Coffee (Arabica and Robusta) was introduced in Samalete from Portuguese Coffee Centre in Fatubesi, Ermera. ➢ The villagers were forced to plant coffee and shade trees. ➢ An access road to Samalete was constructed under king Mau Keli rule.
Indonesian Era	**1974** ➢ Political party in Timor Leste was formed. ➢ Civil war took place.

Theme	Discussions
	➢ Many people died and/or fled to mountains or Indonesia. **1980** ➢ The Indonesian military started clean operations in searching for freedom fighters.
Independence Era	**1999** ➢ There were many people fled to mountains and Indonesia after the referendum for independence. **2002** ➢ CRS started work on coffee rejuvenation experiment on a coffee farm, which is given voluntary by coffee farmers. 100 square meters of coffee plants were put on trial. It was told during the period of rejuvenation the farmer was given an intensive of US $ 500 so as to complement his/her lost income by rejuvenation. **2006** ➢ Refugees from Dili came to settle in the village. ➢ 7 children were killed by diarrhea. ➢ There was a forest fire burning 42 ha of coffee plantation and 6 houses including animals. **2007** ➢ Coffee production was very low.

Appendix-G (1-4). Venn diagram of existing institutions working in Suco Samalete

Theme	Discussions
Venn diagram	
Judgments of the community	There are several institutions working in Samalete: 1. Edmund Rice (staying in the community). The community considers that institution is very important and helpful for them in term of improving their life. Edmund Rice is working on : • Providing Scholarship for students (Junior High School – University) • Health assistance • Power/ Electricity (solar power system) • Sawing for Women group • Water supply • Illiterate program Based on those activities community decided to give point 10 to Edmund Rice institution. 2. Oxfam (visits the village sometimes). The community considers Oxfam had done important activities in the village, and therefore they gave point 7 to Oxfam. Oxfam did the following activities: • Capacity Building/Training; • Dissemination of information regarding how to protect coffee from pests and diseases; and • Distribution of agricultural inputs/equipment (seeds, etc) 3. World Bank (visited the village once in 2003). Even though World Bank visited the village only once, but the community considers services of World Bank were very helpful. Based on that reason community decided to give point 8 to World Bank. In 2003 World bank did: • Distribution of housing materials especially to poor families. About 40 families received the assistance (elderly, disable persons and orphans). 4. Christian Children Fund (CCF) (visited the village twice in 2004). The community gives point 8 because the assistance given by CCF was very important for their life. CCF supported the community in:

Theme	Discussions
	• Distributing materials of building a house (cements, wood, roof); and • Delivering green bean, rice, cooking oil and others food materials for all community members. 5. Suco council (elected by community and living in the community). The community considers suco council is important for them. The community decided to give point 9 to the local authority because of its importance in liaising with the government. The community said that roles/functions of suco council as follows: • Work closely with the community; • Act as a liaison between community and government; • Function as a conflict management body in the village; and • Organize a meeting with the community members to draft a Suco development plan. 6. Catholic Church (In the community). The community respects the church very much. The villagers usually think that the church is the institution to be able to save their souls in the end of the world. Therefore the community gave point 10 to the institution. The main activities of the church are: • Religious ceremony; and • Acting as moral and social control. 7. Education/School/ Primary school. Both schools are located in the community and their children can easily attend the schools every day. The villagers realize that the education institution is very important for the future of their kids. Hence, the participants gave point 10 to the school. The important functions of the schools are to: • Educate the children in basic level; and • Form a good behaviors of the kids. 8. Youth Group (staying in the community). There is a youth group which is composed of young people in suco Samelete. The participants gave point 6 to the youth group considering the functions of youth in the community. Accordingly, the youth group usually does: • Work together with the community in managing public facilities, maintaining roads, and cleaning uma lulik etc.; • Help the elderly and disable in farming as well as harvesting without sharing production. (some of them are paid); • Function as representative of Suco in districts level especially at sporting events (foot ball, volley ball, etc.). 9. Women's Group (staying in the community). Basically, the women group is a part of Suco council structure but the community considers the group is very important in supporting Suco's activities. Hence, the participants gave point 10 to the group. The main activities of women group are: • Sawing; • Helping medical staff in providing medicines/ health assistances; • Cooking for guests in the suco if needed; • Arranging the room for meeting in Suco level; and • Working as receptionist. 10. Self-defense group (staying in the community). The community decided to give point 5 for this group. Actually there was no reason when they decided the point. 11. Ministry of Education/Illiterate program. The community considers this activity is very important for developing their suco. The illiterate program is organized trice a week. The participants gave point 10 to this program due to its importance.

Appendix-G (1-5). Traditional activities in Suco Samalete

Theme	Discussions
Traditional activities	➢ **Hatun Feto (Dowry system):** This is a traditional ceremony which differs the community Samalete with other communities in the areas. The family from the groom side has to pay US $ 1000 and to offer several pieces of mixture gold ornaments, several bottles of liquor and a head of animal to the woman parents, untie and uncle and to the traditional/sacred house. This ceremony is led by elders from the bride side such as a guardian of sacred house and the brdie's elder uncle from her father side. After reached the conslusion, the man climb up onto the sacred house to see and take down the bride to the audience, which mainly comprised of relative and family of both sides. ➢ **Koremetan (Memorial ceremony for the dead)**: The community in Samalete is not considered this traditional ceremony as important as Lia Moris such as Hutun feto (Dowry System). The reason is that this ceremony does not restrict. In other words, they can give whatever they have to get tight up the relationship already existed. "Koremetan" is a memorial ceremony for the death of a family member. It is organized exactly one year after the death of the member. The family and relatives gather and execute such a memorial ceremony. ➢ **"Tara bandu" (Hang the prohibition):** At present, "Tara Bandu" is not in practice in suco Samalete. Tara Bandu is a traditional ban to protect natural resources as well as to control social activities and security in the community. In order to conduct the ceremony, a head of animal, such as cow, buffalo, or goat is sacrificed after praying to God (Lulic). An object, such as corn or timber, which is subject for the prohibition, is hanged on a tree. This means Tara Bandu is officially announced. The period of Tara Bandu is variable, depending on the object. Obviously it is effective for one year. Therefore, the ceremony shall be executed again if community members want to extend it. ➢ **"Servisu Hamutuk" (Collective work)**: This is a system introduced by the Indonesian government, which was called "Gotong Royong", where community members help each other especially in land preparation, harvesting time, construction of houses, and disaster or emergency events. ➢ **"Holo uma lulik" (Construction of sacred house)**: This is to construct a sacred house for executing the traditional ceremony and services. A house constructed and renovated in the dry season. During the construction of sacred house, family members from the clan gathered. This also good opportunity for them to know each other better as there are some new family members have increased as time passes by.
Problems in carrying out activities	➢ It was informed that many young generations do not pay respect any longer to the traditional ceremonies and activities. That is why the traditional ceremony, such as Tara Bandu, has been taken out from the common practices in the village. It was also mentioned that even the offender is taken to the police, the police can not inflict any punishment on the offender for a crime/violation due to lack of legal system to be provided by courts.
Solutions for the problems	➢ The representative of the community pointed out that it is necessary to revive Tara Bandu again as a mean to control natural resources, but also suggested that a legal system should be formulated by the government to assure the enforcement and effectiveness of such a traditional rule/regulation.

Appendix-G (1-6). Results of Wealth Ranking

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Criteria of Wealth ness</td><td>
➢ The following criteria were used for judging the wealth of the households in the village.
<table>
<tr><th>Category</th><th>Criteria</th></tr>
<tr><td>Rich</td><td>a household that: (This group may not be found in Samalete.)
- works as a high level of public servant and has a good house (Cement);
- has vehicles; motorbike, cars, etc.; and
- has a lot of money.</td></tr>
<tr><td>Sufficient</td><td>a household that:
- has some heads of cattle (pig, goat, cows, buffalo, chicken, horse, dog, etc);
- has a cement house (6x6 typed houses were build by the Indonesian government and NGOs.) (They earn money during 5-6 years before building a house);
- works as a teacher; and
- has about 3-4 ha of coffee plantations.</td></tr>
<tr><td>Poor</td><td>a household that:
- can not access to everything (education, health, money, etc.);
- can not produce food crops enough for consumption;
- has a member who is physically disadvantaged (sick, disable person, elder);
- has no parent (orphan);
- own cattle prone to be infected with pests/diseases; and
- has small size of coffee plantation.</td></tr>
</table>
➢ The participants consider that many villagers in Samalete are poor (There is no rich family in the village.).
➢ Coffee production is the main source of income.
➢ If the coffee production is low, the villager would grow vegetables to get alternative income to survive.
➢ In order to build a house, the villagers have to earn cash income from coffee production prior to buying materials for making a house.
➢ The average annual income for the sufficient is estimated US$ 200-400/annum (from selling coffee, crops and cattle).
➢ A villager who faces economic difficulty usually come to a teacher in the village to borrow some money.
➢ The proportion of each class in the suco is tabulated below.
<table>
<tr><th>Aldeia</th><th>Sufficient</th><th>Poor</th></tr>
<tr><td>Eraulun</td><td>50%</td><td>50%</td></tr>
<tr><td>Leburema</td><td>50%</td><td>50%</td></tr>
<tr><td>Aiurlalan</td><td>40%</td><td>60%</td></tr>
</table>
</td></tr>
<tr><td>School Attendance</td><td>
➢ The educational opportunities for children in the suco have been changed as described below.
1. Portuguese era:
- Many children were not able to go to school due to the limited number of school.
- Many villagers could not access to school due to financial constraints.
- There were only 3 persons who got education at primary level in Maliana, Soibada,and Aileu.
2. Indonesian era:
- Indonesian government opened a primary school in Samalete.
- People in Samalete started to send their children to school (up to senior high school). Many people were able to go to school during this era.
- Some families could not send their kids to the high levels of education due to
</td></tr>
</table>

Theme	Discussions
	economic conditions. 3. After independence - To send their children to school depends on the production of coffee (The community considers coffee a main source of income.). - There is only one primary school in the village. - Edmund Rice (NGO) is providing a scholarship for students to junior high school and university (2 kids per family).
Poor, Disable Person, elderly and orphans	➢ A close relative of the disable and elderly families usually works and feed them. ➢ If an elderly and/or disable person who has no children or close relative, some community members shall help them in working in the field. Then the production is given to a family of the poor, disable and elderly as assistance.
Issues/problem is faced by community	➢ The villagers in Samalete produce crops, fruits, and vegetables, but they can not access the market due to: - Lack of public transportation; - High public transport cost; and - Poor road condition (especially during the rainy season).

Appendix-G (1-7). Seasonal Calender of Activities related to Traditional Ceremonies and Crop Production (Suco Samalete)

NO	ACTIVITY	MONTH												Allotment of work		Problem	NOTE
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women		
A	**Production of annual crops**																- Coffee seedlings are taken from wild seedlings (wildlings) and grown. Height varies from 1m to 1.5m. All have grown successfully. Not all seedlings are transferred; some are left to grow after coffee tree have aged and need to be cut down. - The average coffee production is about 152 sacks (50-100 kg sacks, about 50% each size). Coffee is sold mainly in cherry form, since processing coffee is not easy for villagers due to the lack of water. - Shade tree seedlings are also taken from the wild, but its skin is easily damaged and then it does often not grow properly or dies out. So far, some seedlings have died and some still survive. The collected seedlings are wrapped with banana leaves. The average height of seedlings is about 0.50 cm. - The farmers have never attempted to establish a nursery due to the lack of water. Only during the Indonesian period and in 2004 they tried to make a nursery. - One farmer added that in the upcoming November, which is the onset of the rain season, they are planning to make a temporary (for a 3 months nursery) nursery. But it still depends on the amount of rainfall.
A-1	Land preparation (Slashing)													75	25		
A-2	Land preparation (Burning)													100			
A-3	Seed preparation (for corn and other upland crops)															' - Lack of corn seeds.	
A-4	Preparation of farm (permanent farm)																
A-5	Planting/Seeding (for corn and other upland crops)													50	50	- Delay or irregular rainfalls.	
A-6	Weeding (general farms)													50	50		
A-7	Harvesting (corn)													50	50	- Corn attacked by pest, insects and birds.	
A-8	Harvesting (Cassava and tubers)																
B	**Other Farming Activities**																
B-1	Planting seedlings of fruits (Banana, Coffee, Jackfruit, Mango, etc.)														+	- Lack of seedling or quality seeds	
B-2	Vegetable farming (baria (bitter gourd), tomato, sawi (Chinese cabbage?), lettuce, broccoli and onions)													60	40	- attacked by caterpillars.	
B-3	Harvesting & weeding (including coffee plantation)													50	50	- lack of pulping machine (manual)	
B-4	Harvesting (Mango)																
B-5	Harvesting (Orange)																
B-6	Harvesting (Jackfruit)																
C	**Other Economic Acitivites**																
C-1	Labor work at city/town													+	+		- Only about 5% of the villagers look for a casual labor or work outside the village during the rain season.

Seasonal Calender of Activities related to Harvesting Seasons of Major Agricultural Products (Suco Samalete)

NO	ACTIVITY	MONTH												Problem
		1	2	3	4	5	6	7	8	9	10	11	12	
D	**Agricultural Crops**													
D-1	Corn													- Shortage of rainfall
D-2	Cassava													- Shortage of rainfall
D-3	Banana													
D-4	Kontas													
D-5	Mango													
D-6	Vegetables													- Crop damage by caterpillar
D-7	Coffee													- Shortage of rainfall
D-8	Tua mutin													
D-9	Citrus													
D-10	Goat													- Animal diseases
D-11	Pig													- Same as above
D-12	Cows/Buffaloes													- Same as above
D-13	Chicken													- Same as above

Appendix-G (1-7). Seasonal Calender of Activities related to Humand and Animal Diseases

NO	ACTIVITY	MONTH												Allotment of work		Problem	Solution
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women		
E.	**Climatic condition and Natural Calamity**																
E-1	Rain	+++	+++	+++	+	+						+	+				
E-2	Forest fire													X	X	A big forest fire occurred on 6 October, started by uncontrolled burning. burning from 7am for about 5 hours. Fire damage 36 HH properties, about 45ha burnt, including 3 houses and a church. Fire stopped itself.	- Establishing fire break when burning
E-3	Landslide															One landslide occurred last year near the top of the village	
E-4	Food Shortage													X	X	Hunger season	
E-5	Shortage of water													X	X	Lack or no water during the dry season, trees and crops died.	
F.	**Human Disease**													X	X	- Mainly children suffered diarrhea.	
F-1	Diarrhea															- Also observed that several children in Samalete have bloated stomach, a sign of worm infestation	- Go to the clinic. But during Nov. & Dec. no doctors due to holiday season.
F-2	Malaria													X	X		
F-3	Cough and Flu													X	X		
G.	**Animal Disease**													X	X	- diarrhea then died suddenly	- The veterinarian comes to the village but only during non-sick period
G-1	Food Shortage for Animal																
G-2	Cow/Bufallo																
G-3	Goat																
G-4	Pig																
G-5	Chicken																

Appendix-G (1-8). Results of Trend Analysis

Topic	Discussions
Forest	**1950-74** ➢ Dense forest extendedly covered the area. ➢ The community cut down trees/forests to prepare their land for coffee plantation following an order from the Portuguese government. But actually they didn't plant coffee after cutting. ➢ There was not a high demand for timber. ➢ Timber was used as a material of fence for animal grazing. **1975-98** ➢ It was difficult to find timber wood because of an increase in population and intensive illegal cutting. **1999-2006** ➢ There is no dense forest in the Suco. ➢ There is no regulation/control on cutting trees using chain sows. So the villagers cut trees to plant shading trees for coffee plantation. But they need to wait for long time before planting coffee because it takes time for shading trees to grow up enough to plant coffee under them. **Other comments** ➢ Ai ru, Samtuku and Ai bubur were identified as main species in the Suco. ➢ It was mentioned that there has been lack of information or technical assistance regarding the causes of deforestation.
Coffee	**1950** ➢ The Portuguese government forced the community of Samalete to replace trees naturally grown in the village with Samutuku **1960** ➢ The villagers started to plant coffee on their own initiative. **1975** ➢ Most of coffee plantation were burned by the Indonesian army. **1980** ➢ The villagers started to plant coffee again. **1999** ➢ There was no significant change during the independence time. **Present** ➢ The villagers want to expand their coffee plantations to leave sufficient coffee plantations to their sons. **Other comments** ➢ Moca, Arabica and Robster are main species planted in the Suco. Moca was brought from Brazil and the others are local species.
Water	**Indonesian time** ➢ Available water resources were decreased due to the population increase. ➢ Some of villagers immigrated to another village because of the scarcity of water resource. ➢ There was assistance from Red Cross to rehabilitate the water source in the Aldeia Eraulo and to provide water to 74 households in the Aldeia.

Topic	Discussions
Water	**Present** ➢ Recently the availability of water has gotten scarce especially during the dry season. The villagers consider that it is an impact caused by deforestation and forest fire. Therefore they planted samutuku & Casuarina around the water sources. They also have interest in reforestation along the riverside. **Other comments** ➢ From the Portuguese time up to date, the community have faced the problem of scarcity of water. ➢ There are four water sources in the village, which are located at Maucledo, Eraulun, Kadahatu and Asarfun. The owners of the four water sources are Mr. Antonio Piedade (for Maucredo), Mr. Maulaka and Mr. Cristiano (for Eraulo), Mr. Alarico Piedade (for Kadahatu), and Mr. Estevao Ximenes (for Asarfun), respectively. ➢ The water source in Maukledo (Aldeia Leburema) is being rehabilitated. ➢ In Asarfun, Aldeia Ai Uralan, the villagers use the water source for drinking and washing but the access to the source is not good because it is located at the foot of a hill.
Grazing	**1950-74** ➢ Free grazing was commonly practiced. **1975-98** ➢ The villagers did not practice free grazing since animals/cattle should be kept in a plot fenced around.

Appendix-G (1-8). Topics related to production and marketing of Coffee

Topic	Discussions
Process of production	Plantation establishment: ➢ Cut grasses, cultivate lands around trees, and plant quality seedlings. Harvest: ➢ They can immediately sell the red beans/cherries to buyers or process (pulp, wash and dry) cherries into perchments before selling. ➢ Sell the products at the market or buyers who come to the community. ➢ It was also mentioned by the participants that there have been no technical assistant to improve skills on coffee plantation. ➢ It was confirmed that all the lands in Suco are private and the average size of each coffee plantation is 0.5 – 2.0 ha/household.
Market	➢ Buyers from CCT come to the Suco to buy the products.

Appendix-G (1-9) Current Uses on Resources in Suco Samalete Female Group

Topic	Discussions
Water resources	➢ Water is used for drinking, taking a bath, cooking and washing. ➢ Water accessibility in the suco is quite limited especially in the dry season (from July to November). The villagers consider deforestation is one of the causes of water shortage. ➢ There are some water tanks along the road and one of them is used by manually pumping up water from streams to the tank.
Other natural resources	**Trees** ➢ Main species are Ai na (Pterocarpus indicas) and Ai seria (Toona Surene). ➢ Trees are planted in private lands. ➢ When the villagers want to cut trees in other's land, they need to ask permission to cut trees from the land owners in coordination of chef de suco. ➢ Normally the villagers cut trees in August to meet the demand for materials of construction, because they are not busy with farming activities and also cannot get income from agricultural crops during the dry season. ➢ The price of Ai na and Ai seria is \$100/m^3, which is higher than that of other species. ➢ Ai na and Ai seria are sold just inside suco in the form of logs or some processed goods such as chairs and tables. In case of selling them outside the village, it is necessary to obtain the permission of chef de suco. **Fuelwood** ➢ Main species of trees used for firewood are Ai ru (Eucariptus) and Ai Samtuku (Albizia). ➢ The villagers collect 1 bundle of firewood every day just for own consumption. They collect firewood only from dead trees to avoid cutting living trees. The participants are apparently aware of the importance of trees on water conservation and prevention of landslides.
Agricultural resources	**Corn Farm/Corn** ➢ Every family has about 1,600 m2 (40m x 40 m) of corn farm on average. In general, corn farms aren't located near their houses. ➢ Those who have relatively large size of land can sell and lease their land only to the person within the suco. ➢ All lands are privately owned. ➢ Production of corn is estimated at 50-100 bundles/year on large farm or 20 bundles/year on small farm. ➢ Corn is harvested for own consumption. If there any surplus, it would sold or bartered with other crops and vegetables. **Coffee** ➢ After harvesting, coffee is processed using a manual pulping machine. If a villager does not have the machine, he/she will rent it from another villager who won the mashine with \$40 /time. ➢ The price of coffee is \$0.25/kg for cherry and \$1.50/kg for parchment at the suco. It becomes \$ 1.75/kg for parchment at dili. ➢ The villagers cut four to five old shade trees every year for maintenance of coffee plantation. ➢ The income from coffee is used for education expense for children. **Fruits and Vegetables** ➢ Papaya, banana and mango are main fruits grown in the suco. ➢ Main cropped vegetables are mustard, beans, tomato and eggplant.

Topic	Discussions
	➢ MAF provides 6 groups of farmers with seeds of fruits and vegetables. ➢ Some villagers prefer to work individually to cultivate vegetables every year. ➢ Villagers prepare terraces to plant vegetables. ➢ Vegetables are cultivated mainly at private land in Aldeia 1 and 2 where water resource is available. Vegetables are sold inside suco and at the markets in Aileu and Ermera. But it is difficult to get transportation between the suco and the markets because there is no public transportation service coming to the suco. ➢ MAF provided extension services in 2006 on following subjects; terrace preparation, planting and management of crops. ➢ MAF also implemented extension services in 2007 and supplied the community with farm tools/inputs such as shovels, hoes and fertilizer. ➢ After harvesting, villagers stock the seeds for next planting period.
NTFP **NTFP**	**<u>Tua Metan</u>** ➢ Its average production is 5 liters/day. It takes 2 weeks to obtain Tua Mutin from palm trees. Palm trees are located at approximately 1.5 km from their houses. ➢ Its price is $1/bottle. ➢ The participants pointed out that people who get drunk with Tua Mutin tend to make problems. **<u>Honey</u>** ➢ There is no significant production in the Suco. ➢ Villagers are afraid from being stung by bees in harvesting.
Livestock	➢ Livestock in the suco are goats, cows, pigs and chickens. ➢ Animals are sold inside suco and at the markets in Gleno, Railaco and Aileu. ➢ Some villagers keep their animals tethered to trees and others practice free grazing. ➢ There is less land for animal grazing. ➢ The villagers make fences for cows. ➢ They feed animals on elephant grass, banana leaves and cassava sticks. ➢ The villagers collect grasses from other sucos without any permission with land owners. ➢ Animals are usually raised near the houses at a distance of 20-30m. ➢ If animals enter other villager's land, the land owner can kill animals or ask for the owner of animal to pay compensation for the crop damage. In case that the owner of animal take no measure though the land owner claims for damage to him 3 times, the land owner can kill animal and ask chefe de suco to mediate their dispute.

Appendix-G (1-10). Current Uses on Resources in Suco Samalete Male Group

Availability of Land

- There is no landless farmer/villager in Suco Samalete. All the lands in the village are clearly distributed to the households in the village. Every household has about 2 plots of land for shifting cultivation and a permanent farm/garden near their houses. The estimated holding size is about 2 ha/HH.
- However, the productivity of land (quality of land) is not good in general. Therefore, many households need to use their lands in turn practicing a slash and burn (shifting cultivation) farming method. After harvest, the fallow land is left for about 4-5 years to be fertilized again naturally. Fertility of the land are judged by the surface vegetation covered with the area.
- A foreigner can come to live in the village and ask the villagers to use their lands for food production. He/She can plant food/annual crops but not permanent trees. 'Lease term' is about 1 year in general. Sometimes both parties (the tenant and the owner) may go into an agreement where the tenant is required to make in-kind payment using part of the harvest, but in many cases the land is used without charge.
- The land is inherited to the male line (or inherited patrilineally), as male is considered as the landlord or not 'married out', while daughters are considered to be married out to another male landowner. Daughter can be given part of the land to cultivate if she together with her husband returns to her home town.
- Forestland is not public land, and if anything, it is already divided between/among villagers since ancestor's times. Landowners can cut trees in their own land. The person who is not the owner of the land needs to get permission to cut trees in other owner's land. Firewood is collected from the forest and farm, but not cutting from trees. There is no government land in Samalete.

Water resources

- Water is considered the most important source of life because it is used for drinking, showering, cleaning and planting. It was considered that women must use more water.
- Water is used for watering vegetable farms and for coffee processing. But using water for coffee processing needs lots of water.
- The availability of water in Samalete had reduced greatly.

Other natural resources

- Tree seedlings, such sandalwood, teakwood and shade trees were produced by making a nursery in the Indonesian period. It was introduced but not continued by the community.
- The forest resources available in the village were identified as follows:

No.	Name	Who collect	Usage		Reason
			Self use	Sell	
1	Ai Ru	MF	x		building materials, no demand if sell
2	Ai Saria	MF	x		building materials, no demand if sell
3	Aidila Fatuk (wild Papaya)				
4	Ai Hanek				
5	Tamarind				
6	Tua Metan	MF		x	Good price for selling
7	Has Fuik (Wild Mango)				
8	Dut Nalo (Alang-alang)	MF	x		building materials, no demand if sell
9	Ai Kulat				
10	Honey				
11	Ai Bubur				
12	Ai Na	MF	x		building materials, no demand if sell
13	Ai Kameli (Sandalwood)				
14	Rotan	MF	x		building materials, no demand if sell
15	Kiar (Hazel Nut)	MF	x		Hazel nut oil for church ceremony, wax for violin string.

Agricultural resources

Important resources in suco were identified as below:

- Coffee
- Cow/buffalo
- Chicken
- Goat (local and *malae*)
- Fruits (coconut, pineapple, mango, citrus, banana)
- Cassava and tubers (*talas*, potato, *kumbili, kontas* and *maek*)

Topic	Discussions
	- Vegetables (tomatoes, bitter gourd, pumpkin cucumber, pigeon pea and cow pea.) - Betel nut (betel leave and areca nut) and *ailia* (ginger) - Corn - Pig - Peanuts and beans - *Tua mutin* - Bamboo (*fafulu* (small bamboo), *Au Betun* (giant bamboo), *Auora* (bamboo strips). Handwoven products: *Biti* (mat), *Bote* (back carry container), *Lafatik* (container) ➢ Coffee is considered the most important source of income currently, the money from selling coffee pays for school fees and building houses (building materials). ➢ Cow pea is one of the main sources of income from vegetable farming. Farmers received the seeds from Indonesian period in 1992 and from an NGO funded by AusAID in 2006. ➢ Corn is grown in shifting cultivation plot and harvested for self consumption as well as selling. Corn is also utilized for animal feed (chicken). ➢ Vegetables (tomatoes, bitter gourd, pumpkin, cucumber, ginger, chili, pigeon pea and cow pea) are cultivated mainly in vegetable farms near water sources. Vegetables are for own consumption and selling. ➢ Fruit trees (coconut, pineapple, mango, citrus, banana, avocado, etc.) are grown in permanent farms near water sources and some are planted in shifting cultivation plots. Mainly for own consumption and selling. ➢ Root crops, such as cassava and tubers (talas, potato, kumbili, kontas and maek) are cultivated for consumption and selling. Some were used for animal feed. ➢ Peanuts and beans are grown for own consumption and selling.
NTFP	➢ Tua Metan is utilized to make the traditional palm wine Tua Mutin. Parts of the trees are utilized to make broom, roofing materials, building materials, etc. These are sold for income generation. ➢ Betel vine and Areca nut are harvested for consumption and selling for the betel nut chew. It is considered one of the main income generations for the villagers. Some grow in the wild and some are planted. ➢ Bamboo is utilized for building materials and other usages. Types of utilized bamboo species are fafulu (small bamboo), Au Betun (giant bamboo), and Auora (bamboo strips) which are mixed with the leaves of Akadiru to make handwoven products such as Biti (mat), Bote (basket) and lafatik (container). ➢ Forest trees such as Ai Ru, Ai Saria and Ai Na are cut and utilized for building materials in the village, but not for selling. ➢ Rotan or rattan collected for building materials, for self use but not for selling. ➢ Wild fruits grown in the forest and are collected for consumption, such as tamarind, Aidila Fatuk (Rock Papaya) and Has Fuik (Wild Mango). ➢ *Dut Nalo (Alang-alang)* a type of wild and tall grass utilized for roofing materials of village huts. It is used only for self use but not for selling. ➢ Kiar (Hazel nut) with the seeds utilized for making it into oil form (use in church ceremony) and wax form for lubricant of violin string.
Wild Animals	➢ No wild animal is utilized.
Livestock	➢ Cattle (cow and buffalo) are currently the top income generation from livestock. Cattle are sold within the village at approx. U$ 175/head, to outside the village at about U$200-300/head. ➢ Pig, goat and chicken are also for consumption and selling for income generation.

Topic	Discussions
	➢ Horse is utilized privately but not for salling. ➢ Dogs are sometimes consumed on a specific occasion but not for selling.
Others	**<u>Coffee Plantation and marketing</u>** ➢ Both men and women clean coffee plantations. During harvest season, family members (men, women and children) pick coffee cherries. Coffee processing depends on the availability of water. Cherries are sold to CCT (NCBA), while parchment is sold to Timor Global. Parchment sometimes sold in Dili. Coffee companies such as CCT (NCBA) and Timor Global often comes to Samalete during the harvest season. IDO (Korean Co.) comes also but only sometimes. **<u>Price of products and Access to the markets</u>**

No.	Name	Price	Gender	Sell location	Frequency	Mean	Container
1	Chicken	$10 / cock	MF	Aileu, Dili	1 - 2 / week	walking	carry
2	Corn	$10-12/sack	MF	Aileu, Dili	1 mth in a year	walking	sack
3	Nuts	$5 / sack	MF	Aileu, Dili	1 / week	walking	sack
4	Tua Mutin	$10/jug	MF	Aileu	weekly	walking	jug
5	Fruits	$10/sack	MF	Aileu, Dili	1 / mth	walking	sack
6	Malus, Ailia	$5/sack	MF	Aileu	1 / mth	walking	sack
7	Cassava	$2/sack	M	Aileu	-	-	-
8	Vegetable (Tomatoes)	$1/basket	MF	Aieu, Dili	weekly	-	-
9	Peanuts	$10/sack	MF	Aileu	weekly	-	-

Appendix-G (1-11). Results of Group Discussion with Male Participants about Resource Use and Potential Resources for Livelihood Development

Theme

Discussions

Important agricultural and natural resources

- Agricultural products and livestock in suco are listed and evaluated based on the importance to the community by considering its volume of harvest, harvest period, processing period and work load as tabulated below.

No.	Agricultural Resources	Usage		Harvest amount/result	Harvest / production rate	Consumption			Total
		Self Use	Sell			Time	Energy	Gender	
1	Coffee	X	X	5	4	1	1	MF	11
2	Coconut	X	X	1	1	1	1	M	4
3	Betel nut	X	X	3	1	2	1	M	7
4	Citrus	X	X	3	1	2	1	MF	7
5	Banana	X	X	2	2	2	1	MF	7
6	Pineapple	X	X	2	3	2	1	MF	8
7	Daun Sirih (for betel nut)	X	X	1	4	1	2	MF	8
8	Cassava	X	X	2	2	2	1	MF	7
9	Talas	X	-	2	3	2	1	MF	8
10	Potato	X	X	2	3	2	1	MF	8
11	Bitter gourd	X	X	4	1	1	1	MF	7
12	Chilli	X	X	4	1	1	1	MF	7
13	Jackfruit	X	X	1	3	2	1	M	7
14	Mango	X	X	1	3	2	1	MF	7
15	Ailia (ginger)	X	X	1	3	2	2	F	8
16	Tua Mutin (Tua Metan)	X	X	1	3	1	1	M	6
17	Avocado	X	X	1	3	1	2	M	7
18	Cow pea	X	X	3	4	1	1	MF	9
19	Pigeon Pea	X	X	1	3	2	1	MF	7
20	Peanut	X	X	1	3	2	1	MF	7
21	Corn	X	X	1	3	2	1	MF	7
22	Beans	X	-	1	3	2	1	MF	7

No.	Livestock	Usage		Production amount	Production rate	Consumption			Total
		Self Use	Sell			Time	Energy	Gender	
1	Cow	X	X	1	3	2	1	MF	7
2	Horse	X	-	1	3	2	1	MFC	7
3	Goat	X	X	1	3	2	1	MFC	7
3	Pig	X	X	1	3	2	1	MFC	7
4	Chicken	X	X	1	1	2	1	MFC	5

Ranking values:

I. Harvest amount / results

No.	Definitions
5	Lots / abundant
4	Many
3	Medium / average
2	Not much
1	Very less / little bit

II. Harvest / production rate

No.	Definitions
4	monthly
3	>6 months to a year
2	6 months ~ 1 year
1	< 6 months ~ 1 year

III. Processing period (time)

1	Long labor time required
2	short time

IV. Processing energy

1	Large amount of force/energy
2	Small amount of force/energy

- According to the scoring, Coffee, Cow Peas, Cattle, Buffalo and Betel Nut were selected as the five most important resources/products.

Current practices in marketing major commodities

- Major players in marketing of the commodities in suco are summarized as below.

Commodities	Main Buyers (Marketing Outlets)	Place of sale
Coffee	CCT, Timor Global	3 aldeias of suco
Cow peas	Sold at Aileu, Railako Kota and Dili markets	3 aldeias of suco
Cows & buffaloes	Sold within the village Sold to outside of the village.	3 aldeias of suco
Betel Nut	Sold at Aileu, Gleno, Railako Kota and Dili markets	3 aldeias of suco

- Market flow of commodities:

Coffee

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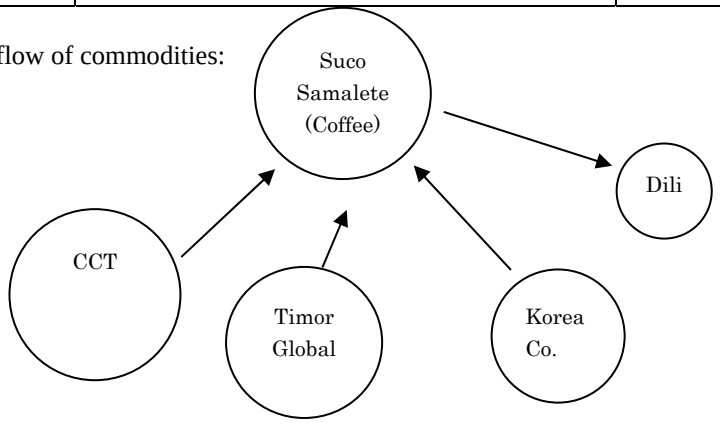
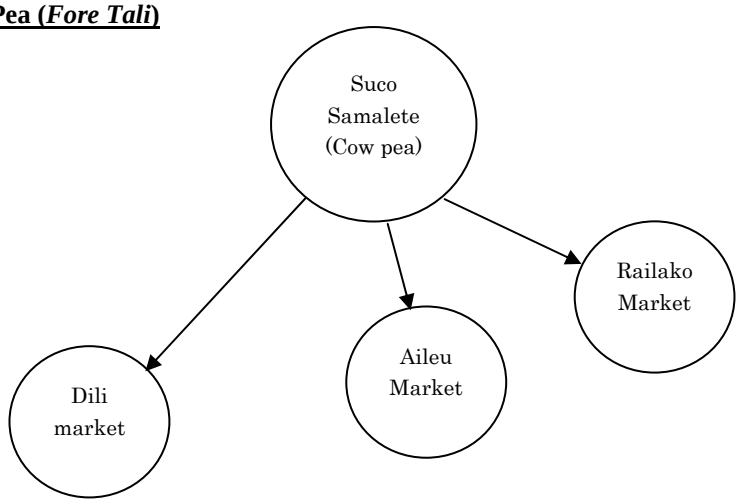
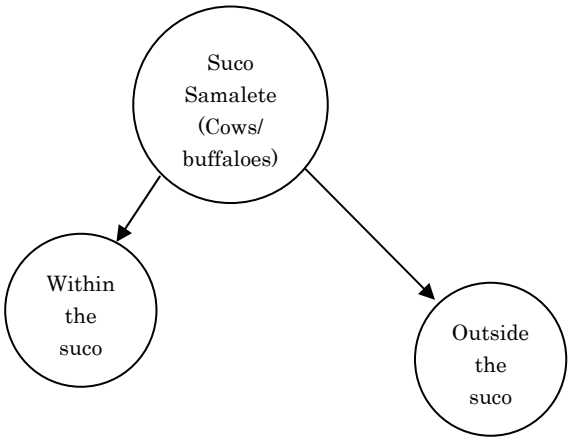
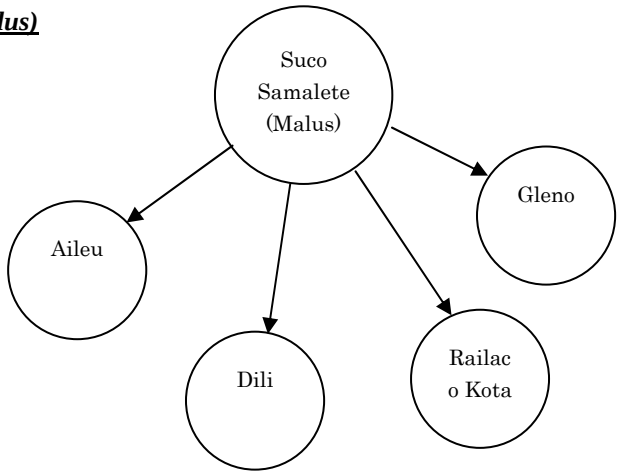


Theme	Discussions
	- During the coffee harvesting season, companies such as CCT and Timor Global often come to the village to buy red cherries and parchment. They come almost daily during the peak season. A Korean company als comes to the village sometimes. Some farmers would bring their harvest to Dili to sell, but most of them sell coffee to CCT and Timor Global because they come to the village. - The price of coffee red cherry is about U$ 0.25 – 0.30 /kg and that of parchment is about U$ 1.40 – 1.50 /kg. Price sometimes varies among aldeias in Samalete by US$ 0.10/kg. Farmers mainly sells cherry because it is difficult to process it into parchment due to lacks of water and equipment. 50kg and 100kg sacks are used to transport the coffee harvest. - The farmers of Samalete are not members of CCT. CCT and Timor Global just come to buy coffee but have never provided any training or assistance other than buying their coffee. Government or MAFF also hasn't come to provide any training about coffee cultivation. - Manual pulping machines are produced in Samalete village. Only 2 tradesmen are able to make the simple machine and sell it for about U$ 100/unit. - The villagers in Samalete have never established any coffee nursery, but only transplanted wild seedlings collected from coffee farms. They cut down some aged coffee trees and let the surrounding seedlings to grow. They think that low harvest is due to aged coffee trees. New coffee trees will start producing in about 10 years time. - Difficulties faced by the farmers in coffee cultivation are the lack of processing equipment such as pulping machine, lack of information on coffee market price and no fixed location for transporting coffee (in Samalete village). - Average income generated from coffee is about U$ 15-20 / week, which is approx. U$ 150 – 200 in total for 3 months harvest season (May, June and July). **<u>Cow Pea (*Fore Tali*)</u>**  - Fore tali or cow peas takes about 3 – 4 months to harvest annually. It is one of the main vegetables that generate income for the farmers in Samalete. - The farmers carry their harvest to the main road and catch the public transportation to Aileu Market paying a total of US$ 1.50 (US$ 1.0/person and US$ 0.5/sack) for one way. - Cowpeas are bundled together and sold for U$ 0.10/bundle. Average volume per farmer is about 50 bundles, totaling to about U$ 5. Cowpeas are sold at the local market on the bazaar days (twice a week). If lots of farmers from Samalete went to the same bazaar day, some farmers might bring back their cowpeas. Usually all are sold on the same day. - Seeds of cowpeas were first introduced during the Indonesian period in 1992. Three farmers groups were formed in the 3 aldeias and provided with seeds of cowpeas. In 2006, one NGO funded by AusAID together with MAFF provided some agriculture tools and cow peas seeds with other vegetable seeds to the farmers groups of about 70 HH. The groups were formed to receive the materias and then most of the members are now

Theme	Discussions
	inactive or not interested due to the lack of water to cultivate the vegetables. According to the participants, the quality of the seeds introduced in 2006 was the same type of cowpeas given during the Indonesian times. - Farmers have difficulties in obtaining quality vegetable seedlings. Current seeds are collected form some part of the harvests. Lack of water also makes vegetable farming difficult since water needs to be redirected with bamboo guide from a spring to the farm. The distance of the bamboo guide is about 1 km in some cases. **Cows / buffaloes**  - Farmers in Samalete own over 100 cows and buffaloes, which are considered important animals and have high value for income generation. They are sold alive or killed and as meat per kg. In the village the price is about U$ 175/head alive. If they are sold outside the village, it is about U$ 200 – 300 / head alive. Usually they are sold when cash is needed. - The main problem with livestock is the diseases, not only diseases of cows or buffalos, but also of goat and chicken. A veterinarian does not often come to the village. - Main feed for cows and buffaloes are the elephant grass (rumput gajah) and other green feed such as banana leaves and other forage. The animals are usually kept near the rivers, springs and farms during the dry season. **Betel nut *(Malus)***  - Buah Malus or chewing tobacco consists of betel leaves (daun sirih/malus), areca/betel nut (buah) and lime powder. Samalete produces betel leaves and areca nut and sells them to the local markets/bazaar in Aileu, Gleno, Railako Kota and Dili. - The betel plants have existed since the Portuguese times. Usually the vines and trees are planted by men and then maintained by female. Men often harvest the betel nuts as they are tall trees to climb. - The betel leaves are shaded in two colors, the whiter leaves are caused by direct sunlight exposure during growing and the darker or black leaves are not exposed to direct sunlight.

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td></td><td>
The betel leaves can be harvested weekly.
- Further marketing information of Buah Malus is tabulated as follows.

<table>
<tr><th>No.</th><th>Location</th><th>Days</th><th>Price of Betel nuts</th><th>Remark</th></tr>
<tr><td>1</td><td>Aileu</td><td>Wednesday & Saturday (MF)</td><td>U$0.10-0.15 /bundle</td><td>Buy sugar and salt on the way from the market.</td></tr>
<tr><td>2</td><td>Gleno</td><td>-</td><td>U$ 0.45/bundle</td><td>Income out of this product is around US $ 11.25,00 per week
Average sold 25 bundles.</td></tr>
<tr><td>3</td><td>Railako Kota</td><td>Tuesday (MF)</td><td>U$ 0.10/bundle</td><td>Average sold 35 bundles.</td></tr>
<tr><td>4</td><td>Dili</td><td>All week (MF)</td><td>U$ 0.25/bundle</td><td>Average sold 25 bundles. Return by daily goods.</td></tr>
</table>

- Shortage of betel leave in the three markets occurred during September up to November. Thus, in this period the price of betel leave can go up to 0.15 cent/bundle.
</td></tr>
<tr><td>Problems/Issues in Marketing</td><td>
➢ Existence of competitors (There are many products in the market when they sell their produce.) in marketing vegetables, cassava, citrus, mango, pineapple, jackfruit, banana, etc.
➢ High transportation cost (Because of high transportation cost and low selling price, they do not gain any profit or lose by selling their products.)
➢ Poor accessibility (because of lack of transportation facilities and poor road condition)
➢ Lack of quality vegetable seeds, processing equipment for coffee, and information on coffee market price.
</td></tr>
<tr><td>Transportation cost</td><td>
<table>
<tr><th>Start - End</th><th>Means <1</th><th>Cost</th><th>Remarks</th></tr>
<tr><td>Leborema - Aileu</td><td>Public bus</td><td>U$ 1 / person
U$ 0.50/sack</td><td>2 – 4 hrs walking</td></tr>
<tr><td>Samalete - Gleno</td><td>on foot</td><td>none</td><td>4 hours walking</td></tr>
<tr><td>Samalete – Railako Kota</td><td>On foot</td><td>none</td><td>2.5 hours walking</td></tr>
<tr><td>Samalete - Dili</td><td>On foot</td><td>none</td><td>2 – 4 hours walking</td></tr>
</table>
</td></tr>
<tr><td>Others</td><td>
➢ There is no other collective form for marketing agriculture products in the village as well as no people come to buy their product in the village
➢ Income from marketing of their agriculture products are utilized to buy various kinds of basic/daily needs such as cooking oil, salt, kerosene, sugar, rice, etc.
➢ Some participants pointed out that they went to sell their agriculture products including betel leave, only when they need some money to buy some things or to do some activities.
</td></tr>
</table>

Appendix-G (1-12). Available Resources in Samalete

Available resources	Season	Places of Collection/Harvest	Difficulties in collection	Practices/Customs	Remarks
Coffee	July ~ September	* There are about 18-22ha of coffee plantation in Samalete, in which about 95% of the farmers grow coffee.		Practices ➢ Men, women and children weed/clean coffee plantations and harvest (pick up) red cherries during the harvest season.	- Farmers plant wildlings (wild seedlings naturally grown in coffee plantation)for replanting.
Cow Peas *(Fore Tali)*	June ~ July (every 4 months harvest)	• Produced mainly near water sources.		none	- Farmers obtained seeds from the Indonesian government in 1992 and from an NGO and MAFF in 2006.
Cows and Buffaloes	All year round			Practices * Tying cows & buffaloes to a tree near river, water sources during the dry season.	
Betel Nut *(Malus)*		Forest and permanent farms	* Danger of falling from tree while climbing	Practices * Using a small rope loop to climb a Buah Tree (Beetle Nut)	
Tua Mutin	All year round	Forest and plots for shifting cultivation	Accidents (Collectors may fall down from tua metan.)	Custom: ➢ Put a bamboo container at a branch/bunch of tua metan. ➢ Leave sap of tua mutin seep out until the bamboo container is full with sap (for about 7 days).	Other parts of the trees are use for making broom head, hand-woven crafts, and building materials.
Fruits (pineapple, banana, citrus, mango, jackfruits, avocado, etc.)	All year round	Forest, permanent farms and plots for shifting cultivation	* Danger of falling from tree while climbing * Limited availability		
Cassava and tubers (talas, maek, kumbili, etc.)	Jan. ~ Apr.	Permanent farms and plots for shifting cultivation	Limited availability		
Vegetables (lettuce, cabbages, bitter gourd, etc.)	June ~ July	Vegetable garden and permanent farm			
Ai Ru, Ai Saria, Ai Na, Rotan, Dut Nalo (alang2)	All year round	Forest and plots for shifting cultivation	Limited availability		
Hazel Nut, wild papaya, wild mango	All year round	Forest and plots for shifting cultivation	Limited availability		

Appendix-G (1-13) Results of Group Discussion with Female Participants about Potential Resources for Livelihood Development

List of major resources/ agricultural products important for livelihood development

- Important resources and products for their livelihoods are listed below.
  Coffee, Vegetables, Banana, Jackfruit, Coconut, Orange, Cassava, Maize, Pumpkins, Sweet potato, Bittle Nut, Taro, Papaya and Mango were identified.

Agriculture/Natural Resources	Resources uses				Farm Activity		
	Domestic	Sell	Product	Distribution of Product/Year	Time	Labor	Total ranking
Coffee	Consume	Sell	4	1	1	1	7
Banana	Consume	Sell	3	4	3	2	11
Jack Fruits	Consume	Sell	4	4	1	2	11
Coconuts	Consume	Sell	4	2	1	2	9
Orange	Consume	Sell	2	3	2	2	10
Cassavas	Consume	Sell	2	4	1	2	8
Maize	Consume	Sell	4	2	1	2	11
Pumpkins (Japan)	Consume	Sell	4	1	1	3	8
Sweet Potatoes	Consume	Sell	4	2	1	2	9
Betel Nuts	Consume	Sell	4	2	1	2	10
Taro	Consume	Sell	4	1	2	2	10
Papaya	Consume	Sell	2	4	1	2	8
Mangos	Consume	Sell	4	1	2	2	8
Pumpkins	Consume	Sell	1	4	2	2	9

- From the above potential resources and agriculture products, they further selected six most important resources or agriculture products. The six most important resources/products are: Coffee, Orange, Vegetables, Bananas, Battle nut and papaya.

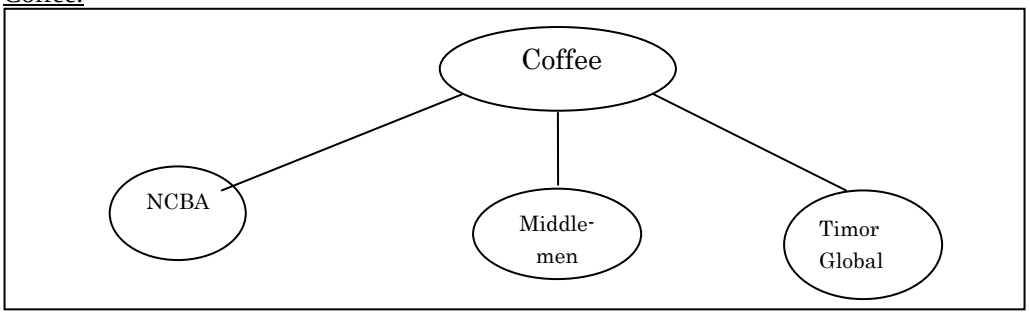
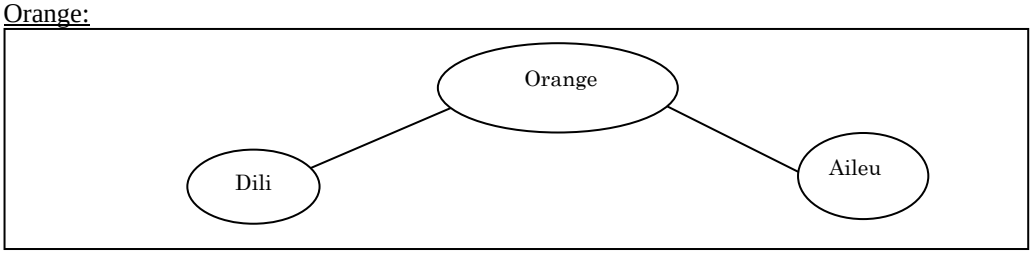
Agriculture Resources	Where to sell	Who do the activity
Coffee	NCBA, Timor Global, Middle Man	Man and Woman
Oranges	Aileu and Dili	Man and Woman
Vegetables	Dili, Aileu, Railaco Leten, Samaleten	Man and Woman
Bananas	Aileu and Railaco Leten	Man and Woman
Betel nuts	Aileu and Railaco Leten	Man and Woman
Papayas	Aileu and Railaco Leten	Man and Woman

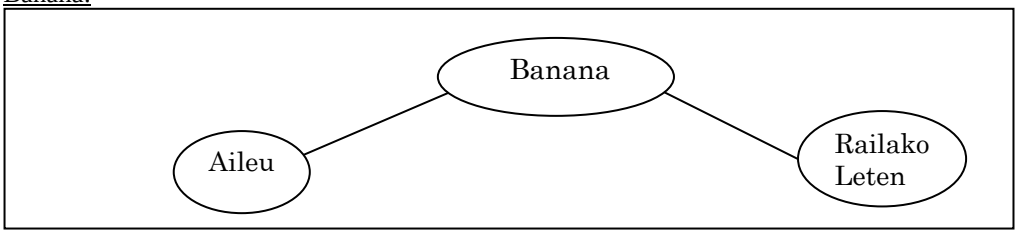
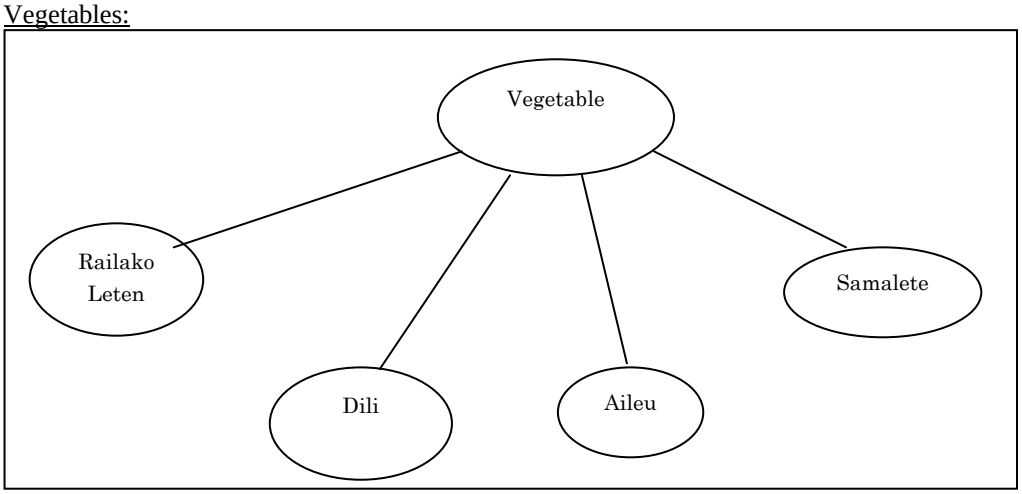
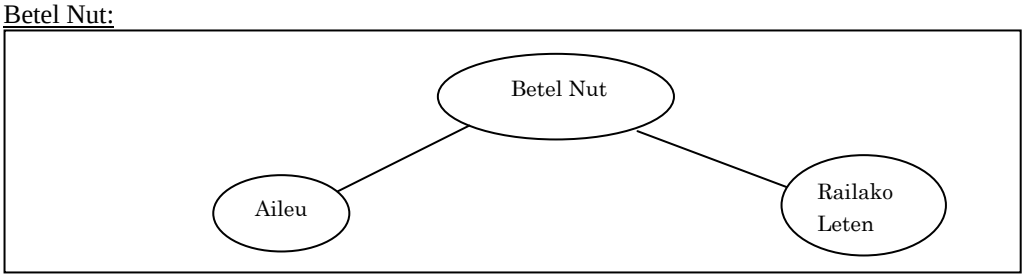
- Those resources are mainly use for both domestic and marketing proposes.
- In regard to labor requirement, both man and woman including children are involved in farming activities.

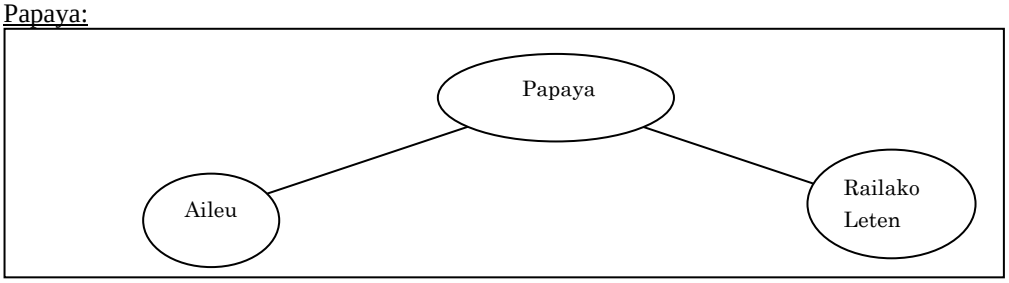
Current practices in marketing major commodities

Resources	Major Buyers
Coffee	NCBA, Timor Global and Middle Man
Oranges	Aileu and Dili market
Vegetables	Dili, Railaku Leten, Aileu and Samalete
Banana	Aileu and Railaku Leten
Betel Nut	Railaku Leten and Aileu
Papaya	Railaku leten and Aileu

- Coffee, oranges and betel nut are the major cash crops, which are perennial, while other products, such as vegetables, bananas and papaya, are also potential agriculture products which can give income many a time.
- Coffee and vegetables are sold outside and inside the village, while other products, such as

	orange, bananas, betel nut and papaya, are sold outside the village. ➢ The following sections show the marketing flows of the major agricultural commodities.
Coffee	Coffee:  ➢ In the marketing flow of coffee, NCBA, Timor Global and middlemen are the main players. Coffee harvesting period in Samalete is from June/July to August/September. During this period those market players come to and buy coffee in Samalete. ➢ NCBA purchase both cherry and parchment at US$0.25 cent/kg and US$1.50/kg, respectively. NCBA is not strict about the quality of coffee. However, Coffee farmers have to bring their coffee up to the road side for transaction with NCBA since NCBA does not buy coffee at the respective farmers' houses. ➢ There are two local middlemen working in Suco Samalete. The middlemen only buy parchments at US$ 1.40/kg. They go directly to the houses of coffee farmers and buy mixed coffee beans since they are not strict about the quality of beans. ➢ Timor Global does not collect coffee at the respective houses. Hence, the farmers need to put coffee along the road side or bring to Railaco for trading. Timor Global buy parchments twice a week during harvesting season. The price of parchment is US$ 2.0/kg. As Timor Global is very strict about the quality, it will buy only parchments of good quality. ➢ The community seem to consider the middlemen useful than NCBA and Timor Global since middlemen come to buy coffee directly at farmers' houses. The price offered by the middlemen is about the same with that of NCBA. Furthermore, the middlemen is not strict about coffee quality like NCBA. Even though Timor Global buy parchments with good price, the farmers need to do more work to assure the quality of coffee. Therefore, the farmers considers that the additional burden are required to meet the requirement given by Timor Global.
Orange	Orange:  ➢ There are two major marketing outlets for this product, which are Dili and Aileu. However, in order to sell their product to market in Aileu the community members must walk about 1.5 hours to the intersection of "Aileu to Gleno" to get public transportation. The transportation cost is US$ 0.50/person for one way and the cost for products that they bring is US$ 0.50/pack. The market in Aileu is open twice a week. The average income that community members get from marketing orange is around US$ 5.0/pack depending on how many packs they can bring to market. ➢ In order to market the products in Dili, the community members must walk around 4 hours for two ways (going and coming back). However, they considered selling orange to the

	markets in Dili is more profitable. The average income that community members get from marketing orange in various markets in Dili is around US $ 6.00/pack depending on how many packs they can take to the markets. The price of orange in Dili is US$ 0.10/4 pcs, which is higher than that in Aileu (US$ 0.10/5 pcs).
Banana	Banana:  ➢ Aileu and Railaco Leten are the major marketing outlets of banana. Banana is considered as an agriculture product that is available throughout the year. As there are various kinds of banana, the price ranges between 0.30 up to 0.50 cent/ bunch. ➢ To sell this product to market in Aileu, the community members go to Aileu taking public transportation from the intersection (Aileu/Gleno) once a week. Banana price in Aileu is US$ 0.25/bunch. In order to sell banana to the market in Railaco Leten, the community members have to walk to Railaco Leten once a week. The price of banana in the market in Railaco Leten is US$ 0.20/bunch.
Vegetables	Vegetables:  ➢ There are four marketing outlets available for vegetables, namely, Railako Leten, Dili, Aileu and Samalete. The price of one bunch of vegetable (mustard) is US$ 0.25 in Samalete, Railako Leten and various markets in Dili. However, the price in Aileu ranges from US$ 0.05 to 0.25. In overall, income from marketing of vegetables amount to about US$ 400. Many community members prefer to sell vegetables to the markets in Dili because there are many markets as well as middlemen available and there is no additional expenses required for transportation as they can walk to Dili.
Betel Nut	Betel Nut:  ➢ Aileu and Railaku Leten are the main markets for betel nut. The harvesting period of betel

	nut is June and July. During the harvesting season, the price of betel nut is US$ 0.1 for a set of nuts (12 pieces). One big bunch of betel nut can hold about 120 pieces of nut. If it is dried well, betel nut can be stored for one year. During the shortage of bittle nut (September –October), the prices in the markets can rise up to US$ 0.25/set.
Papaya	Papaya:  ➢ The community members sell papaya twice a month at either Aileu or Railaco Leten. They sell mature and immature fruits as well as papaya leaves. Except for mature papaya, there is no difference in price of papaya between the two markets. Mature papaya is sold at US$ 0.5/pc in Aileu but US$ 0.25/pc in Railaco Leten. The price of immature papaya and leaves is US$ 1.0/basket at the two markets.
Problems/Issues in Marketing	➢ Lack of transportation: The community need to walk about 4 hours to Dili and 1.5 hours to Railaco Leten. When they go to Aileu, they need to walk about 1.5 hours to the intersection between Aileu and Gleno to get public transportation to Aileu. ➢ Poor road condition: There is no vehicle to get to the village especially during the rainy season. ➢ Lack of storage: There is no coffee storage/warehouse provided by coffee buyers to facilitate coffee transaction in the village. ➢ Lack of skill: The community members have no skill to generate alternative income through adding values to their agriculture products. ➢ Existence of competitors: The community members pointed out that there are the same agriculture product available at the three major markets. The marketing commodities at those markets are very competitive. ➢ Perishable: Since most of the agriculture products are very perishable, they need to sell them as quickly as possible before it get rotten or damaged.
Others	➢ There is no cooperative or other collective form for marketing agriculture products in the village. ➢ Income from marketing of their agriculture products are utilized to buy various kinds of basic needs, such as cooking oil, salt, kerosene, sugar, rice, etc. ➢ It was pointed out that the community is also lack of market information. ➢ Community have no knowledge on technology to increase agriculture production.

Appendix-G (1-14). Plenary Discussion on Customary Rules on Natural Resource Management

Theme	Discussions
Existing Rules on NRM	Existing Rules (General) ➢ There are two types of customary rules, seasonal one and permanent one. The former has "Tara Bandu" and "Sau Batar", which is a ceremony organized before harvesting corn, while the latter has traditional rules relating "marriage engagement", "funeral" and "Mare Fun". ➢ Tara Bandu has been effective in the village since the Portuguese times. It has regulated the activities of villagers in terms of i) natural resources management and ii) social relations among communities. ➢ The village organized a ceremony for Tara Bandu in 2002/2003 to protect natural resources in the village. Since then the village has appointed some villagers as "suco police" to control natural resources except water in the village. Each aldeia has 1~2 suco police responsible for natural resources and another 1~2 police for boundaries. ➢ Tara-Bandu in Samalete also controls harvesting season of corn. During the corn farming, they hung a symbol of corn/farm produce so as to protect corn/farm produce from stealing by others. "Sau Batar" is to be organized when the prohibition period ends. ➢ In "Sau Batar", suco police first harvests some products and bring them to the following order: i) chef de aldeia, ii) chef de suco, and iii) sub-district administrator. Roles of Suco Police ➢ Suco police can have an honorarium when they find the offender. However, a suco police-person should also have to pay damages to the suffer (such as the land owner) if he/she can not find the offender. The number of suco police is dependent on the area of Aldeia. ➢ Suco Police are elected among community members. The criteria for selection are: i) trustfulness, ii) good behavior, iii) knowledge about adat, and iv) a strong sense of responsibility. The term of working as Suco Police is not fixed and depends on the performance of the person assigned as Police. ➢ There were cases of illegal cutting in 2002 and 2003, since the performance of police was not good. Rules on Tree Cutting ➢ Cutting a/ tree/s in his/her owned land for building a house, a villager needs to inform Chef de Suco (CDS) through Chef de Aldeia (CDA). ➢ Cutting a/ tree/s in land owned by another family for building a house, a villager needs to get permission from the land owner and both of them need to inform Chef de Suco (CDS) through Chef de Aldeia (CDA). ➢ The same protocol as mentioned above should be taken for harvesting coconut or betel nut in land owned by another family. ➢ There is no need to have permission from the land owner as well as CDA/CDS only for the collection of firewood (dead trees and/or fallen trees/branches). ➢ Whenever a villager likes to cut trees for building a house, he/she needs to call Suco Police to the place where trees are cut and asks Suco Police to give him/her permission to cut trees. Suco Police judge whether he/she can cut trees from the environmental point of view and watch his/her cutting/logging at the field. In general, villagers are not allowed to cut small trees. For cutting Ai bubur and Ai ru, those withour leaves or that look dead are to be cut first. ➢ If a villager needs to cut trees in the course of shifting cultivation, he/she needs to consult

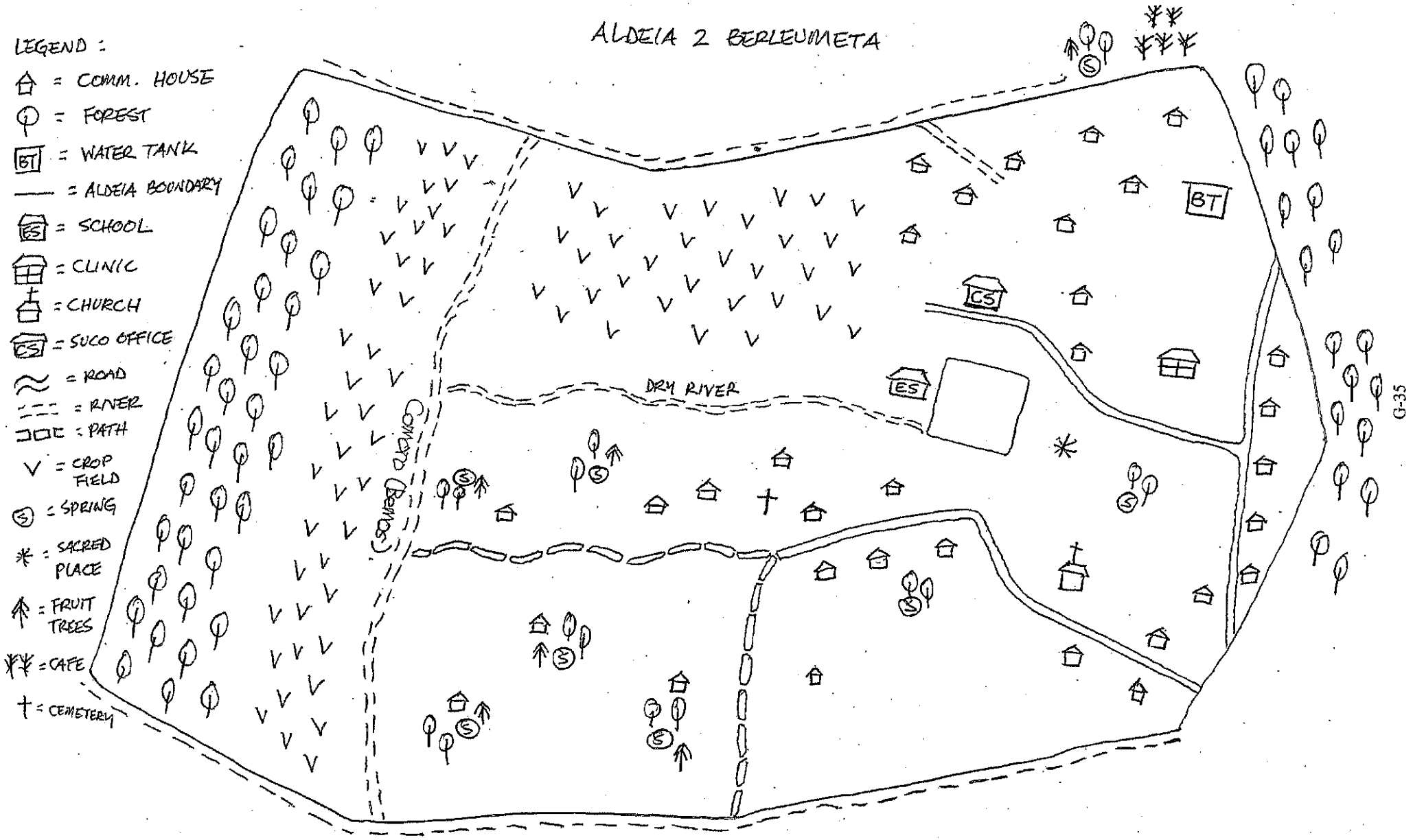
Theme	Discussions
	with Suco Police about cutting trees.
Historical Changes in Rules /Regulations on Illegal Cutting	Portuguese era: ➢ A villager who committed illegal cutting would be given a flogging and forced to pay fine (money with animals) during the Portuguese era. Indonesian era: ➢ In the Indonesian era, a villager who committed illegal cutting would be forced to pay fine (animals and money). Present: ➢ At present, if a villager commits illegal cutting, he/she is fined US$ 25 for the poor or US$ 50 for the middle class. The fine is to be paid to Lia Nain and to be shared by the land owner and the suco police-person who has found out the offender.
Tara Bandu	➢ In the ceremony of Tara Bandu, the community members gather at Uma Lulic and the beginning of Tara Bandu is officially announced to the community members. The villagers should follow the rules/regulations of Tara Bandu. ➢ The rules/regulations of Tara Bandu was decided by the council of Suco with the communities and presented to the neighboring villages and the sub-district office through Chef de Suco. ➢ However, the rules/regulations of Tara Bandu are not in writing. ➢ Tara Bandu for corn is effective between November and May every year. Other farm products (e.g., fruits, coconut, etc.) are also controlled by the "Tara Bandu for corn". During the Tara Bandu period (November – May), the villagers need to obtain permission to harvest farm produce from Suco Police. ➢ The rules/regulations defined by Tara Bandu seem to be still local norms and are not enacted as village regulations. In other words, everything is decided by negotiation. ➢ If the government rules/regulations are enacted and given to them, villagers would follow it. But they will keep using those of Tara Bandu for the time being since there is no rule on natural resource management at present. ➢ The participants said that there apparently were government regulations but they have yet to be implemented since there was no dense forest in the village. The regulations they heard about are to prohibit cutting trees and burning forests and to recommend planting trees in bare land. ➢ Currently, Tara Bandu does not control animal grazing. Hence, if an animal causes damage to crops, the owner of the animal should talk with the owner of the land to decide how to compensate for the damage. ➢ Villagers like to revise the fine stipulated by Tara Bansu based on the present economic situation of the community members.
Planting trees	➢ There is no rule/regulation that a villager should plant a tree after cutting. Trees can naturally regenerate and grow without planting. ➢ Chef de Suco proposed planting trees in the village to the District MAF office and the Portuguese project in 2004, but the village was not able to have any assistance from external organizations. Hence, the village planted casuarinas and cashews in the area owned by Chef de Suco (1 ha) for demonstrating the effect of reforestation.
Responsibility of leadership of village on NRM	➢ Accordingly, Lia Nain and other suco council members are not responsible for natural resource management in the village. But "Suco Police" is the main responsible body for natural resource management in the village. ➢ The council of suco is just to be informed about cutting trees.
Current practices to	➢ The following should be taken to prevent a forest fire when a villager burns the farm. - Make firebreak lines around the farm (Clean the edges of farm to prevent fire from

Theme	Discussions
prevent fires	expanding); - Invite all the land owners of the surrounding lands; - Work together to make firebreak lines; and - Control a fire not to spread to other fields. ➢ There was a large forest fire on October 9, 2006, which burned xx farm plots or xxx ha of lands and xx houses. When the fire took place, the person responsible got drunk and worked alone (no one worked with the person.).
Interventions made by the Government	➢ In 2005/2006, MAFF' extension staff visited the village and provided i) information about uses of fertilizer, ii) farming tools (watering pots, spades, hoe, etc.), iii) seeds of vegetables, and iv) knowledge about how to make a terrace. ➢ In 2006, NDCF staff visited the village and gave information of possible results caused by deforestation (e.g., landslide) advising i) protecting forests, ii) not cutting trees, and iii) not burning forests. ➢ In 2002, NDAL staff visited the village and distributed chicks to 30 villagers organizing six farmer's groups (@ 5 persons per group) in the village. At the same time, the NDAL staff provided information of animal diseases and how to prevent them. ➢ In the group formation in 2002, Chef de Aldeias of each Aldeia fist selected the candidates for the members of the groups, and then, Chef de Suco and other council members approved their selections.
Others	➢ The participants used the following indicators for assessing the land productivity. - Number of trees covering the area (The more trees there are, More fertile the land is.) - Vegetation covers (If the land is covered with weeds (such as Chromolaena odorata) and the height of weeds is tall, the land is considered "already fertile". ➢ There is a common rule that land owners who own lands along the road should maintain and protect the road.

Appendix – G (2)

Results of RRA Survey at Suco Tohumeta

RESOURCE MAPPING : ALDEIA 1 TOHUMETA

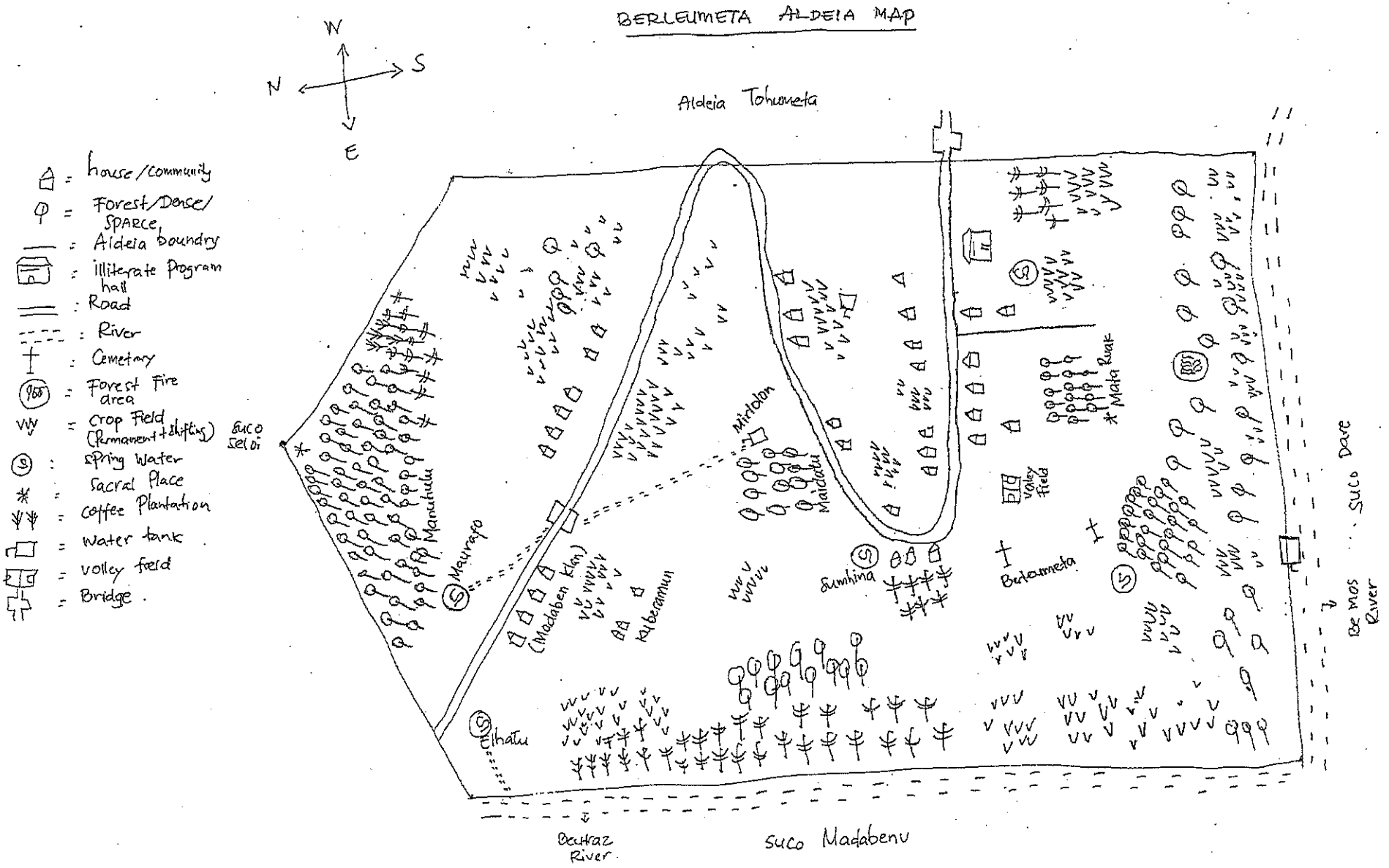


Annex-G (2-1) Resource Map of Aldeia Tohumeta,Suco Tohumeta

Appendix-G (2-1). Points of Discussions on Resource Mapping of Aldeia Tohumeta (Aldeia I)

Topic	Discussions
Important water sources and their purposes	➢ There is an existing water tank with a piping system constructed by the national NGO Tohar under the CEP project (Community Empowerment Project). The system provides water only to the school and several households (about 48HH) in the center of the village. The majority of the community members do not have access to the piped water. ➢ Villagers establish small garden plots near the water sources/springs. Fruits and other crops, such as talas (taro), jackfruit, banana, papaya, etc., are plated near the water springs or sources. The fruits are mainly used for their own consumption and some surpluses are sold at the local markets. ➢ Villagers are free to fetch water from the springs, but others are not allowed to overtake the spring which is already belonging to the landowner.
Other natural resources	➢ In the forest on the other bank of the Bemos river, there are forest trees, host trees for honey, wild fruits, and wildlife (monkey, deer, possum (meda), local skunk (laku), snake, wild birds, etc.). ➢ People from other villages often comes to the forest and cut trees for firewood. The villagers themselves don't cut trees for firewood. ➢ There was a sacred Banyan tree near the entrance to the Suco, but recently it collapsed. Before it collapsed, the farmers often pinned a bundle of corn on the sacred tree to notify the start of the harvest season of corn as a cultural practice. ➢ In the Portuguese and Indonesian times, Tara Bandu strongly banned villagers from cutting trees, burning forests and agricultural farms, but now there is no enforcement for Tara Bandu any longer.
Agricultural resources	➢ Main species of coffee in the village are Moca and Arabica. ➢ Some partsof coffee farms located at the corner of the Aldeia 1 were replanted after 1975-78 era. In that era there was a big fire set by the Indonesian military that burnt most of the trees, farms and coffee plantations. The participants estimated that the current coffee plantation is under the coverage of about 30-40 shade trees (since they don't know how big the coffee area is). During the Indonesian invasion between 1975 and 78, the military systematically burned Tohumeta for their operation to uncover the Falintil hideout. All the villagers were evacuated to Dare, Aileu and Dili. They returned to their suco in the 1990s and discovered that most of the trees, farms, and coffee farms were burnt along with their houses and uma lulik. Since many shade trees (Ai Samtuku) were also burnt, it is difficult for them to replant coffee trees. Shade trees replanted in later years are still limited. ➢ Near the natural springs, jackfruit, banana, coconuts, tua metan, papaya and betel nut are planted. ➢ Maize and cassava are mainly planted in the shifting cultivation plots. ➢ Villagers practice shifting cultivation because they feel slashing and burning dried grasses are easier rather than slashing green grasses. Villagers consider that the plots for shifting cultivation are rather fertile, since what they have to do to have good harvest are only to slash, burn and then plant corn.
NTFP	➢ Bamboo grows in forests and farmers plots. Some grow wild and some were planted by villagers. Bamboo is mainly used for building materials, such as walls and huts. ➢ Honey can be harvested in the forest area on the other bank of the Be Mos River. ➢ Ai Ru and Ai Bubur are utilized for building materials, but not for selling. ➢ Wild fruits exist in the forest.
Land	➢ No government land

Topic	Discussions
ownership	➢ No communal land. When asked whether the participants had any communal land, they explained that forest near the top of the suco center can be cut by villagers or used for grazing animals without having any permission from the land owners of the land. ➢ All the lands are divided and owned by villagers since their ancestral times. A villager can borrow the land from another villager for farming. Payment to be made by the user (borrower) is dependent on the agreement between the borrower and the land owner.
Wild Animals	➢ In the forest area on the other side of the Comoro River, there is wildlife such as monkeys, *meda* (possum), *laku* (local skunk), deer, snake and wild birds.
Grazing	➢ Villagers graze livestock mainly in their own farms or the forest being communally used, which is located at the Foho Lahometa, border with the neighboring village. Villagers are not allowed to graze livestock in another farmer's plot without permission. Sometimes a stray caw/ox is killed and the meat is shared between an owner of the land and that of caw/ox. ➢ Grazing land for the livestock are mainly in their own farms or communal land, located at the top of Suco Lahometa, border with another villages of another suco. Livestock are not allowed to graze in another farmers plot without permission. Sometimes stray cattle is caught and killed with the meat shared between landowner and cattle owner.
Landslides	➢ Landslide and soil erosion often happen during the rainy season, mainly on fallow lands and sloping areas of shifting cultivation plots.
Others	➢ When farmers from Suco Samalete are going to Dili on foot, they often visit Suco Tohumeta since there are still family ties between both sucos.

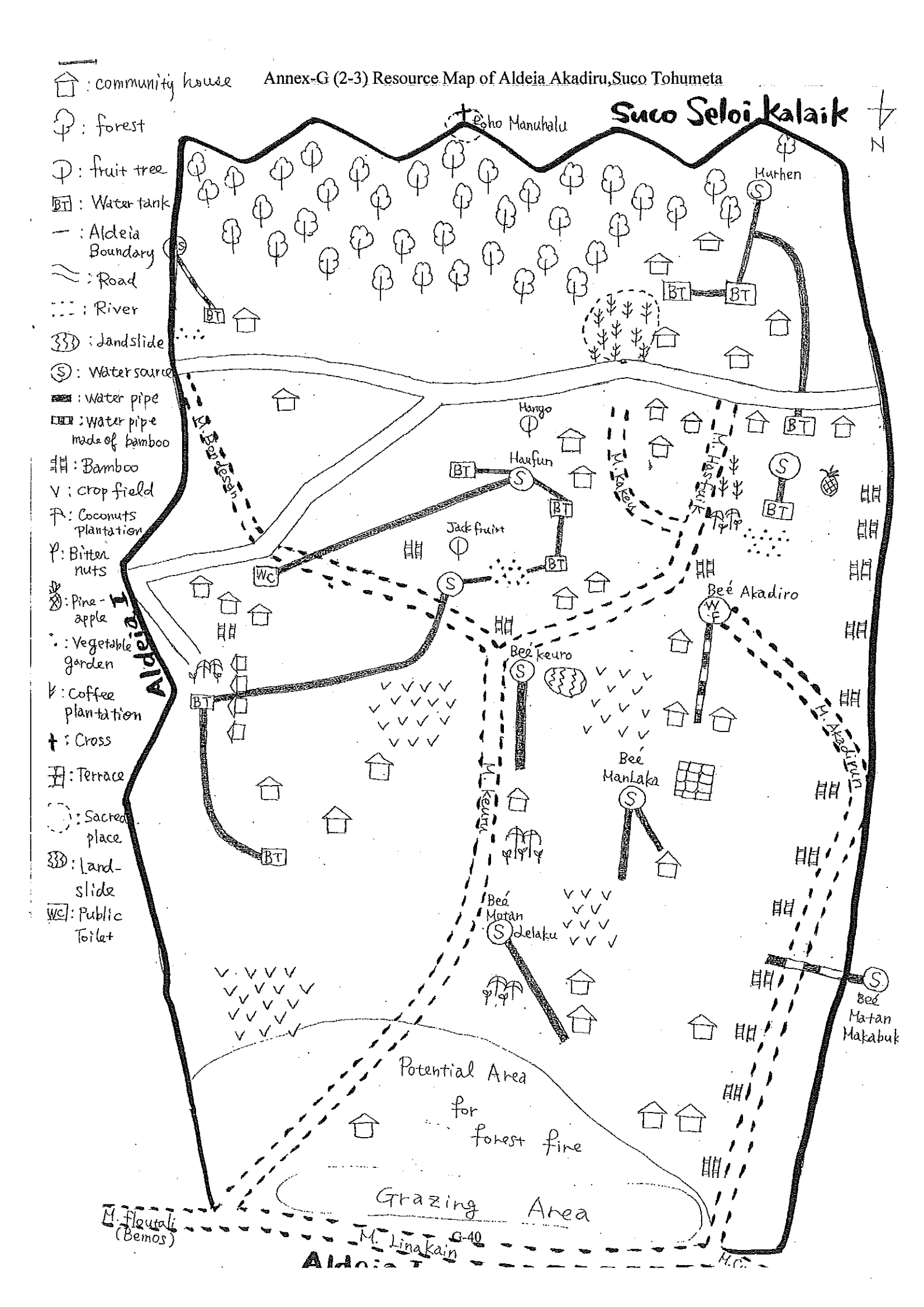


Annex-G (2-2) Resource Map of Aldeia Berleumeta,Suco Tohumeta

Appendix-G (2-2). Points of Discussions on Resource Mapping of Aldeia Berleumeta (Aldeia II)

Topic	Discussions
Land Use	➢ Most of the lands in Tohumeta are used for crop fields (Shifting cultivation + permanent field), forests area, animal grazing and community settlement ➢ All lands in the village are private. The peticipants said that there was no governmental or communal land and all lands were inherited from ancestors to sons. Each household has about 4 ha of farm areas. ➢ Community settlements are located along the main road. Accordingly, in the Portuguese times they lived near their farms, but when the Indonesian government occupied the area, TNI (Indonesia military) forced them to stay along the main road.
Forest/Trees	➢ Villagers consider crop field, trees/wood and water as three main important things in the area. ➢ Samtuku (paratheriantes) has been grown in the village since 1990. ➢ The participants pointed out that the reasons of cutting trees were to earn cash income, and to fulfill the demand for wood for construction as well as housing materials. ➢ A forest is located in Manuhulu hills. Sometimes the villagers of Tohumeta practice a traditional ceremony (asking for raining) in the area. They don't cut trees intensively in that area due to regulation of suco council to protect the Manuhulu area.
Water	➢ The water intake (Bemos intake) is located in the foot of the slope (along the river), which is also part of the farm field of Mr. Marcelino and Mariano Lopez. Both land owners said: "We want to extend their cropping field and therefore have often cut trees even in the areas around the water intake on the Bemos river. How does government can manage this issue?" ➢ Regarding the water intake, villagers consulted with the national parliament few years ago.
Animal Grazing	➢ The areas used for shifting cultivation are also used for animal grazing. ➢ Most of animals are tied to trees or kept in cages or fenced areas.

Annex-G (2-3) Resource Map of Aldeia Akadiru, Suco Tohumeta

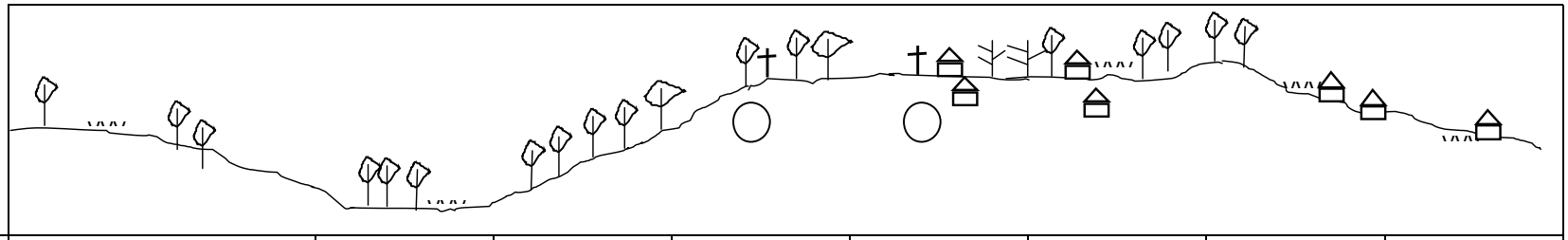


Appendix-G (2-3). Points of Discussions on Resource Mapping of Aldeia Akadiru (Aldeia III)

	Discussions
Important water sources and their purposes	➢ Some villagers can use water through a pipe line from a water source in Suco Fatisi. They don't need to get permission from the land owner because they have family relationships with the owner. ➢ Villagers can fetch water from the sources of water without any charge. They put water pipes to their houses without any permission from the land owners. ➢ Most of the water tanks in the Aldeia were constructed by World Vision under the community development project in 2003-2004. There is no community organization on water resource management. ➢ Main use of water is for drinking, taking shower and watering vegetables.
Other natural resources	➢ Main forest species are Eucalyptus spp. (Ai ru, Ai bubur), Ai na and Albizia (Samtuku). ➢ Forestland is privately owned and divided clearly by boundaries. ➢ The owner of forestland in the southern part of the Aldeia is Mr. Julio. In his forest, villagers can take woods only for construction of a house, not for commercial purpose. He also allows the community to collect dead trees, but not to cut living trees for firewood consumption, considering the function of forest on conservation of water resources. So villagers go to other places to cut trees for firewood. Villagers also use bamboos as firewood. ➢ The participants mentioned that if they leave bare land in the Aldeia as it is, it could cause some problem in the future. But they haven't gotten any support to reforest the area.
Agricultural resources	➢ Mr. Julio, above-mentioned forest owner, also has some vegetable farms, where other villagers can cultivate crops without any charge. ➢ At the farms, villagers plants crops such as white mustard, black mustard, chili, eggplants, cabbage, carrot, onion and garlic. ➢ Few coffee trees have been planted in the Aldeia by people outside the suco. Main species of coffee are Moca and Arabica. ➢ Near the natural springs, coconuts, betel nuts and jack fruits are planted. ➢ Maize, cassava, taro, and beans are planted under shifting cultivation. ➢ Each HH has a few orange and mango trees. ➢ World Vision implemented a project with terrace making in the Aldeia.
NTFP	➢ There are many bamboos in the Aldeia. ➢ Honey production is limited. ➢ Tua Metan is also produced in the Aldeia.
Land ownership	➢ No government land ➢ No communal land
Wild Animals	➢ In forestland, there are some animals such as monkeys and deer.
Grazing	➢ Some villagers have livestock such as cows and goats. ➢ At the foot of the slope area, villagers raise goats in cages. It was part of the project implemented by WV.
Landslides	➢ Landslides occurred in 2003 and 2005. Villagers planted king glass at the landslide sites on the land owners' own initiative.
Forest fires	➢ To prevent the expansion of fire from shifting cultivation farms, villagers prepare firebreaks. In case the firebreak is narrow/small, the neighboring farms might be burned.
Others	➢ World Vision started the Community Income Generation project in Tohumeta in 2006.

Appendix-G (2-4). Results of RRA Survey at Suco Tohumeta
- Transect Walk -

Aldeia: Berleumeta
Date: Oct. 09. 2007



	Point No.	1	2	3	4	5	6	7	8
	Name of the Location	Maukusi	Beutraz	Berleumeta	Berleumeta	Karbaumate	Karbaumate	Karbaumeta	Moidatu
1	Current main Land use	Grazing & Shifting Cultivation	Forest, animal grazing crops field around in the river sides	Animal grazing and firewood collection	Ancestor cemetery of a land owner , Firewood collection and timber collection for house use	public cemetery, bamboo plantation, coffee plantation, house farms	Crop field, fruits trees, settlement (vegetables and fish pound)	Crops fields and fruit trees and settlement	Settlement, crops field and vegetables, some trees
2	Topography	Steep	Steep	steep	Steep	Flat area	Flat area	Flat and slope	Slope
3	Land Species	Good	Good	Poor	Poor	Good	Good	Good	Good
4	Crop and tree species	Banana, taro, maize, pigeon peas, cassava, arraow roots, paratheriantes, chromolaine (wild grass)	Cassava, maize,manggo, jackfruit, orange	Eucalyptus alba	Eucalyptus alba , patatheriantes, maize, cassava	Maize, cassava, vegetables, coffee (Arabica), bamboo, coconut, banana, mango	Mustard, maize cassava, orange, mango, coconut, papaya, bamboo and other kind of vegetables	Cacao, banana, mango, coconut, salak, bamboo	Maize, cassava, mango, banana, vegetables, orange, taro.
5	Availability of water	There is a water source	There is a small river (Beutraz River)	No water	There is Titikuan water spring	There is a water source	Use bamboo to canalize water	population uses a water source that close to their area	There is the Sumhina water source
6	Land ownership	Private land	Private land	Private land	Private land	Private land	Private land	Private land	Private land
7	Problem	Wind, mouse and minim rain	Monkey, dear and wild pig	None	Low rainfalls, low production	Production and price of coffee are not stable. The price of coffee was low in 2007 (90 cents/kg for parchment). Market of other produce is limited: on foot to Dili and not many amount	There is a fish pond in the farm but no enough fish baby. Difficult to get seeds. And no technical assistance to produce the vegetables	No	No
8	Other Issues	The fallow period is 2-3 years. Before doing shifting cultivation they do animal grazing. They now start planting for shiting cultivation. Most of land owners live in another place around the road, which is far from here.	The river is the boundary with the neighborhood suco (Madabenu). Sometimes there are land disputes with the neighborhood suco	None	The soil conditio around here has not changed since long time ago. The land owner prayed for ancestor cemetery on Nov. 1 every year (cleaning and flowering)	They do processing coffee by themselves to parchment. CCT and Timor Global come to the village to buy it. They eat bamboo shoots.	WV supported some farmers around here. Some of farmers have small dig wells. Currently no support but seems that they know basic knowledge of agriculture.	No	Water tank is set below water sources. Water is collected and used for drinking and animals.

Appendix-G (2-5). Results of Historical Profile

Theme	Discussions
General History	➢ Five village elders discussed about the general history of Suco Tohumeta. The history started as far as the elders can remember, but the year was vague and only names were remembered as far back. The history of suco is largely divided into three parts, namely, i) Portuguese era (1920-1975), the Indonesian era (1975-1999), and iii) After the referendum (2000-2007).
Portuguese Era	➢ During the Portuguese colonial period the Liurais were elected by the colonial power and obeyed the colonial rulers. Villagers were ordered to work for Liurai Don based in Dili for free. Liurai Don ordered people from Tohumeta to go to Dili to work in his farms through forced labor. Even children were forced to herd his livestock. His supervisor often came to the village to check on the farmers in Tohumeta and ordered them to go to Dili to work for Liurai Don. ➢ During Portuguese colonial period the rules were very strict. Villagers were restricted from burning the forest or cutting trees. Villagers had to obey the rules and the orders from the colonial rulers. Any disobedience would lead to imprisonment. If the men runaway, they would capture and imprison their wives instead. ➢ During the Portuguese colonial period there were many livestock but not much agricultural crops. The land mainly use for grazing. **1920s ~ 1940s** ➢ Liurai Kolibere was named as the first Liurai of Suco Tohumeta. ➢ Liurai Berleki ruled over Suco Tohumeta, with only 2 aldeias (Tohumeta & Berleumeta) ➢ Liurai Mauseran was a successor and ruled over Suco Tohumeta, with the same 2 aldeias. ➢ During the ruling of Liurai Maununo, he ordered the villagers to plant the coffee seedlings (Arabica, Robusta and Mocha). The wildlings from other coffee forests or plantations were used for seedlings. The Liurai also ordered to cut down forests and replace them with Ai Samtuku for shade trees of coffee (most likely before the planting of the coffee). Besides coffee, fruit trees were also planted, such as jackfruit, coconut, buah (areca nut), etc. The farmers now considers that coffee is difficult to plant due to the soil infertility. **In the early 1940's** ➢ Liurai Mausoko ruled over Suco Tohumeta (2 aldeias), and in 1943 he was imprisoned by the Colonial Power for his disobedience. **Late 1940s ~ 1974** ➢ In 1966 a temporary church was built for the first time in Suco Tohumeta under Father Antonio Maia from Letefoho, Ermera. ➢ (1946~1974) Liurai Maununo regained the position and ruled over Suco Tohumeta after the imprisonment of the former Liurai Mausoko. ➢ (1966) A temporary church chapel (the first church) was built in Tohumeta to introduce Catholic religion to the community. **1974s** ➢ Liurai Maununo stepped down from his position of traditional king.
Indonesian Era	➢ During the Indonesian period livestock such as cattle were introduced. Villagers raised their livestock and sell them for income generation, especially for payment of the school fees of children. **1975** ➢ The Indonesian military invaded the country in December 1975. ➢ (1974~1979) Liurai Domingos Gomes took up the reign, ruling over the same 2 aldeias in

Theme	Discussions
	Suco Tohumeta. ➢ Before 1975 the Suco had 2 Uma Luliks with many uma lisans1, but they were all burnt in 1975 onward during the Indonesian military operations. **1975 ~1989** ➢ The community of Suco Tohumeta were evacuated to Dili, Aileu and Dare due to the Indonesian military pressure. (Note: other participants in other sessions stated that villagers were evacuated in 1975 and when burning took place the village was already empty). ➢ The Indonesian military burned forests, farms, houses, etc. to uncover suspected Falintil hideouts. All the village houses, including their Uma Luliks were burnt. ➢ (1979 ~ 1990s) the village was empty due to mass evacuation of the villagers to Dili, Aileu and Dare due to the Indonesian military pressure. **1990s ~** ➢ The community returned to Suco Tohumeta and resettled there. They started to rebuilt their houses, replant trees and coffee trees. ➢ During the resettlement period, Tara Bandu was applied to restrict cutting trees. ➢ The Indonesian government provided livestock (e.g., cattle) and seedlings of trees and fruit trees to the villagers through their farmer's groups. The government also built school buildings and roads. ➢ (1990~1999) Liurai Alfredo de Fatima was elected by the Indonesian Government during the resettlement of the villagers back to Suco Tohumeta. This period was the era of the former Governor Mario Carrascalão. During the reign of Liurai Alfredo, he led the resettlement program of the village to rebuild houses, replant farms, and build school buildings and roads. The Indonesian Government provided seedlings of Ai Samtuku and fruit trees to the village. The current primary school has 6 teachers, which are 4 Government teachers and 2 honorary teachers. **1994~1995** ➢ The Government of Indonesia built an access road to from the center of the village to Aldeia Berleumeta. . The Ministry of Religion provided about Rp. 2,000,000 (+ U$ 200) and the community members also donated Rp. 50,000 (+ U$ 5) each to build the first concrete chapel, which was inaugurated in 2002. ➢ World Vision Indonesia had provided about 7,000-8,000 seedlings of *Ai Samtuku* and other species to Suco Tohumeta.
Timor-Leste Era	**1999** ➢ Referendum for Timor-Leste. ➢ (1999) During the CNRT era, Liurai Julião rehabilitated the primary school and Sede Suco (Suco Office). ➢ (1999 ~ 2005) Liurai Julião de Jesus elected by the new Government of Timor-Leste after the independence. The suco was devided into the current 3 aldeias: Tohumeta, Berleumeta and Akadiru. ➢ Since 1999, there has been no enforcement of Tara Bandu any longer. **2003-2004** ➢ Government provided 7 heads of cattle (5 buffaloes & 2 cows) to the suco council through NGO Tohar as part of the CEP (Community Empowerment Project) funded by the World Bank.

[1] *Uma Lisan* is a traditional house for families center, usually ranging from 5 – 10 families. Different to the traditional sacred house of *Uma Lulik.*

Theme	Discussions
	2005 ➢ Liurai Duarte de Fatima was elected and has ruled over the 3 aldeias until now.
Other topics	➢ The name of Suco Tohumeta originated from the name of water spring called 'tohumeta' (black sugar cane). ➢ The community had been cultivating the same plots of land since the Portuguese times, using ancestral cultivation techniques. During the Indonesian period there were some input supplies for the government, such as provision of seedlings (fruit trees). ➢ The villagers consider the life is better now, since their children are able to go to school. Before there is no education for the children and no access road. Now the villagers feel more peaceful living in the Suco. ➢ One elder retold the story of the origin of their family ancestors named Avo Ayasa (grandfather Ayasa) who settled in Tohumeta. He had 3 other brothers, one settled in Bobonaro, and one passed away, and the fourth one is Avo Matan Hat. Thus there is still an ancestral linkage with the families in Bobonaro and Tohumeta. They offered annual tribute to their ancestor and his brothers, such as Avo Matan Hat (4 eyes, both front and back of the head). Since Uma Lisan Ayasa is situated in Tohumeta as the original source, the Ayasa families from Bobonaro will come to Tohumeta for the lisan ceremony. ➢ Currently there is no Tara Bandu on free animal grazing and destroying crops on other villagers' farms. The animals are sometimes captured and killed by the landowner. It is a sort of punishment or penalty. Villagers stated that Tara Bandu must be re-enforced in a top-down manner from the central Government to Suco level. ➢ The veterinarian comes to the village about trice a week to immunize the cows and pigs. ➢ Villagers think that currently there are more ways to utilize forest resources unlike before. Before many houses in the village were roofed with grasses (thatches), but now buildings are built with timber from forests. Villagers do cut trees for building but not for selling. In 1991-1992 they built the church chapel and Sede Suco (Suco Office). A school was also built by the donor. The main trees used for building materials are Ai Ru and Ai Bubur (Eucalyptus spp). It is estimated about 30-40 trees required for building a house. ➢ Villagers think the current conditions of farms, resources, and water availability the same as those in the Portuguese times. The volume of spring water and the mount of the trees have not been changed since the resettlement period in 1990 accordingly. The main 2 aldeias provide water resources to the whole suco. ➢ There is less food production months (January and February), which is the pre-harvest period of corn and cassava.

Appendix-G (2-6). Traditional activities in Suco Tohumeta

Theme	Discussions
Traditional activities	➢ Communal work for cultivation and harvest: where the community including children would work together for harvest or other social events. In the communal work for harvest, the community would work together in harvesting and storing part of the harvest at a community storehouse. The stored harvest would be brought out and cooked by the women during some other ceremonial events, social meetings or during drought period. In the Portuguese era usually the Liurai ordered for such communal work. Similar communal custom is also applied in land preparation, cultivation and planting/seedling. ➢ **Gotong Royong** (communal work): This is an Indonesian version of the communal work. The community had worked together in rebuilding their houses, roads and chapel, reforesting and replanting their farms during their resettlement in the village in the 1990s. ➢ **"Tara Bandu"** (Customary prohibition): This is a traditional ban on not only resource use but also public morals in the community. In the ceremony, a head of animal, such as cow, buffalo, or goat is sacrificed after praying to God (Lulic). An object (ex. Corn, timber, etc.) which is subject for the prohibition is hanged at the gate of field to officially announce Tara Bandu. It has been ineffective in Suco Tohumeta since 1999. ➢ **"Kenduri"** Ceremony (Preparation for wedding ceremony): This is a communal work to prepare for a wedding ceremony. The community would work together, especially with extensive family members, in the preparation for a wedding event, such as constructing the tent, cleaning, cooking, etc. ➢ **"Harohan / Hamulak"** (Ceremony to pray to God for rain and good harvest): This is to pray by elders together with the community at sacred locations calling for rain or a good harvest. Community would gather at the sacred location bringing offerings such as piglet, chicken, eggs, corns, etc. and placing them at the sacred location. Elders would pray for rain or good harvest. Rain would definitely fall within a few days later. If failed, the community would go to Manufu (another sacred location) and hamulak again. If the hamulak is able to bring good harvest that year, the community could not cut or consume without having another sacred ceremony at the same location, or it is believed that it would bring bad luck, such as heavy rain or wind might come to destroy the crops. Tebedai and Bidu are the sacred locations where the ceremony is also conducted. Hamulak is also common when building sacred houses such as Uma Lulik and Uma Lisan.
Problems in carrying out activities	➢ The younger generation is loosing interest and beliefs in the traditional customs and practices. Sacred power and value are considered to be diminishing since the introduction of Christianity in 1968 where many Liurais and elders were baptized. ➢ Tara Bandu is considered important to ban wood cutting, burning or making other social issues. The elders believed that the Central Government must legally support and enforce Tara Bandu down to the community (Chefe de Suco), if not, Tara Bandu would not be effective. They already suggested reactivating Tara Bandu to the Chefe de Suco but nothing had been done.
Solutions for the problems	➢ Re-establish Tara Bandu on the community's own initiative with the legal/non-leagal support by Government (as well as NGOs).
Others	➢ A MAF officer attending the session informed about an example where Tara Bandu is actively implemented in one of the sucos in Sub-district Hatolia, Ermera. The local community got together and drafted a proposal for Tara Bandu and its regulations. The community submitted the proposal to the Forestry Division requesting for realization with financial support. The proposal was approved and the finalized Tara Bandu regulations were provided to MAFF and Human Rights group. ➢ The director of Forestry Division officially inaugurated several kaburonda (Portuguese name for forest guard) by giving them chili water to drink and hitting them with Rotan. This was to show how they are brave and responsible for their duties. The kaburondas were community members who were selected by the community and work on voluntary basis. They have the right to capture and punish those who offend Tara Bandu, including beating them in accordance with the regulations.

Appendix-G (2-7). Venn diagram of existing/relevant institutions working in Suco Tohumeta

Theme	Discussions
Methodological approach	The World Vision (WV) took two steps to prepare the Ven Diagram of Existing/relevant Institutions in Tohumeta village, namely: 1) listing existing/relevant institutions and scoring their importance; and 2) drawing a diagram by depicting the importance of the institutions based on the scores. According to the WV, this approach enables the participants to identify the relative importance of existing/relevant institutions more constructively than the conventional approach, which is directly asking participants about their importance. Having gained the lesson from the experience at Samlete village where the response of the participants to direct question was faint, they have decided to adopt this approach.
Listing existing/relevant institutions and scoring their importance	After the participants listed existing/relevant institutions, the WV set four criteria for the assessment of their importance, which were 1) the frequency of visits, 2) the relevancy of the program/services, 3) the relationship to the community (close or not) and 4) the quality of information delivery (e.g. usefulness of information and methods to deliver it). The highest score that the participant could put is 20, which reflects the full satisfaction of the community. For each institution that the participants listed, they determined the score against each criterion, which resulted in obtaining the total score that indicates the value of the importance of the institution. Existing/relevant institutions listed and the evaluations of their importance are summarized in the table below. For some of the scores that the participants put, clear rationales were obtained. These rationales are described in the following paragraph (the parenthesis in the table corresponds to the bullet points in the following paragraph of "Rational for scoring"). **Table: List of Institutions and the Results of the Scoring Assessment**

No	Name of Existing/relevant Institutions	Type	Frequ-ency of visits	Relevancy of Program/ Service	Relation-ship	Info. delivery	Total
1	WV	NGO	14 (a)	18	12	10 (b)	54
2	MTRC (Ministry of Solidarity)	Gov.	2	1(c)	3 (d)	5 (e)	11
3	Suco Council	Com.	15 (f)	10	20	10	55
4	Church	Religion	10	5(g)	10	10	35
5	Care International	NGO	1 (h)	0	0	0	1
6	PNTL (National Police)	Gov.	2(i)	1(j)	2	2	7
7	Tokoh Adat (elders' group)	Com.	20 (k)	15(k)	15	15 (k)	65
8	Saude (Mobile Clinic)	Gov. & Religion	15	18	10 (l)	15 (l)	58
9	Agriculture, District Aileu	Gov.	5 (m)	2	5 (m)	10	22
10	Ministry of Education	Gov.	10(n)	10(n)	15 (n)	5	40
11	PLAN International	NGO	1 (o)	0	0	0	1
12	AUSAID	Donor	5(p)	5(p)	2(p)	5(p)	17
13	Arte Marchales	Com.	0 (q)	0	0	0	0
14	Cassava Chips Group*	Com.	5 (r)	10 (r)	10 (r)	10 (r)	35
15	Broom Group *	Com.	5 (s)	10 (s)	10 (s)	10 (s)	35
16	Water Users Group*	Com.	5 (t)	2 (t)	2 (t)	1 (t)	10

Theme	Discussions
	Note: * the formations of those groups were supported by WV. Rationale for scoring a. The participants divided the functions of WV into three units according to the kind of service they have received, i.e. the education, health and agriculture sections. The education section gained 1 point. Health: 8 points and Agri.: 5 points according to the frequency of visits. Thus the total score is 14. b. Information provided by WV on how to make cassava chips is important to the community to gain more income. Information is shared through the meeting (which is a better approach of communication as compared to e.g. just sending a letter). Hence the score is good. c. MTRC has been implementing the Cash-for-Work Program where people could earn US$2/day, if they participate in the program and do some works (e.g. clean the road). However, only a few people have been involved in the program so far. Hence the relevancy of the program is low. d. As means of communication, MTRC staff uses a phone call. They also create conflicts among the community, as only few people could enjoy benefit from the program. So relationship is not good. e. To deliver information, MTRC approaches Chef de Suco, who provides information to Aldeia. Then, Chefs of Aldeias deliver it to the respective communities. This means that there is no direct communication between the communities and MTRC. f. They live in the village and were elected by the villagers. Thus the score is high. (Seemingly talking about Chef de Suco is sensitive, as he was elected on behalf of Fretelin.) g. The church only talks and does nothing. There is no action taken by the church. h. Care International came to the village once. They had a plan to implement a water supply project. But it has been never realized. Thus the score is low or nil. i. PNTL does not often come to the village. Sometimes people have to go to Aileu to call the police. Therefore the frequency of the visits is low. j. There is no program from PNTL. They do not carry out patrols. The relevancy of the program is low. k. Tokoh Adat members live in the village. It is a very important institution as a decision maker in conflict solution of the community (e.g. domestic violence). They provide useful information on how to behave and maintain local laws. The scores are generally high. l. There are two kinds of mobile clinics. Mobile clinic of Catholic Sisters comes to the village only 2 times per month. Government mobile clinic comes once a month. It is very difficult for the community to see doctors. However, the information they deliver is useful, e.g. how to take care of the body and sanitation issues such the importance of the toilet. So most of the scores are good. m. Agriculture of District Aileu does not so often come to the village, only one time in a few years. They distribute seeds and farm inputs to villages. But for communication they just send a letter to Chef de Suco to call him to Aileu. He obtains seeds and materials without any information on how to use them. The scores are low. n. Ministry of Education sometimes comes to the village. They have established one primary school in the village. They have a plan to build the secondary school, which has positive impacts on the community in terms of education. On the other hand there are almost no study materials and the insufficient number of teachers. Teachers are sincere to the community. o. Same reasons as Care International (See (h) above). p. AUSAID provided carpenter materials and one-month training to some of the community and formed a group of carpenters in 2002-2003. But the group no longer exists now. And AUSAID do not come to the village any more. Only a few people were involved in the program and there is no follow-up activity. Hence the scores are low in general. q. They do not like the Arte Marchales group, as it brings chaos in the public order e.g. fighting. r. Only a few people are involved in the program of Cassava Chips production: so the score for "visit" is low. The program itself is important and the participants of the program disseminate the information to other community members. So the scores against other criteria are at general level. s. Same reasons as (r). t. This water users group was formed by the WV in relation to Water Supply Project funded by the Embassy of Japan. The group members were provided training and equipment to fix water pipes. They are supposed to repair water pipes if the systems are broken, but they do

Theme	Discussions
	nothing. They keep equipments just for themselves. Thus the community put low scores. In accordance with the total scores, the values of importance of the institutions were confirmed. They were ranked as follows.

Table: Ranking of the Institutions Listed

Rank	Institution	Score	Rank	Institution	Score
1)	Tokoh Adat (elders' group)	65	**7)**	Agriculture, District Aileu	22
2)	Saude	58	**8)**	AUSAID	17
3)	Suco Council	55	**9)**	MTRC (Ministry of Solidarity)	11
4)	WV	54	**10)**	Water Users Group	10
5)	Ministry of Education	40	**11)**	PNTL (National Police)	7
6)	Church	35	**12)**	Care International	1
6)	Broom Group	35	**12)**	PLAN International	1
6)	Cassava Chips Group	35	**13)**	Arte Marchales	0

Drwaing Ven diargram

The importance of the institutions was reflected into the Venn Diagram: the larger size of the circle of drawings the more important to the community. The following figure is the final output of the session. However, it should be noted that this Venn Diagram shows only importance of each institution. Unlike the case of a normal Venn Diagram, distance between the community and the institution does not indicate how much the institution is closed to the community.

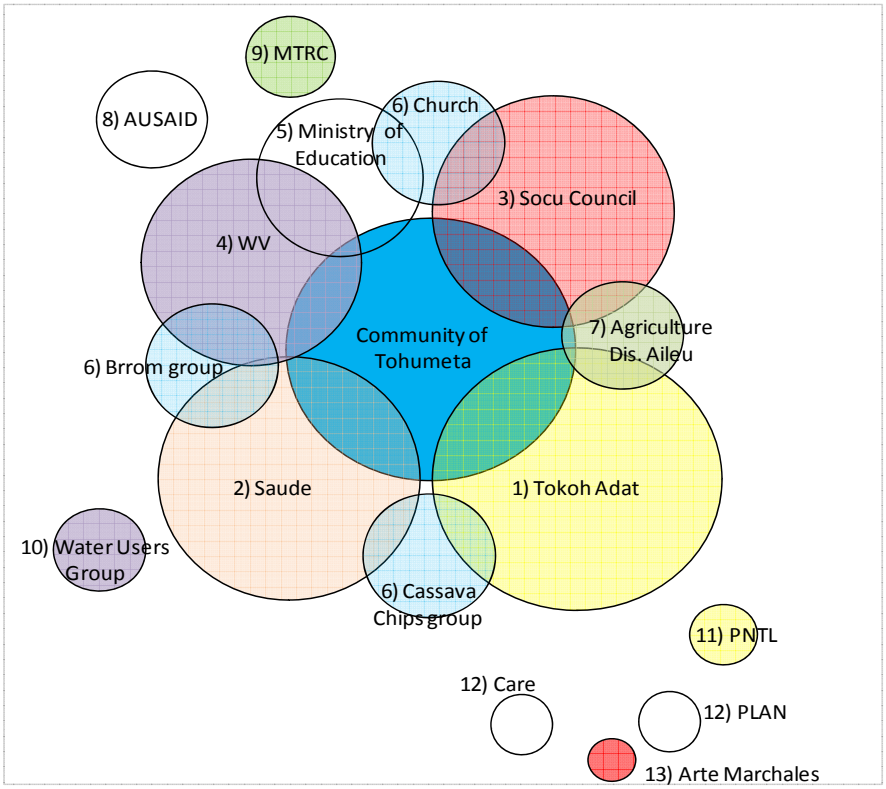


Figure: Ven Diagram of the Existing/relevant Institutions in Tohumeta

Appendix-G (2-8). Results of Wealth Ranking

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Criteria of Wealth</td><td>
The following criteria were used for gauging household's wealth in the village.
<table>
<tr><th>Category</th><th>Criteria</th></tr>
<tr><td>Rich</td><td>a household that:
- has a coffee farm or plantation;
- has several plots (2-4 plots) of land for permanent (fixed) and shifting cultivation;
- has large number of livestock (20 and more heads of cattle); and
- has capacity and access to markets (through public transportation).</td></tr>
<tr><td>Sufficient</td><td>a household that:
- has several plots of land for farming;
- has sufficient harvest for consumption and selling;
- has 1-3 heads of livestock (cattle).
- has a member who is a government official; and
- access to market by waiting for 'middlemen'.</td></tr>
<tr><td>Poor</td><td>a household that:
- has only 1 plot of land;
- has insufficient harvest or sometimes fails to harvest;
- is dependent on other families/relatives for food assistance and other support;
- has only 1 head or none of livestock;
- is headed by elderly people and widows, disabled people; and
- has no produce to sell or no access to the local market.</td></tr>
</table>

Accordingly, very few households (about 2 % of total households in suco) are categorized as "Rich", while the majority of households in the village (about 93 % of the same) are considered as "Poor". The rest of households (about 5 % of the same) are categorized as "Sufficient".
Forest resources are apparently open to every category, not restricted to one class only.

</td></tr>
<tr><td>Social impact</td><td>
The "rich", which have a number of animals, often cause a big impact on the "poor", since the rich graze their livestock freely and cause damage the crops of the poor, which often results in failure to harvest.
</td></tr>
<tr><td>Land conflict</td><td>

An elderly widow with 2 daughters reported a land conflict case where her land was reclaimed by force by the relatives of her late husband. The land was actually given to her by her nephew from her own family side. She said that when she reported the case to the Chefe de Suco and Chefe de Aldeia, they were not able to do anything because the group reclaiming her land threatened both Chefe to kill them.
Other elders added that they had some land disputes in 2002, though there had been no land conflict issue before 2002.

</td></tr>
<tr><td>Others</td><td>

Owners of single head of cattle tends to tie it to a tree due to limited manpower, while those with a number of cattle need mote manpower to raise livestock and therefore often let cattle roam freely to feed. Socially it is agreed among the community members if a cow/ox damages farm crops in another villager's farm, the farm owner must warn the cattle owner at least 3-10 times (depending on their family relations) before taking action (capturing such a cow/ox and killing it). No farmer practices fencing his/her farmland.
The elders stated that during the Indonesian times, the rural agricultural extension officers constantly came to the village to provide guidance on forestry regulations and bans on cutting trees or burning forests. MAF representatives present in the discussion informed that the current human resources of the Forestry Division is too limited to monitor and constantly visit all the villages.

</td></tr>
</table>

Appendix-G (2-9). Seasonal Calender of Activities related to Crop Production (Suco Tohumeta)

NO	ACTIVITY	MONTH												Allotment of work		Problem	Solution
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women		
A	**Production of annual crops**																
A4	Land preparation (Slashing)													++	+	Shortage of labor	
A5	Land preparation (Burning)													++	+		
A6	Seed preparation (for corn and other upland crops) <1													+	++	- Shortage of seeds. Two species of corn introduced by Seed of Life needs special drier bed.	- Buy seeds from market or relative
A7	Preparation of peanut farm (permanent farm)													++	+	Short of labor to do land cleaning and plough and do not have capacity to provide meal for people help the work	
A8	Planting/Seeding (for corn and other upland crops) <1													+	++	shortage of labor for those people who have large size of land	
A9	Weeding (for corn)													+	+	shortage of labor for those people who have large size of land	
A10	Weeding (for peanut)													+	+	shortage of labor for those people who have large size of land	
A11	Harvesting (corn, beans, pumpkin, peanut,)													+	+	Short of labor to do either harvesting or transport yield to house	work together (communal work)
A12	Harvesting (Cassava and tubers)													+	+		
B	**Other Farming Activities**																
	Preparation of temporary farmhouse													++	+	Need people to help if the harvvesting period is already right in time.	
	Draying activity for corn, nuts, cassava													++	+	sometime rain season is longer and prevent them to dry the crop and some get damaged	
B1	Planting seedlings of fruits (Banana, Coffee, Bamboo, Jackfruit, Mango, etc.)														+		
B2	Vegetable farming													+	+		
B3	Harvesting (coffee)													+	+		
B4	Corn marketing													++	++		
B5	Coffee marketing													++	++		
B6	Banana marketing													++	++		

Note:
<1: Maize, Pegion peas, Beans, Pumpkin, Cassava

Appendix-G (2-9) Seasonal Calender of Activities related to Harvesting Seasons of Major Agricultural Products (Suco Tohumeta)

NO	ACTIVITY	MONTH												Sale/Consumption		Problem	Solution
		1	2	3	4	5	6	7	8	9	10	11	12	Consumption	Sale		
C	**Agricultural Crops**																
C1	Corn				+	+								+		- Shortage of rainfall, exsess of rainfall, shortage of labor - Crop damage by rat and mouse	Communal work. However some community members cannot affort to provide meal for workers.
C2	Cassava							+	+					+		- Shortage of rainfall, exsess of rainfall, shortage of labor - Crop damage by rat and mouse	
C3	Sweet potato					+	+							+		shortage od labor	
C4	Peanut					+								+	+++	- Shortage of rainfall - Crop damage by rat and mouse	- Keep producing
C5	Vegetables						+	+	+	+ -				+	+++	- Shortage of rainfall - Crop damage by insect - Existence of competitors - Cost of transportation	- Give produce to relatives
C6	Coffee						+	+	+					+	+++	- Shortage of rainfall - Existence of competitors - Cost of transportation	- Keep producing
C7	Orange					+	+	+ -						+	+++	- Shortage of rainfall - Existence of competitors - Cost of transportation	

Appendix-G (2-9). Seasonal Calender of Activities related to Humand and Animal Diseases

NO	ACTIVITY	MONTH												Allotment of work		Problem	Solution	NOTE
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women			
E.	**Climatic condition and Natural Calamity**																	
E-2	Rain	++	++	++	+ -							+ -	+ -					
E-3	Landslide		++	++											X	Erosion, wash away several spring water	- Save and plant the seedlings of trees and bamboo, - Ask some NGOs to provide them with seedlings	
	Drought								++	++	++							
	Landfires								++									there was landfires occurred in 2005 due to heavy storm. Damaged 4 ha of coffee plantation, 7 goats, 8 pigs and 1 cow
E-4	Food Shortage	++	+ -									+ -	++	X	X	Lots of people are faced hunger	- Limit their meal to eat once a day	Agriculture production only lasting until november.
F.	**Human Disease**													X	X			
F-1	Diarrhea	++	+ -														- Go to the clinic/hospital	*- Sometimes people are died by these diseases*
F-2	Malaria			++	+ -	+ -											- Take the tarditional medicine	*- There is a prevalence of the new disease especially in Aldeia Berlisu. The people get the foots inflamed with an acute pain. Up to date they cannot identify the name of the disease, which called as Samalere in Bobonaro District.*
F-3	Itch/Skin Disease					++	++	++										
F-4	Cough and Fever								++	++								
F-5	Rheumatism																	
G.	**Animal Disease**													X	X			
G-1	Food Shortage for Animal									++	++	++					- Plant grass for the animals	
G-2	Cow/Bufallo																- Use the traditional medicines	
	(1) Neck Puffy		++									++	++				- Go to the Livestock(veterinarian).	
G-3	Goat (1) Itch																	
	(2) Stomach											+ -	+ -					
	(3) Eyes Disease	+ -										+ -	+ -					
G-4	**Pest and crop Disease**															Damage leaves of corn and beans planted together with corn and reduce the yield production		
	Locos attack corn	++											++					

Appendix-G (2-10). Trend Analysis at Suco Tohumeta

Period	Forest	Coffee Production	Farmlands	Water Sources	Landslide	Wind	Wild Fire
Portuguese time	• +18 -Traditional law to control forest resources such as Tara-bandu was effectively put in practice and enforced. The population density was very low and there were many lands for cultivation The Portuguese colonial rules over natural resources were strongly implemented in collaboration with traditional leaders.	• +2 Many of the villagers still hadn't started coffee plantation Seedling was distributed by the Portuguese government. Local king chose the person to plant coffee.	• +4 Population density in Portuguese time was low and areas for farming were abundant.	• High Water sources were abundant because forests were conserved .	• 0 It was informed that there was no landslide occurred over this period.	• 0 There was no event of wind or storm registered over this period	+2 It was recalled that some wild fires were occurred in this period mainly due to cigarette lights.
1975-1980	• +15 -Indonesian Army destroyed many forests to chase freedom fighters.	• +5 - Security condition was not stable or permitted, due to civil war and invasion of the Indonesian military - Many forests were destroyed during the period of the Indonesian occupation - Many community members were not interested in planting coffee due to lack of information regarding the value of coffee.	• +4 Over this period not many people were practice shifting cultivation due to security reasons as civil war just ended. Many people were evacuated to Indonesia.	• Moderate There was no clear information about water sources during this period, but the participants said that water was available though out the year.	• 0 It was also recalled that there was no major landslide over this period.	• 0 There was no event of wind or storm occurred over this period.	• +5 The participants considered that mass land and forest cleaning and fires initiated by the Indonesian army during this period was wild or even criminal actions.
1980-1990	• +12 In the early 1980s, the Indonesian military conducted "swap operation ", which destroyed huge amount of forest areas.	• +8 Community started planting coffee as the Indonesian government took over the administration and security condition gradually became normal	• +8 Due to the resettlement policy, many people lived away from their original places, so that they needed to	• Less During this period the volume of water was reduced due to increase of open land and deforestation.	• +2 It was informed that an event of landslide occurred over this decade due to heavy rain. The landslide affected 3 Aldeias and	• +2 In the early 1980s, a heavy wind or storm occurred during the rainy season and samaged huge areas of maize	• +6 The incidence of fires increased due to shifting cultivation.

Period	Forest	Coffee Production	Farmlands	Water Sources	Landslide	Wind	Wild Fire
	In the late 1989s, the Indonesian government implemented reforestation projects. The Indonesian government implemented the resettlement policy, which destroyed/logged huge areas of forests.	The Indonesian government distributed coffee seedlings to community members living in coffee potential areas included Tohumeta. Several private companies backed by the Indonesian military bought coffee from the community. Community started to realize the economic value of coffee.	open new farmlands close to their settlements. The Indonesian army limited the movement of people, so that new farmlands close to their settlements increased.		destroyed several water springs.	farms and resulted in failure to harvest.	
1990-1999	• +18 Government implemented reforestation projects. Many trees were planted and grown in the reforestation projects. The Indonesian government has put forest guards to protect forests from forest fires and logging for timber and firewood collection.	• +8 Community further understood the value of coffee and it was become their main livelihood. The number of coffee buyers and the areas with productive coffee trees had increased. Coffee price was considered reasonable.	• +10 As population increased, the demand for new farmland had also increased. Indonesian occupied low lands and Timorese moved to hilly/mountainous areas and practiced shifting cultivation.	• Moderate The sources of water were gradually back to normal and the volume of water gradually increased due to the expansion of secondary forests resulting from reforestation programs.	• 0 No further landslide occurred during this period, because of the result of changes in climate and shortage of rainfall.	• 0	• +8 The incidence of fires increased due to the increase of shifting cultivation and the number of people who deliberately set on fire to dried grasses during the dry season.
2000-2007	• +12 Illegal logging for construction and firewood collection has increased. Forest and land fires caused by shifting cultivation have also increased.	• +8 The Timor government has not put its priority on coffee farming. Coffee trees are already old, it gave low yield. Coffee plantation has not increased over times. Coffee companies who contact with the village is limited and the price is considered low.	• +15 Shifting cultivation or slush and burn agriculture has significantly increased and deteriorated the environment as there is no government regulation to control this activity.	• Moderate The volume of water volume has increased.	• +3 There was another landslide occurred in “Mota bemos” in 2005. The main cause of the landslide was because there was no local permission gotten from Lulic through any traditional deremony when the road as well as the water tank/reservoir were constructed by a Japanese company.	• +3 It was inform that in 2006, an event of heavy wind occurred and destroyed 9 houses and damaged many crops.	• +10 Wild fires has increased because of slush and burn agriculture or shifting cultivation without fire lines.

Appendix-G (2-11). Results of Group Discussion with Male Participants about Resources Use in the Past and Present.

Theme	Discussions
Use of land	➢ There is no landless farmer/villager in Suco. Every household has 4-5 sites (only 2 sites can be planted in a year for shifting cultivation)) for either shifting cultivation or permanent farm. The estimated holding size is about 4 ha/household. ➢ Villagers in Tohumeta do farm in their own lands (no landless). Households who want to use land from others should consult with a land owner. A user can only grow short term crop (cassava, corn and sweet potatoes) but can not grow long term crops like coffee, mango, orange etc. ➢ Traditionally, people in Tohumeta can offer a site of farm part of owned lands to a groom can comes from another to marry with their daughter and stay in Tohumeta. The ownership of the land offered still belongs to the bridge's parent but they (new couple) can use it for surviving. ➢ All lands in Tohumeta are privately owned. Those lands are inherited to the male line. ➢ Normally, the land in the village can not be sold even to members in the village. (In other words, the villagers have no practice in selling his/her land to other villagers.) ➢ There is no government land or communal land in the village. ➢ Some families in Tohumeta (6 HHs) have coffee plantations in suco Fatisi and Suco Dare. Basically the lands in other sucos are inherited from their ancestors. Some families have crop fields (shifting cultivation) in other sucos, which they can use for animal grazing or firewood/timber collection. So far there is no land dispute with other sucos.
List of major resources/ agricultural products important for livelihood development	➢ Important resources and products for their livelihoods are listed below. - Maize, Cassava, Sweet potato, Peanut, Tubers (*Kontas* and *Talas*), Beans, Pigeon peas (*Tunis*), Soybeans, Pumpkin, Banana, Vegetables (eggplant, tomato, *Brea*), Squash, pumpkins Chili, Wild tubers (*Kumbili, Maek, Kuan*) - Fruits (jackfruit, ,mango, pineapple, coconuts), Citrus (orange and lemon), Coconut - Honey, Bamboo shoot, *Tua mutin*, Wild pig, Dear (*Rusa*), Monkey, *Meda*, Snake, Coffee, Wild chicken. - Cattle/Cow, Buffalo, Goat, Pig, Dog, Chicken , Horse
Timber Trees and Forest	➢ There are several species of trees in the village such as: paratheriantes (Samtuku), eucalyptus (bubur), Red wood, hali and casuarinas. ➢ People in Tohumeta (mostly from Aldeia 1) usually cut trees for building a house and selling timbers. According to the participants, when cutting trees they should share the production/benefit among 3 parties: o Owner of land/tree : 50% o Owner of chain saw: 50% o Operator/cutter :10-15% (out of the share of the owner of chain saw) ➢ There are several places to cut trees: Own land, Manuhulu (Aldeia 2), Maubesi, and Lebu telu (Aldeia1-2). The community has to inform suco council (Chef de Suco) before cutting trees. The objective of informing Chef de Suco is to make sure that the number of trees should be not more than what the owner originally proposed (the number of trees used for making a house, uma lulik, or suco/aldeia office). Actually this is an oral regulation of Suco which has started in 2007. In relation to the regulation, people in Tohumeta should submit a proposal to the sub-district administrator as well as the staff of Forestry Division through Chef de Suco prior to cutting trees. In fact, there is still happen illegal cutting taking place in the village.

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>NTFP production</td><td>

Villagers sell firewood to people from Dili (Buyers come to the river side by truck.). Species of trees sold for firewood are red wood, casuarinas, teak wood and aidak. The price of firewood is US$ 25-30/truck.
Regarding the illegal cutting, the community considers that the suco council has no capacity or seems not to care about deforestation in the village. Some participants explained that if there is no law reinforcement from the government side, it would be very difficult for them to protect the environment.
At present, there is no Tara Bandu in Tohumeta, though Tara Bandu functioned during the Portuguese and Indonesian times. According to the participants, the regulations in terms of protecting environment was very strictly enforced in the Portuguese and Indonesian times.
A coffee tree is one of the most important sources of income in Tohumeta. Dry bean can be sold at about US$ 1.50/kg.
Only few people can access to honey. The average production is estimated at only 1 lit/HH.
Besides, the following NTFPs are produced / harvested in the villages.

<table>
<tr><th>Productions</th><th>Harvesting time</th><th>Volume of Production</th></tr>
<tr><td>Wild yam (kumbili)</td><td>June-July</td><td>2 saks/ 1 visit (3x/month)</td></tr>
<tr><td>Uhi</td><td>Dry season</td><td>2 saks/1 visit (2x/month)</td></tr>
<tr><td>Elephant foot (maek)</td><td>September-October</td><td>Same as above</td></tr>
<tr><td>Wild bean (koto moruk)</td><td>July-september</td><td>1 basket/visit (5x/month)</td></tr>
<tr><td>Bamboo</td><td>Any time
- Used for housing/building or to keep water/tua mutin</td><td>-</td></tr>
<tr><td>Tua mutin</td><td>- Dry season
- Rainy season</td><td>-5ltr/day =US$1.50/5ltr
- 10 ltr/day = US$1.00/5 ltr</td></tr>
</table>

Usually those NTFP productions grow in crop fields. Only the owners can access to the products. If other villagers want to collect the product, they should inform/consult with the owners.

</td></tr>
</table>

Appendix-G (2-12). Results of Group Discussion with Male and Female Participants about Potential Resources for Livelihood Development

List of major resources/ agricultural products important for livelihood development

- The participants identified a total of 12 resources/products important for their livelihoods and evaluated them in accordance with the criteria given as shown below.

Agriculture/Natural Resources	Resources uses		Ranking of Importance				Total Scores
			Production	Frequency of Distribution (Marketing)	Farm Activity		
	Domestic	Sell			Time	Labor	
Maize	Consume	Sell	4	3	1	1	9
Cassava	Consume	Sell	4	4	2	2	12
Banana	Consume	Sell	4	4	2	2	12
Beans	Consume	Sell	3	3	1	1	7
Vegetables	Consume	Sell	3	4	1	2	10
Fruits	Consume	Sell	2	3	2	2	10
Coffee	Consume	Sell	2	3	2	2	9
Woods (Ru, Bubur, Samatuku)	Consume	Sell	4	4	2	3	12
Stony	Consume	Sell	2	3	2	2	9
Water	Consume	-	-	-	-	-	-
Bamboo	Consume	Sell	2	1	2	2	7
Animal (Pigs, Chickens, Goats)	Consume	Sell	2	2	1	2	7

Criteria for Ranking:

Rank	Production	Frequency of Distribution (Marketing)	Time	Labor
1	Very little	< 6 months / year	Time consuming	Labor intensive
2	Little	= 6 months /year	Little time required	Little labor required
3	Sufficient	> 6 months / year		
4	Many	Every month		
5	Very many			

Discussion on all resources

- Those resources are mainly use for both domestic and marketing proposes.
- In regards to labor used for farming activities, both man and woman including children are engaged in some activities.
- Production and distribution of the product depend on its uses.

Maize

- Maize is kept dry for domestic use (eating) and some for selling. It was also kept in storage for the next cropping. The quantity for marketing is quite low, depending on the yield. They store maize at home, as it is their main staple food.
- Some farmers can have a good yield while others can not. There is a need to solve this problem.
- Producing maize from planting to harvesting is time-consuming and laborious work. Hence the scores for farm activities are low.

Cassava

- The amount for home consumption is bigger than that for sale. The reason for this was that only when they need money, they sell some portions of cassava. As compared to maize, less time and labor are required for farm activities. So the scores for farm activity are high.

Banana

- The distribution of banana is all the year round. So the score for the frequency of distribution (marketing) is high. Harvesting time is quite short and it needs less labor, thus putting high scores for farm activity.

Beans

- There are several kinds of beans such as peanut, pigeon pea, cowpea, etc. The cropping of beans (from planting to harvesting) is once a year. In general, they are mixed with corn in the farm. For example, maize can function as a stick for cow pea. They considered that cropping beans including weeding and harvesting is time-consuming and labor-intensive work..

Vegetables

- Vegetables produced in the village comprise mustard, tomatoes, kenkong, etc. Those vegetables can be harvested in a short period of time. But they need to be harvested and consumed quickly after being harvested in order to prevent them from getting damaged. Time and laborers required for farm activities are low.
- Many vegetables are just for home consumption although mustards and tomatoes are often marketed.

Fruits

- There are several fruits such as mangos, oranges, and jack fruits planted in the village. The availability of those fruits is considered limited, because it is seasonal plant. It takes more than six months to harvest. However, there is almost no need to take care of it, once planted. Thus they considered that time and labor required for production is less.

Coffee

- Coffee is considered as a main source of income, even though it can give money only once a year, as it is a perennial plant. The production of coffee is quite low because coffee plantations are limited. Labor requirement for farm activities is quite high.

Woods

- They have collected/harvested woods for dual purposes, i.e. timber and firewood. Most of woods collected are from shifting cultivation farms. Main species are Ai ru, Samatuku and Bubur. It was told that "the person who has a chain saw can get more woods compared to others". The frequency of cutting trees depends on the needs for earning cash or for building a house.

Stones

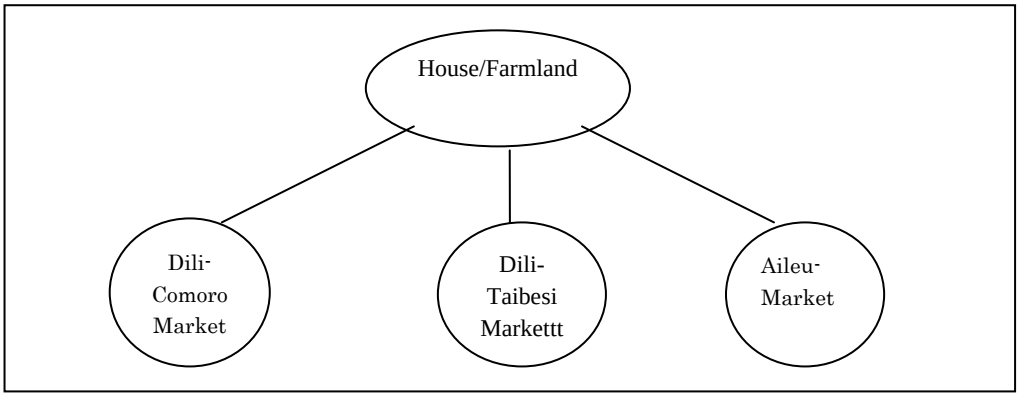
- They have collected stones from rivers and mountains. The quantity of collected stones range from 2 to 3 m^3. The collection also depends on the needs and market availability (construction, etc)

Market Analysis

- The participants evaluated the above-mentioned potential resources and agriculture products using a ranking method. The commodities/agriculture products that obtained higher scores are considered more important than others. Those are Cassavas, Banana and Woods. The following table shows a list of important products (one in the highest rank comes at first) and the respective market potentials.

Resources	Score	Where to sell	Who does the activity
Cassava	12	Market in Dili (Comoro)	Man and Woman
Banana	12	Market in Dili (door to door, Comoro, Taibesi)	Man and Woman
Woods (Ru, Bubur, Samatuku)	12	Market in Dili (road side, door to door)	Man and Woman
Vegetables	10	Market in Dili (Halilaran/Taibesi)	Man and Woman
Fruits	10	Market in Dili (Halilaran/Taibesi)	Man and Woman
Maize	9	Market in Dili (Halilaran/Taibesi)	Man and Woman
Coffee	9	Within village, Dili, Aileu	Man and Woman
Bamboo	9	Nearby village (Manleu), Dili, Aileu	Man and Woman
Stony	7	People who need to do construction	Man and Woman
Nuts	7	Dili (Comoro and taibesi markets)	Man and Woman
Animal (Pigs, Chickens, Goats)	7	Dili (Comoro and taibesi market) Aileu.	Man and Woman

Current practices in marketing major commodities



- The Flow of marketing is from house/farmland to the three potential markets, such as Comoro Market in Dili, Taibesi Market in Dili and Aileu Market.
- Maize, Cassava, Fruits, Banana and Vegetables are brought to those three markets. The frequency of selling in markets in Dili is higher than in Aileu. For Aileu they go to the market only 2 times per week. They went to Aileu markets sometimes once a month due to the fact that prices for their products in Aileu market is lower than in the markets in Dili.
- The method that they use to bring their products to the existing markets is to put the products in a sack (rice suck 25-40 Kg) and carry it on foot to either one of those market. The activities are conducted by both man and woman. For agriculture product such as vegetable, fruits and banana are selling into the markets in Dili almost every day.

	Where to Sell	Observation	Result/ Beneficiaries	Problems
	Cassava Taibesi Market	• The product is put in a suck and carried to the market. • 1 bunch (3-5 pieces) of fresh cassava costs 0.50 cent. • 1 bunch of dried cassava costs 0.25 cent. • There is no specific target buyer. • It can be sold along the road to the market as they can find immediate buyers along the way. • They have to walk for about 5 hours for going to and returning from the market.	Income US $ 4 - 5.00/day	• No transportation facility • High market competition • The price is lowered as time goes by, and therefore villagers easily loose US$ 1 – 2 from their benefit when selling cassava at the market.
	Banana			
	Market in Dili (Comoro and Taibesi)	• They bring about 8 – 10 bunches. Put them in a sack and carry it to the market. • There is no specific target buyer. It can be sold along the road to the market if they can find immediate buyers. • They have to walk for about 5 hours for return	1 bunch costs 0.25 to 0.50 cents	• There is no middle man in the market, so that they have to sit in the market by the time what they brought is sold. • The price is low due to low quality. • No transportation facility • Poor access due to floods during the rainy season
	Vegetable			
	Market In Dili(Comoro, Taibesi)	• Hanging on the shoulders. They bring 50 up to 70 bunches.	1 bunch costs 0.10 up to 0.25 cent. 40 community members have established contact with buyers in Comoro and Taibesi market. Mustards are in higher demand.	• Pests and diseases • Less water availability • They need to buy seeds and fertilizers. • Vegetables' seeds cost US $ 1.00/plactic • Fertilizer costs 0.50 cent/kg • There is no skill to make organic compost and no material.
Problems/Issues in Marketing	➢ Difficulty in transporting marketable commodities to the three respective markets. Villagers need to walk for 5 hours for going to and returning from the market. ➢ Due to poor road conditions, there is no public transportation to take from/to the village especially during the rainy season. ➢ The participants pointed out that there were the ame agriculture products from other villages at the three major markets. It is very competitive. ➢ Since many agriculture products are perishable, they need to sell them as quickly as possible before it get rottened or damaged. ➢ It was mentioned by the participants that it was the waste of time to sit down in the market whole day until the produce is sold out. They wanted to sell it quickly even at a cheaper price.			
Others	➢ Income generated from marketing agriculture products are utilized to buy various kinds of basic needs such as cooking oil, salt, kerosene, sugar, rice, ect. ➢ It was pointed out by the participants that the community has less market information ➢ Community members have no knowledge on technology to increase agriculture production.			

Appendix-G (2-13) Plenary Discussion on Customary Rules on Natural Resource Management

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Existing Rules</td><td>

There are oral regulations available in the village. The regulations were made by the council of suco in order to protect environment. The community members (the local authority of suco and other villagers) have no idea about the government regulations on protecting environment.
Tara Bandu existed in the Portuguese and Indonesian times. The villagers want to revive it again. However, Tara Bandu needs to be supported by the law enforcement of the government. Since the law enforcement during the Portuguese and Indonesian times had been very strong, Tara Bandu was effective during those eras.
According to the community, Tara Bandu would be strong /effective if it is to be done with a strong government regulation. It is necessary for the local authority to have a legal base to make the community, especially young generation in the village, follow the rules of Tara Bandu.
It seems that the local authority of suco does not have a clear idea of the Decree on Community Authority (No. 5/2004). This regulation stipulates the functions and responsibilities of suco council.
The participants enumerated the roles and responsibilities of the local authority of suco.

- Function as a conflict management body in the suco (domestic violence, land disputes etc);

- Organize a collective work of the suco;

- Control aldeias/suco/crop field boundary.
To solve a problem in the suco, the following mediation process is to be taken: Lia nain------Suco council------Chef de Suco--------Sub-district Administrator.

</td></tr>
<tr><td>Any existing cases in which those rules were implemented</td><td>
<table>
<tr><th>Cases</th><th>Mediator</th><th>Means</th></tr>
<tr><td>Crop damage by animals</td><td>Chef de Suco/aldeia Lia nain</td><td>- Killed animals that caused damage to crops
- Compelled an owner of animals to pay money for damage/ replace with something</td></tr>
<tr><td>Crop damaged by fire</td><td>Chef de Suco/aldeia Lia nain</td><td>- Compelled an owner of animal to pay money for damage
- Compelled an owner of animals to give a/ animal/s
- Make a firebreak line before burning
- All neighbors around a site should assist in burning a field.</td></tr>
<tr><td>Trees cutting</td><td>Chefe suco/aldeia</td><td>- Cut trees only 5m^3 for a house
- Do not sell timber wood
- Inform to Chef de Suco/Aldeias about cutting trees, even those in crop fields owned by someone</td></tr>
</table>

According to the government staff who attended the meeting, a forest guard of NDCF should work closely with national police for stopping illegal cutting. Both forest guards and national police are supposed to stop/control illegal cutting in the village.

</td></tr>
<tr><td>Any rules / regulations on natural resource management</td><td>

There is no government regulation relating to natural resource management at present.
All the villagers may look after water sources although there is no regulation on using water. In fact, there is a water users' group organized to control water and make sure that all the villagers can access to water sources.

</td></tr>
<tr><td>Want to rivive Tara Bandu?</td><td>

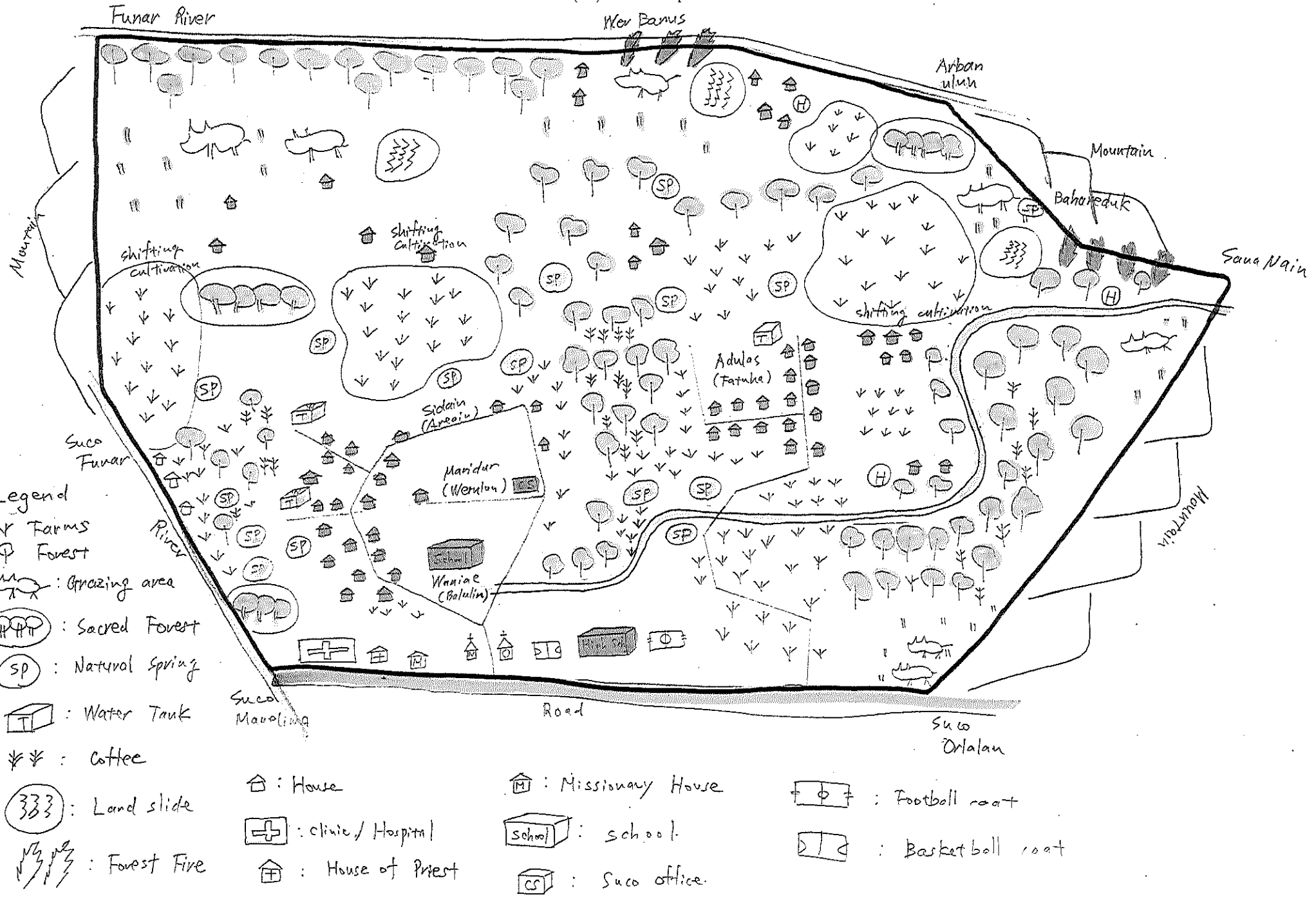
Lack of government laws is the most serious obstacle to the revival of Tara Bandu in the village. It is quite difficult for the local authority of suco to implement Tara Bandu without having a clear government regulations on environmental protection. The capacity of the local authority is too limited to implement Tara Bandu.
Limited source of income or high unemployment is also a serious problem (especially for the youth) to revive Tara Bandu and make it effective in the village. Some villagers in the

</td></tr>
</table>

Theme	Discussions
	village consider that cutting trees is one of the main sources of cash income. ➢ The local government needs government's assistance when they decide to revive Tara Bandu.
Necessary interventions to protect forests	➢ Revive Tara Bandu ➢ Disseminate information of the government laws on the protection of natural resources ➢ Introduce the government decree on the community council (Decree No. 5 2004) especially the roles and responsibilities of the local authority including the authority to create an environmental regulation of suco.

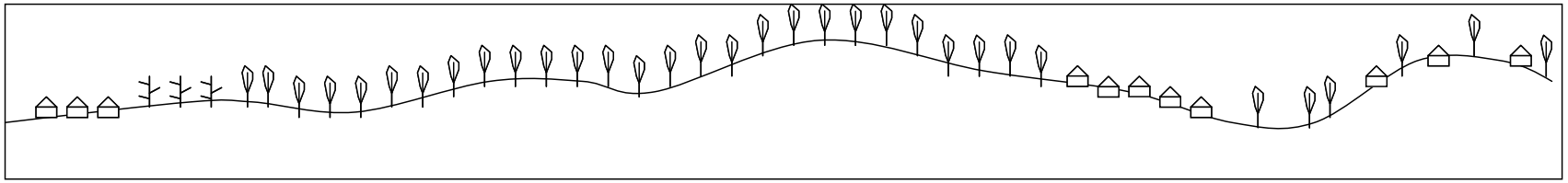
Appendix – G (3)

Results of RRA Survey at Suco Faturasa


Funar River
Wer Banus
Arban ulun
Mountain
Bahameduk
Sana Nain
Mountain
shifting cultivation
shifting cultivation
shifting cultivation
Adulas (Fatuha)
Sidain (Areain)
Maridur (Werulun)
Wainae (Balulin)
Suco Funar
River
Suco Maroling
Road
Suco Orlalan
Mountain
Legend
Farms
Forest
: Grazing area
: Sacred Forest
: Natural Spring
: Water Tank
: Coffee
: Land slide
: Forest Fire
: House
: clinic / Hospital
: House of Priest
: Missionary House
: school
: Suco office
: Football court
: Basketball court

Appendix-G (3-2) Results of RRA Survey at Suco Fatursa
- Transect Walk -

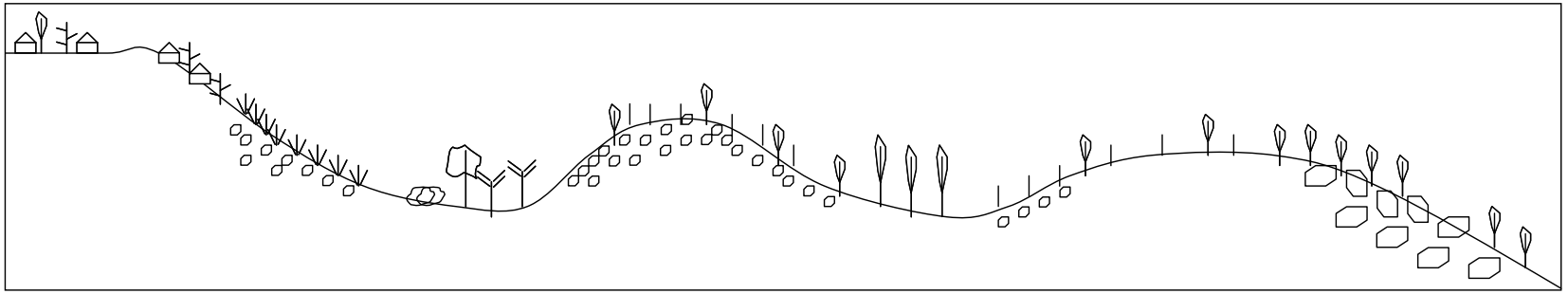
Line 1



TITLE TRASECT A		FAKULAU	MALAKUHATA	FATTUKO	LEUBMETA	RATEULUN DIMLEU	HUTTELE
1	**Current main Land use**	Homesteads, Garden, Chapel	Grazing area, Woodland for collecting firewood	Grazing area, Woodland for collecting firewood	Grazing area, Woodland for collecting firewood	Homesteads, Crop field, Grazing area, Woodland for collecting firewood	Homesteads, Crop field, Grazing area, Woodland for collecting firewood
2	**Topography**	Sloping	Sloping	Sloping	Gently sloping to flat	Sloping	Sloping
3	**Land Species**	Rather fertile	Poor	Poor	Poor	Fertile	Fertile
4	**Crop and tree species**	Accasia, Albizia, Cashew, Cassurina, Eucallyptus alba, Juckfruit, Pterocarpus spp., Banana, Coffee, Grass, Mango tree, Pinneple, Sweet Potato	Eucallyptus alba, Eucalyptus urophylla, Ai salor (local tree), grass	Eucallyptus alba, Eucallyptus urophylla, Albizia, Ai badu(local tree, for fencing), Arengga pinata (Palm tree), grass	Eucallyptus alba,Eucallyptus urophylla, Papaya tree, Taro, grass	Cassuarina, Eucallyptus europhylla, Candlenuts tree, Cassava, Coffee, Mango, Kalu, Tanemetan, Fatulu, Ai same, Taro, Corn, Soya Bean, Bean, Sweet Potato	Ambizia, Eucallyptus alba, Eucallyptus urophylla , Gotanus, Ai lete, Bamboo, Coffee, Corn, Banana, Taro, Casava, Sweet potato, Beans, Grass
5	**Availability of water**	Available	There is a water pipe but water is not available.	Aieurbutin (Permanent well), Laktiti Uma (Permanent well), Utlululi river (for livestocks)	Water in river	Water sources in Ornai (in Two locations)	Well, Ai lava (permanent), Ai Hoeda well
6	**Land Ownership**	Private land	Private land	Private land	Private land	Private land	Private land
7	**Problem**	Water dries up during the dry season.	Landslide	Land is not used by community members because the water source is located on quite steep location (Benutan). Landslide Forest fire	Water source is not used by the community because it is dried up during the dry season.	The older kids do not attend school since school and clinic are very far from their locations.	Soil Erosion
8	**Other issues**	USC Canada supported to establish a demonstration plot of terracing.	-	-	There is a need to increase the number of wells.	-	-

Appendix-G (3-2) Results of RRA Survey at Suco Fatursa
- Transect Walk -

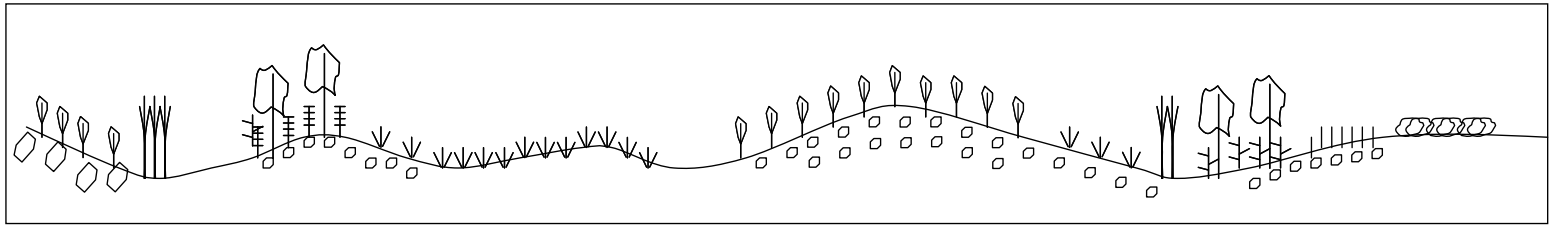
Line 2



1	**Current main Land use**	Settlements	Settlements, Gardens	Fallow land under shifting cultivation	Vegetable farm Perennial crops	Eucalyptus forest, Grazing land	Eucalyptus forest, Grazing land
2	**Topography**	Flat	Sloping	Sloping	Gently Sloping	Sloping and Rolling	Sloping
3	**Soil condition**	Brown soils with gravels	Brown soils with gravels	Brown soils with gravels	Brown soils	Red soils with stones	Red soils with stones
4	**Crop and tree species**	-	Coffee, Jackfruit, Coconut, Banana, Citrus, Tobacco, Mango	Grasses (Merdeka)	Vegetables (mustard), Palm tree, Jackfruit, Taro	Eucalyptus alba	Eucalyptus alba
5	**Availability of water**	Limited	Limited	Limited	Natural spring	Limited	Limited
6	**Land Ownership**	Private	Private	Private	Private	Private	Private
7	**Problem**	-	???? Land with steep slope	Under shifting cultivation Covered with Merdeka spp.	????	No source of water, Poor soil condition, Rolling topography, Free grazing	No source of water, Gully erosion, Poor soil condition, Free grazing, Less vegetation
8	**Other issues**			The land has been left as a fallow land for 2 years.	No conservation measures taken for water source		There is a fence made to protect the area from animals during the rainy season.

Appendix-G (3-2) Results of RRA Survey at Suco Fatursa
- Transect Walk -

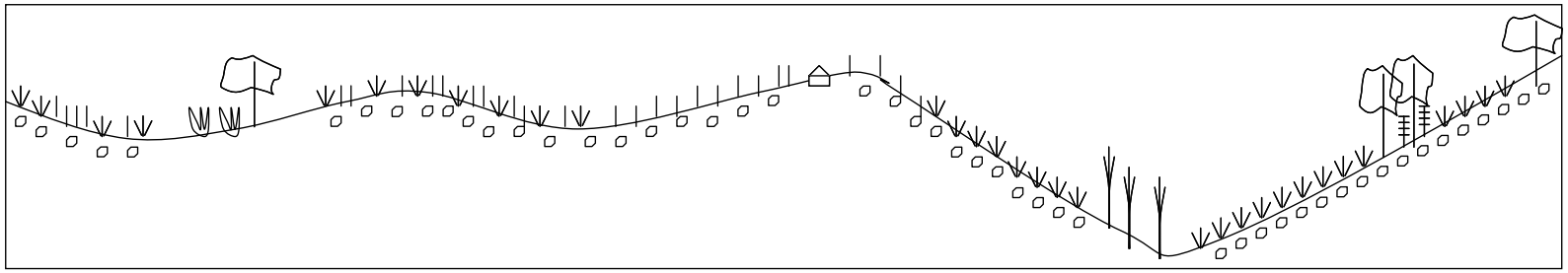
Line 3 (1)



1	**Current main Land use**	Eucalyptus forest, Grazing land	Coffee, Bamboo	Fallow land under shifting cultivation	Animal graizing	Fallow land under shifting cultivation	Coffee, Bamboo	Planting Casuarina in fallow land	Vegetable farm
2	**Topography**	Sloping	Undulating (concave)	Undulating	Sloping	Undulating	Undulating (concave)	Undulating	Gently sloping
3	**Soil condition**	Red soils with stones	Brown/Red with gravels	Brown soils with gravels	Red soils with stones	Brown soils with gravels	Brown	Brown with gravels	Brown with gravels
4	**Crop and tree species**	Eucalyptus alba	Coffee, Casusarina, Bamboo	Grasses (Merdeka), Eucalyptus alba	Eucalyptus alba	Grasses (Merdeka), Eucalyptus alba	Coffee, Areca (Betel) nut, Bamboo, Banayan tree	Grasses (Merdeka), Casuarina	Leaf vegetable (mustard)
5	**Availability of water**	Limited	Available at the bottom	None	None	None	Spring	None	Spring
6	**Land Ownership**	Private	Private	Private	Private	Private	Private	Private	Private
7	**Problem**	No source of water, Gully erosion, Poor soil condition, Free grazing, Less vegetation	Landslide	Under shifting cultivation Covered with Merdeka spp.	There is no grass to support animals. It takes time for them to find animals since they are freely grazing. .	Under shifting cultivation Covered with Merdeka spp.	Water decreases in the dry season.		There is a need to fence the vegetable farm.
8	**Other issues**	There is a fence made to protect the area from animals during the rainy season.			Villagers collect and count all the animals (cows/buffalo) once a week at the cage managed by the community.				The vegetable farm was established by a group of villagers with the assistance of USC Canada.

Appendix-G (3-2) Results of RRA Survey at Suco Fatursa
- Transect Walk -

Line 3 (2)



1	**Current main Land use**	Fallow land under shifting cultivation	Sacred banyan tree and Sisal	Fallow land under shifting cultivation	Permanent farm, House with garden	Fallow land under shifting cultivation	Bamboo	Fallow land under shifting cultivation and permanent farm	Cofee + Fallow land under shifting cultivation and permanent farm
2	**Topography**	Undulating	Undulating (concave)	Undulating	Gently sloping	Sloping	Undulating (concave)	Sloping	Sloping
3	**Soil condition**	Brown soils with gravels	Brown	Brown soils with gravels	Brown soils with gravels	Brown soils with gravels	Brown	Brown soils with gravels	Brown soils with gravels
4	**Crop and tree species**	Grasses (Merdeka), Eucalyptus alba	Cassava, Sisal, Banyan tree	Grasses (Merdeka), Pigeon pea, Cassava, Remnant of corn	Cassava, Sweet potato, Remnant of corn , Pigeon pea, Grasses, Tobacco	Grasses (Merdeka), Cassava, Remnant of corn	Bamboo	Grasses (Merdeka),	Coffee, Jackfruit, Grasses (Merdeka), Banyan tree, Remnant of corn
5	**Availability of water**	None	None	None	None	None	Spring	None	None
6	**Land Ownership**	Private	Private	Private	Private	Private	Private	Private	Private
7	**Problem**	Under shifting cultivation Covered with Merdeka spp.		Under shifting cultivation		Under shifting cultivation		Under shifting cultivation Covered with Merdeka spp.	Under shifting cultivation
8	**Other issues**		Villagers can not cut/touch the sacred tree (Banyan tree).		The family who stay there was able to harvest corn sufficient for consumption.		No water in spring during the dry season.		The space of coffee trees is too close.

Appendix-G (3-3). Results of Historical Profile

Theme	Discussions
General History	➢ The key informants were interviewed on the evening of xxxx. The key informants started telling the history of suco in the 1920's. The history of suco is largely divided into three parts, namely, i) Portuguese era (1920-1975), which was further interrupted by the Japanese occupation between 1940 - 1943, ii) Indonesian era (1975-1999), and iii) After the referendum (2000-2007).
Portuguese Era	**1920** ➢ There was no school. ➢ The former king governed the village by force of weapons/army. ➢ There were many dump people. ➢ King named Kaimauk Antonio Mesquita governed the village. ➢ Ernesto, Grandfather of King, was a guardian of King Mesquita. **In the middle of the 1920's** ➢ King Antonio Mesquita died and his son Manuel Mesquita took over the kingship. ➢ During the Manuel Mesquita's regime, his grandfather, Ernesto, governed Suco Faturasa as Chef de Suco. ➢ Sub-Aldeia Taroke was governed under the village. ➢ Chef de Sub-Aldeia (foreign) asked Manuel Mesquita to stay in Remexio. **In the late 1920's** ➢ King Manuel Mesquita governed the following areas: Tulatakeu, Suco Liurai, Faturasa, Fatulau, and Kainauk/Turiscai. ➢ People in Kaimauk were forced to be servants for King Manuel Mesquita. ➢ King Manuel Mesquita completely ruled over Turiscal and Kaimauk Kiik to Same. ➢ Ernesto Mesquita (Grandfather of King) disapproved King Manuel Mesquita's ruling and ordered him to govern only the following areas: Tulatakeu, Ito, Suco Liurai, and Fatulau **In the early 1940's** ➢ King Manuel Mesquita started governing the region from Kaimauk to Turiscai. ➢ Ernesto Mesquita (Grandfather of King) governed Suco Faturasa and built a new school. ➢ .King Manuel Mesquita called his grandfather Maubere Xavier (ASDT) go to school in Remexio. **-1975** ➢ Kontilea in Suco Fatursa fought against King Manuel Mesquita until 1975. After a long period of fighting, he escaped to Portugal.
Indonesian Era	**1974-75** ➢ Mr. Xavier Amaral started political activities in Suco Faturasa. ➢ Mr. Alarico Fernandes, Ministory of Defense of the Indonesian Government came to work in Kaitasu. **1977-78** ➢ Many people were killed by the Indonesian army in Faturasa. ➢ People in Faturasa were living with fear under the Indonesian ruling. **1980** ➢ The Indonesian regime chased 33 households from Fatubuti and forced them to say in Faturasa. ➢ The primary school was built by the initiatives of parents in Faturasa. At the beginning, there were only classes for grade 1 and 2.

Theme	Discussions
	1980-84 ➢ People in Faturasa suffered hunger because they were surrendered by the regime. ➢ The youth in Faturasa followed the KIKIS operations. **1982** ➢ Some people in Faturasa were living with fear under the Indonesian ruling. **1984** ➢ A chapel with thatch was built in Faturasa. ➢ A suco building (Bandes) was built in Faturasa for the first time. **1985** ➢ The Indonesian army came to Faturasa for the first time. ➢ Construction of a new road to Faturasa began. ➢ The office of women's group (PKK) was opened. ➢ FALINTIL started to base its resistant activities in Remehei. ➢ The roof of chapel was changed from thatch to zinc. **1986** ➢ The roof of school was renovated and changed from thatch to zinc. Six (6) classes from grade 1 to 6 started with sufficient teachers and necessary facilities. **1987** ➢ A school (Packet A) was built in Remehei. ➢ The Indonesian army (TNI) 745 destroyed and took community properties by force. **1988** ➢ The Indonesian army built 30 zinc house in Remehei. **1994-1995** ➢ PPL Mr. Pedro Vita, an agricultural extension worker, came to Faturasa for the first time. ➢ Four (4) groups received two cows each from PPL. **1995-1996** ➢ The seedlings of orange were provided. ➢ Mr. Pedro Vital was replaced with Mr. Bulu Malo. ➢ PPL started to plant seedlings of Ai matan dukur. **1996** ➢ The Government built a new clinic. ➢ A water pump was provided for the school and communities. **1997** ➢ A disease of "ISPA" broke out and 38 people died. **1997-2002** ➢ A new chapel was built. **1998** ➢ The Government developed a demonstration plot for terracing with pineapple. ➢ PPL assigned Mr. Carlos da Cruz as an agricultural extension worker for Faturasa.
Indonesian Era	**1999-2000** ➢ A resistance structure was organized. ➢ World Bank came to the village and built the office of suco.

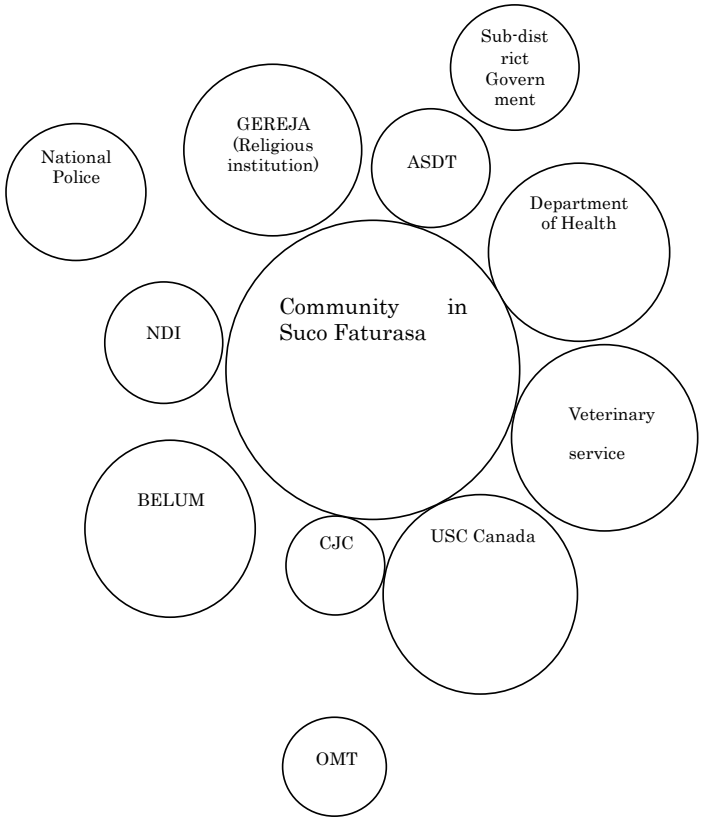
Theme	Discussions
	2000-2003 ➢ World Vision (NGO) built toilet facilities of the school in Faturasa. ➢ World Vision renovated the school building and community office. **2002-2003** ➢ World Bank built 80 zinc roofed houses. **2003-2004** ➢ World Bank built 80 zinc roofed houses. **2003-2004** ➢ World Vision renovated the clinic in Faturasa. **2003** ➢ UNICEF renovated the school building. ➢ UNICEF built a new clinic. **2004** ➢ CARE International and CDT renovated the water pump in Moai. ➢ CARE International established a water pump in Berelisu. **2004** ➢ World Vision under World Food Program provided food good for three months. **2004-2005** ➢ CARITAS Australia supported in building an INFANTIL school in Remehei. ➢ CARITAS Australia provided four sewing machines to Remehei. ➢ CARITAS Australia constructed a water tank to save rain water in Remehei. **2005** ➢ The village had heavy rainfall caused erosion and made slopes steeper. **2006** ➢ Refugees from Dili came to settle themselves in the village. ➢ FAO provided farming tools for 70 households. ➢ The Government provided refugees with food for two months. ➢ The "Two-dollars ($2) Program" for road construction launched for the first time in Faturasa. **2006-2007** ➢ The "Two-dollars ($2) Program" for road construction still continued. **2007** ➢ The Government renovated the clinic and school in Faturasa. ➢ The Alphabetic Program began.

Appendix-G (3-4). Traditional activities carried out in Suco Faturasa

Theme	Discussions
Traditional activities	➢ **"Koremetan" (Memorial service for the dead)**: This is a memorial services for the dead person. It is carried out just after one year of his/her death. The family and relatives of dead person gather to execute the memorial ceremony. ➢ **"Lia moris" (Engagement ceremony)**: This is a traditional engagement ceremony carried out between the bridegroom's and bride's family. The families exchange the betrothal gifts according to their tradition. ➢ **"Tara bandu" (Hang the prohibition):** This is a traditional ban to explore and use the resource. A livestock such as cattle, buffalo, or goat is slaughtered after being preyed for God. Then for example, an object (ex. Corn, cassava, etc.) which is subject to the prohibition is hanged at the gate of field to notify the prohibition to damage or steal the crops. Because it can be effective only for one year, it is executed every year according to the request of villagers. ➢ **"Hatama Meik and Kroat" (Ceremony for ending war)**: This is a traditional ceremony after a war in which villager have to bring their weapons; knife, machete, swords, arrow etc. to "Uma Lulik" (traditional house) as a symbol of peace. This ceremony is executed after a bloody conflict or war. ➢ **"Hari Kemerdekaan" (Independence day)**: This is to celebrate the independence of Timor Leste from the Indonesian rule. ➢ **"Hari Besar Agama" (Religious day)**: This is catholic religious days in which Christian people commemorate a special event that is determined by Church as a sacral day to remember or express thanksgiving to God or Saint. Example: Christmas day, Easter day, Saint Mary, Saint Joseph, Saint Madalena, Holy Cross, Death of Jesus etc. ➢ **"Harosan" (Cooperative work)**: This is a kind of cooperative work in land preparation for farming, house building, thatching, etc. It is done in any types of works which needs a lot of work force at one time. ➢ **"Urat animal" (Ceremony to prey God for good harvest)**: This is a ceremony to prey to God for good harvest at the end of rainy season. A kind of predicting future (Foresee) what is going to happen in the future. A *lian nain* uses animal lever as an instrument of foreseeing. ➢ **"Halo uma lulik" (Construction of sacred house)**: This is to construct a sacred house for executing the traditional ceremony and services. A house constructed and renovated in the dry season. Basically uma lulik is a symbol of family united.
Problems in carrying out the activities	➢ There are some villagers who break the rules of the ceremony. Other problems are to get drunk and make some troubles among the villagers.
Solutions for the problems	➢ The local authority should resolve the problem of violations and offences against the traditional customs. Also the villagers who break the rule have to pay the compensation.

Appendix-G (3-5). Venn diagram of existing institutions working in Suco Faturasa

Theme	Discussions
Venn diagram	➢ A venn diagram showing the existing institutions/organizations in Suco Faturasa was drawn through a group discussion with the participants of RRA as shown below.



- ➢ "ASDT" is one of the political parties in East Timor to which some villagers in Suco Faturasa belong.
- ➢ "NDI" (National Development Institute supported by USAID) is an organization that has worked mainly for capacity development of local leaders of the village, while "BELUM" is an NGO that has been working for horticulture (vegetables/fruits) development.
- ➢ "CJC" (Youth organization) and "OMT" (Women's group) are the village organizations in Suco Faturasa.
- ➢ "GEREJA" means a group of the people who gather and pray together at the church.
- ➢ "Veterinary service" indicate a person who is a member of Suco Faturasa and was trained on veterinary services. He presently functions as a community veterinarian. Community members can receive veterinary services including vaccinations of MAFF through him.
- ➢ "Department of Health" is working at a clinic constructed by UNICEF in 2003.

Appendix-G (3-6). Results of Wealth Ranking

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Criteria of Wealthiness</td><td>

There are criteria by which community members can identify household's wealth in the village.

<table>
<tr><th>Category</th><th>Criteria</th></tr>
<tr><td>Rich</td><td>a household that:
- has a member (head of household or a family member) who is a government leader;
- own a number of livestock.</td></tr>
<tr><td>Sufficient</td><td>a household that has a member who is a civil servant, teacher, nurse, PNTL, or NGO staff.</td></tr>
<tr><td>Poor</td><td>a household that:
- owns many farm lands but does not maintain or cultivate all the farm lands due to limited capacity;
- produces farm products just enough for subsistence
- raises animals (livestock) but has few herding areas for feeding animals;
- does not have enough capacity to produce their food;
- has a member who is physically disadvantaged;
- can produce a plenty of food but does not have a capacity to consume it; and
- has no parent (orphan).</td></tr>
</table>

There used to be a social hierarchy headed by king or local lord during the Portuguese era. It was abolished when the Portuguese colonial days ended.
Accordingly, very few households (about 5 % of total households in suco) are categorized as "Rich", while the majority of households in the village (about 85 % of the same) are considered as "Poor". The rest of households (about 10 % of the same) are categorized as "Sufficient".

</td></tr>
<tr><td>School Attendance</td><td>

In the Portuguese days, (~1975), only children of king's family were able to go to school.
In the Indonesian occupation (1975~1999), primary schools were constructed in some aldeias in the village. Then, children of normal households started studying at school. There were few pupils who got a master degree or diploma in higher education.
After the Indonesian era (2000~), the number of children who go to secondary or high school has increased, although it is still smaller than that in a township. There are also children who leave his/her primary school before graduation, mainly because it is difficult for them to attend school since their houses are located far from school. (The participants also pointed out that one of the reasons why children stop attending school was just his/her laziness.)

</td></tr>
</table>

Appendix-G (3-7) Seasonal Calender of Activities related to Traditional Ceremonies and Crop Production (Suco Faturasa)

NO	ACTIVITY	MONTH												Allotment of work		Problem	
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women		
A.	**Traditional Activities**																
A-1	Koremetan (ceremony for dead person after one year of his/her dealth)													+	+	- Conflict between the villagers	- Conpe
A-2	Lia Moris (traditional engagement celemony)													+	+	- Conflict between the villagers	- Conpe
A-3	Tara Bandu (Traditional ban)													+	+	- Some villagers break the rules.	- Breake
A-4	Hatama "Meik + Kroat"													+	+	-	-
A-5	Independence Day													+	+	- Getting drunk & making troubles	- Local a
A-6	Religious Day													+	+	-	-
A-7	Harosan (making group garden/mutual coorperation)													+	+	- Break Rules	- Breake
A-8	Ulat Animal (Ceremonies to offer an animal saclifiiced to God)													+	+	- Getting drunk & making troubles	- Local a
A-9	Uma Lulik (Traditional house)													+	+	- Same as above	- Same
B	**Production of annual crops**																
B-1	Land preparation (Slashing)													++	+		
B-2	Land preparation (Burning)													Slashing & Burning	Food preparation		
B-3	Seed preparation (for corn and other upland crops) <1															- Shortage of seeds	- Buy se
B-4	Preparation of peanut farm (permanent farm)															- Lack of farming tools	- Buy fa
B-5	Planting/Seeding (fro corn and other upland crops) <1													+	+	- Lack of farming tools	- Buy fa
B-6	Seeding (peanut)															- Lack of seed	- Buy se
B-7	Weeding (for corn)													+	+	- Lack of materials - Shortage of food	- Buy m
B-8	Weeding (for peanut)													+	+	- Lack of materials - Shortage of food	- Buy m
B-9	Harvesting (corn, beans, pumpkin, squash, peanut, soybean)															- Lack of bag/basket - Lack of machete	- Buy ba
B-10	Harvesting (Sweet potato)															- Lack of bag/basket - Lack of machete	- Buy ba
B-11	Harvesting (Cassava and tubers)															- Lack of bag/basket - Lack of machete	- Buy ba
C	**Other Farming Activities**																
C-1	Planting seedlings of fruits (Banana, Coffee, Bamboo, Jackfruit, Mango, Tobacco, etc.)														+	- Lack of seedling	- Buy se
C-2	Fencing													+++	+	- Lack of materials (machete, axe, iron stick, and saw)	- Buy or
C-3	Vegetable farming													+	+	- Lack of materials	- Buy m
C-4	Harvesting (coffee)													+	+	- Lack of bag - Lack of coffee miller	- Buy ba
C-5	Harvesting (Mango)																
C-6	Harvesting (Orange)																
C-7	Harvesting (Jackfruit)																
D	**Other Economic Acitivites**																
D-1	Building houses													++	+ cooking	- Lack of materials (machete, axe, iron stick, and saw)	- Buy or
D-2	Labor work at city/town													+		- No labor required for farming	- Go to
D-3	Hunting													+			
D-4	Harvesting (honey)													+	+	- Lack of container and rope	Buy or b

Note:
<1: Maize, Tunis, Beans, Pumpkin, Squash, Soybean, Cassava

Appendix-G (3-7) Seasonal Calender of Activities related to Harvesting Seasons of Major Agricultural Products

NO	ACTIVITY	MONTH												Sale/Consumption		Problem	
		1	2	3	4	5	6	7	8	9	10	11	12	Consumptio	Sale		
H	**Agricultural Crops**																
E-1	Corn			+										+		- Shortage of rainfall - Crop damage by rat and wind	- No me
E-1	Cassava	+	+	+	+									+		- Shortage of rainfall	- Same
E-2	Sweet potato													+		- Same as above	- Same
E-3	Kontas													+		- Same as above	- Same
E-4	Mango	+	+	+	+									+	+	- Shortage of rainfall - Existence of competitors - Cost of transportation	- No me - Give p
E-5	Peanut			+	+									+	+++	- Shortage of rainfall - Crop damage by rat	- Keep
F-1	Vegetables					+	+	+	+	+	+			+	+++	- Shortage of rainfall - Crop damage by insect - Existence of competitors - Cost of transportation	- No me - Give p
F-2	Forest Beans					+	+	+						+		- Shortage of rainfall	-
F-3	Maek						+	+	+					+		- Same as above	-
F-4	Kumbili						+	+	+					+		- Same as above	-
G-1	Coffee						+	+	+					+	+++	- Shortage of rainfall - Existence of competitors - Cost of transportation	- Keep
G-2	Honey					+	+							+	+++	- Strong wind - Existence of competitors - Cost of transportation	- Keep
G-3	Tua mutin	+	+	+	+	+	+	+	+	+	+	+	+	+	+++	- Existence of competitors - Cost of transportation	- Drink a
G-4	Orange					+	+							+	+++	- Shortage of rainfall - Existence of competitors - Cost of transportation	- Give p
G-5	Goat	+	+	+	+	+	+	+	+	+	+	+	+	+	+++	- Animal diseases - Lack of feed - Existence of competitors - Cost of transportation	- Ask a - Use m
G-5	Pig	+	+	+	+	+	+	+	+	+	+	+	+	+	+++	- Same as above	- Same
G-5	Chicken	+	+	+	+	+	+	+	+	+	+	+	+	+	+++	- Same as above	- Same

Appendix-G (3-7) Seasonal Calender of Activities related to Humand and Animal Diseases

NO	ACTIVITY	MONTH												Allotment of work		Problem	Solution	NOTE
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women			
E.	**Climatic condition and Natural Calamity**																	
E-1	Wind	++	++											X	X	The window destroys the crops	- Just go to the another place to find food	*- On January the wind destroys the corn and other crops.*
E-2	Rain	++	++	++	+ -	- -						+ -	+ -					
E-3	Landslide			+ -											X	Erosion	- Save and plant the seedlings of trees and bamboo, - Ask some NGOs to provide them with seedlings	
E-4	Food Shortage	++	+ -									+ -	+ -	X	X	Hunger	- Limit their meal to eat once a day	
E-5	Shortage of water								+ -	+ -	++					No Water	- Use another water source which is located in 500m from suco	
F.	**Human Disease**													X	X			
F-1	Diarrhea												++				- Go to the clinic/hospital - Take the tarditional medicine	*- Sometimes people are died by these diseases* *- There is a prevalence of the new disease especially in Aldeia Berlisu. The people get the foots inflamed with an acute pain. Up to date they cannot identify the name of the disease, which called as Samalere in Bobonaro District.*
F-2	Malaria						++	+ -	+ -	+ -	+ -	+ -	+ -					
F-3	Itch/Skin Disease					++	++	++										
F-4	Cough and Fever						++	++	++	++	+ -							
F-5	Rheumatism		+ -	+ -														
G.	**Animal Disease**													X	X			
G-1	Food Shortage for Animal								+ -	+ -	+ -	++					- Plant grass for the animals - Use the traditional medicines - Go to the Livestock(veterinarian).	
G-2	Cow/Bufallo																	
	(1) Neck Puffy						+ -	+ -										
G-3	Goat																	
	(1) Itch								+ -	+ -								
	(2) Stomach											+ -	+ -					
	(3) Eyes Disease			+ -	+ -	+ -												
G-4	Pig																	
	(1) Head Puffy and Body Shaking						+ -	++	+ -									
G-5	Chicken																	
	(1) Mouth,Eyes Injoury						+ -	++										
	(2) Head become black colour and Feces become white colour.						+ -	++										

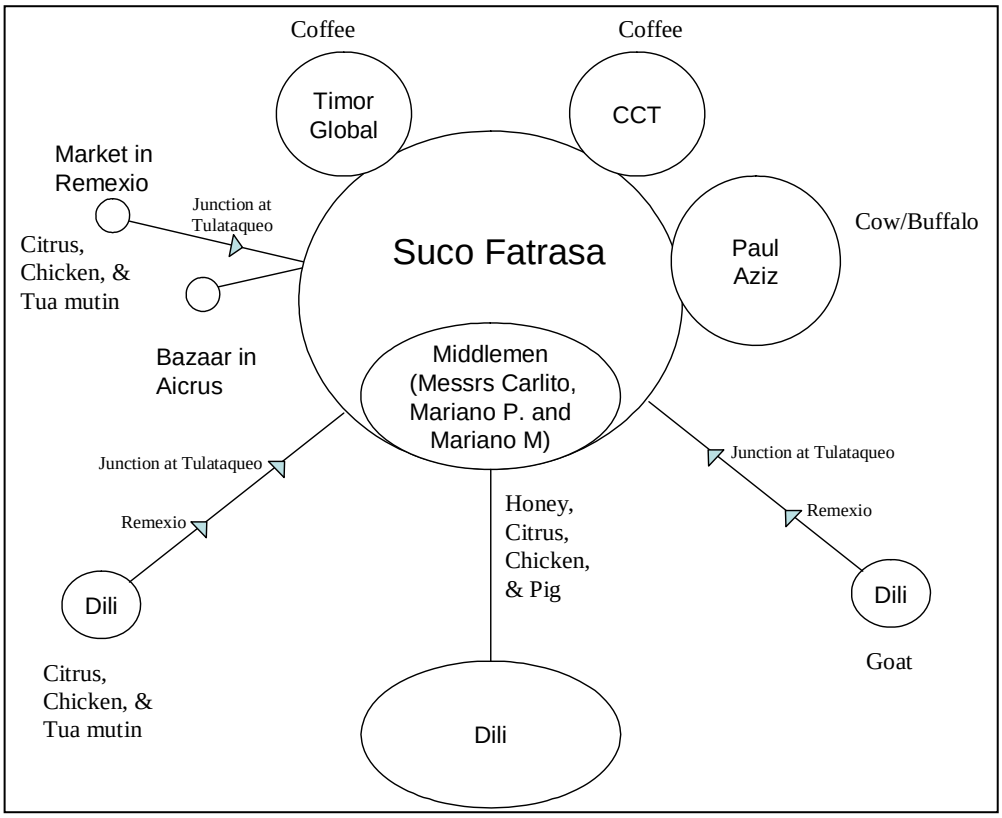
Appendix-G (3-8). Trend Analysis at Suco Faturasa

Period	Income	Maize production	Cassava production	Koto Marek (Wild beans)	Kumbili (Sweet Yam)	Honey	Maek (Wild tuber)	Livestock (goat, pig, etc)	Land availability	Water	Forest	Forest fire	Wind	Crop damage by pest	Climate (Drought)	Landslide
1960-1975	0 • All incomes they gained were used for tax payment.	+ 5 (40-60 bdls) • Soils were in good condition. • There was no strong wind. • Ave production: 40-60 bundles.	+1 • Cassava was often damaged by wild pigs.	+10 • There were main dense forests. • There were few animals eating the beans.	+10 • There was no damage caused by animals because of its thorns/ spines. • Its capacity to regenerate is vigorous.	+10 • There were many dense forests. • The yield of honey was high.	+10 • They rarely consumed it. • There were few animal damage.	+2 • They lived in a nomadic way to escape from the imposition of tax.	???? • The households were distributed over the territory of suco and used more than half of the area.	+5 • Many households lived near sources of water. • There was no tree cutting or shifting cultivation.	+10 • The area was extensively covered with forests. • Tara bandu was effective in protecting forests.	0 • Tara bandu was effective in minimizing forest fire occurrence. • Law enforcement of the government was strong.	0 • There was no damage caused by wind.	0 • None	0 • None	+1 • There was a landslide in 1976.
1975-1999	+4 • They were able to same money.	+21 (20 bundles) • Crops were damaged by pests diseases. • There were long droughts. • The rainfall pattern of the area fluctuated.	+5 • Many wild pigs were hunted. • Because of “Goton-yoron”, the cropped area of cassava expanded.	+5 • There were many animals eating the beans. • Expansion of weed (A. Merderek) suppressed the beans.	+10 • Same as above • It can be propagated sexually and vegetatively. • The crop is tolerant of drought.	+10 • Same as above	+10 • Same as above	+5 • After 1980, the Indonesian government encouraged villagers to raise animals (cattle and goat). • Animals were killed during the civil war.	+10 • They were forced to stay at the village and not to use remote areas for shifting cultivation.	+5 • Forests were burnt and cut for shifting cultivation or animal raising. • There were droughts and landslides.	+5 • Forests were burned by the Indo army for its operation or hunting. • Local people also burned forests for	+10 • Forest fires were often caused by the Indo army for its military operation as well as hunting. • Shifting cultivation also	+5 • Strong wind often damaged crop production.	+10 • Corn and kontas were damaged.	0 • None	0 • None

											shifting cultivation and hunting.	caused forest fires.				
1999-2000	+2 • There was no agricultural produce to market.	0 (0 bundles) • There was no corn produce since they evacuated from the area.	+5 • There was no effect made by the civil war. • They were able to harvest cassava planted in 1997/98.	+5 • Same as above	+10 • Same as above	+5 • Long droughts shortened the flowering season.	+10 • Same as above	+3 • Animals were left at the village and most of them were either stolen or killed by the Indonesian army or other villagers.	+10 • Same as above	+5 • Same as above	+3 • Its coverage decreased owing to shifting cultivation, timber collection, forest fires for hunting, and landslides.	+5 • Forest fires were caused mainly by sifting cultivation.	+10 • Same as above	+10 • Same as above	+5 • There was a long drought.	0 • None
2001-2007	+3 • There are government and NGO projects assisting in income generating. • They have agricultural commodities to sell, such as coffee, honey, and tua mutin.	+3 (30 bundles) • They can expand the cropping area because of “Harosa”, which is the mutual aid system called “Gotong Yorong” during the Indonesian era.	???? • Production of cassava is affected by pest and rat infestations.	+1 • The area where the beans grow is limited. • Hence, they plant the beans in their farm.	+10 • Same as above	+3 • Strong winds dropped flowers and honey combs.	+10 • Same as above • They consume it only when they face a shortage of food.	+2 • Animals are killed by pests and diseases.	+5 • They can use any places, even those far from the village.	+5 • Current climate condition is the same as it was before.	+2 • Deforestation caused by shifting cultivation progresses as the population increases.	+7 • Same as above • Forest fires have increased with the increase of population. • There are also forest fires caused by people of other villages.	+10 • Same as above	+10 • Same as above	+5 • The dry season becomes longer than before.	+2 • There were two landslides in 2003.

Appendix-G (3-9). Results of Group Discussion with Male Participants about Resource Use and Potential Resources for Livelihood Development

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Use of land</td><td>
➢ There is no landless farmers/villagers in Suco. Every household has 4-5 sites for either shifting cultivation or permanent farm. The estimated holding size is about 5 ha/HH.
➢ However, the productivity of land (quality of land) is not good in general. Therefore, many households need to use lands that belong to large land owners for shifting cultivation.
(Generally, villagers use their own lands for shifting cultivation. But those who have few productive areas sometimes face difficulties in using their lands for farming since they need to take 3~5-year fallow period after shifting cultivation.
➢ Accordingly, the lands owned by 75 % of households in the village are not much productive. In the case of Remehei, only 17 HHs out of 65 HHs own the productive areas. Thirteen (13) HHs of 47 HHs in Kaitas and five (5) households in Fakalau (63 HHs) have productive lands.
➢ In general, the large land owners are “clans” who have owned the lands since its ancestor. The clans owns many productive lands or lands in good condition.
➢ The “tenant farmers” do not need to pay the owner for the rent in cash nor even in kind. But the tenant can not be allowed to plant trees or perennial crops in the land.
➢ Normally, the land in the village can not be sold even to members in the village. (OR The villagers have no practice in selling his/her land to other villagers.)
➢ The land is inherited to the male line. (or inherited patrilineally.)
But there is also a case where some parts of lands of the household are given to his sister/daughter, when she as no land or less land to cultivation.) In this case the couple would stay in the village where her brother or father lives.
➢ There is no government land or communal land in the village.
➢ All the lands in the village are clearly distributed to the households in the village.
</td></tr>
<tr><td>Resources in locality</td><td>Please refer to Table xxx.</td></tr>
<tr><td>List of major resources/ agricultural products important for livelihood development</td><td>
➢ Important resources and products for their livelihoods are listed below.
- Maize, Cassava, Sweet potato, Peanut, Tubers (Kontas and Talas), Beans, Pigeon peas (Tunis), Soybeans, Pumpkin, Banana, Upland rice, Vegetables (eggplant, tomato, Brea), Markiza, White pumpkin, Squash, Chili, Wild tubers (Kumbili, Maek, Kuan)
- Fruits (jackfruit, ,mango, pineapple), Citrus (orange and lemon), Coconut
- Turmeric (Kinur), Ginger, Honey, Ai clila duku, Tamarindo, Ai dark, Bamboo shoot, Tua mutin, Wild pig, Dear (Rusa), Forest fruit (Uhak), Squirrel (Laku), Monkey, Meda, Snake, Coffee, River prawn, Eel (?), Wild chicken, Pigeon (Pobu), Eagle.
- Cattle/Cow, Buffalo, Goat, Pig, Dog, Chicken (including egg), Horse
(Those in bold letters were considered important.)
➢ The five most important resources/products are:
- Coffee, Chicken, Citrus, Cattle&Buffalo, Pig
</td></tr>
<tr><td>Pair-wise ranking among the important resources/ agricultural</td><td>
➢ Important resources and products for their livelihoods are listed below.
<table>
<tr><th></th><th>Coffee</th><th>Chicken</th><th>Citrus</th><th>Cattle/Buff</th><th>Pig</th></tr>
<tr><td>Coffee</td><td></td><td>Coffee <1</td><td>Coffee <2</td><td>Coffee <3</td><td>Coffee <4</td></tr>
<tr><td>Chicken</td><td></td><td></td><td>Chicken <5</td><td>Cattle/Buff <6</td><td>Pig <7</td></tr>
<tr><td>Citrus</td><td></td><td></td><td></td><td>Cattle/Buff <8</td><td>Pig <9</td></tr>
<tr><td>Cattle/Buff</td><td></td><td></td><td></td><td></td><td>Cattle/Buff <10</td></tr>
<tr><td>Pig</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

Theme	Discussions
products	➢ The reasons for selection are as follows: <1: The price of coffee is higher than that of chicken. Hence, coffee can improve economic conditions of households. Drinking coffee inspires them. <2: The price of coffee is higher than that of chicken. Hence, coffee can improve economic conditions of households. Coffee can be sold at the village. Citrus must be brought to Dili for sale. Furthermore, citrus often get damaged during transportation to Dili. <3: Coffee is the primary means to earn money for buying daily necessities. <4: Coffee has more important value. <5: Chicken can be sold anytime and its price is also good. Citrus can be harvested only once a year. <6: Chicken is in high market demand. But cow/buffalo is also considered important, because: - High marketing price; and - Necessity of traditional ceremony. <7: Pig has high economic value. Pig can be used for a traditional ceremony. <8: The price of cow/buffalo is high. Cow/Buffalo is used for a cultural ceremony. <9: Same as above. <10: Same as above.
Current practices in marketing major commodities	➢ Major agricultural commodities are currently marketed in the following manners. 

Theme	Discussions

Commodities	Main Buyers (Marketing Outlets)	Place of sale
Coffee	CCT (2006) and Timor Global (2007) <1	4 aldeias of suco
Honey	Middlemen (Messrs Carlito and Mariano) in the village. <2	- ditto -
Citrus	The majority are sold to the middlemen (Messrs Carlito and Mariano) in the village. The rest are sold at the bazaar/market in Aicrus and Remexio.	4 aldeias of suco Aicrus and/or Remexio
Tua Mutin	Sold at the markets in Dili and Remexio, bazaar in Aicrus, and to members of the village.	Dili, Remexio Aicrus 4 aldeias of suco
Chicken	Middlemen (Messrs Carlito, Mariano P. and Mariano M) in the village.	4 aldeias of suco
Goat	Sold to communities living in Dili.<3	Dili
Cow/Buffalo	Butcher/Slaughterer (Mr. Paul Aziz) <4	Suco
Pig	Middlemen (Messrs Carlito, Mariano P. and Mariano M) in the village.	4 aldeias of suco

Note:
<1: There was no buyer coming to the village before 2004.
<2: They started buying honey from 2000. Honey was sold at Dili before 2000.
<3: The current price of goat is lower than that during the Indonesian era.
<4: Mr. Aziz sends one staff here to find cow and negotiate with owners when buying cow.

Problems/Issues in Marketing

- Existence of competitors (There are many products in the market when they sell their produce.) in marketing cassava, citrus, mango, pineapple, jackfruit, banana, etc.
- High transportation cost (Because of high transportation cost and low selling price, they do not gain any profit or lose by selling their products.)
- Poor accessibility (because of lack of transportation facilities and poor road condition)

Transportation cost

Start - End	Means <1	Cost	Remarks
Faturasa-Tulataqueo	on foot	None	1 hr 20 min walking
Tulataqueo -Remexio	Public bus	US$ 0.5/person US$ 0.5/bag US$ 1.0/goat	There is no service during the rainy season. It takes 3 hrs on foot.
Remexio -Dili	Public bus	US$ 1.5/person US$ 1.0/bag US$ 2.0/goat	It takes 8 hrs on foot.

Note: The principal transportation means in the suco is a small public bus.

Appendix-G (3-10). Available Resources

Available resources	Season	Places of Collection/Harvest	Difficulties in collection	Practices/Customs	Remarks
Honey	April-May	• Forests of Ai Lele, Ai Nitas, and Ai Hali (In Remehie, 3 clans (17 HHs) can harvest honey at a rate of 5 drums (200 lits)/HH/yr. The household that owns the land can harvest honey, but other farmers need to have permission from the owner to harvest honey. Production of honey in the other aldeia is about 2-5 lit/HH.)	• Accidents (Collectors fall down from trees and/or are often stung by honey bees.)	Practices ➢ Cover all the surfaces of body with a blanket and a jute bag/mosquito net. ➢ Light grasses with Ai hua to smoke a bee nest. ➢ Use a rope to climb a host tree with a lighted stick of Ai hua. en can cut and carry trees.) Custom: ➢ Mark a host tree with betel nut (reddish color) and prey. ➢ Treat a collector (Ailaleh) of honey by corn or "Batar toku". ➢ Eat some comrs and leave the rest under the host tree.	-
Tua Mutin	All year around	• Produced mainly in Belresu. (Eight households are actively engaged in Tua Mutin collection. The rate of production is 10 lit/day.)	• Accidents (Collectors fall down from tua metan.)	Custom: ➢ Put a bamboo container at a branch/bunch of tua metan. ➢ Leave sap of tua mutin seep out until the bamboo container is full with sap (for about 7 days). ➢ Kill a chicken and put it under tua metan with corn.	-
Ai Kamel (Sandal wood)	None	-	• Time consuming • Difficult to bark trees • Heavy to carry (about 8 persons are needed to carry one log.) • Difficult to find tools (axe, saw, machete) • Men's work	None	Villagers had never cut Sandal wood since they did not know the value of sandal wood. They were aware of its value when the person from Dili cut the tree last year.
Ai Saria, Ai nitas, Ai na, Ai ru, and Ai kakeu (Casuarina) for timber	All year around	n.a.		-	But Ai sarina, Ai nitas, and Ai na are generally not cut since they are very hard.
Ai bubur for honey or construction materials	-	-		-	
Ai lele, Ai nitas, Ai hari, and Ai mutin for honey	-	-		-	
Bamboo for roofing and walling	March	n.a.	n.a.	n.a.	Villagers have planted bamboo.

Appendix-G (3-11). Results of Group Discussion with Female Participants about Resource Use and Potential Resources for Livelihood Development

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Use of land</td><td>

Land for cultivation is abundant and available everywhere in Suco Faturasa.
The average land holding size in the village is estimated at 2 ha/HH, though some of families own the land more than 2 ha.
When a community member needs land for cultivation, he/she can ass the heads of “clan family” in each aldeia (The heads of clan families in each aldeia are tabulated below.). The clan families whose ancestors fought again the Portuguese government as leaders to protect their lands are traditional and large-scale landlords in the village. A tenant (a family who rants land for farming) is allowed only to grow annual crops, but not to plant perennial crops (trees and fruits) or to construct houses.

<table>
<tr><th>Aldeia</th><th>Head of clan families</th></tr>
<tr><td>Fakulau</td><td>Mr. Tomas</td></tr>
<tr><td>Remehei</td><td>Mr. Ramiro Filipe</td></tr>
<tr><td>Kaitasu</td><td>Mr. Moises</td></tr>
<tr><td>Berelisu</td><td>Mr. Agostino Beremau</td></tr>
</table>
</td></tr>
<tr><td>Resources in locality</td><td>

The women participants (four women) identified five principal resources important for their daily life, namely, i) Land; ii) Water; iii) Forest; iv) Grass; and v) Wood.
The participants further identified the locations where those resources available in each aldeia (sub-village) as tabulated below.

<table>
<tr><th>Resources</th><th>Fakulau</th><th>Remehei</th><th>Kaitasu</th><th>Berelisu <1</th></tr>
<tr><td>Land</td><td>Over the area (?)</td><td>Over the area (?)</td><td>Over the area (?)</td><td>-</td></tr>
<tr><td>Water</td><td>Rihau, Raimertu, Airikua, Aieran, Titkoin, Maunkair, Semok, Manumata, Hunloko, Raitoho, Uhululi, Fatuvou, Remanaru, Fakulau</td><td>Australia Kedei, Maundelo, Kaea, Likenu, Erbuburlaran, Mulalan</td><td>Aitane, Umaki, Waimeran, Barino, Kudaluhan</td><td>-</td></tr>
<tr><td>Forest</td><td>Uhululi</td><td>Lemosuk, Ai metalau, Kaea, Banetar, Terlete, Hautle, Likenu, Taroke, Kamasik, Ailuan, Reliku, Aieran</td><td>Aitane</td><td>-</td></tr>
<tr><td>Grass</td><td>Uhululi, Remanaru, Fakulau</td><td>Ai metalau, Maunaru, Manulima, Oreda, Aikaslalan, Erbuburlaran, Taroke</td><td>Lausero</td><td>-</td></tr>
<tr><td>Wood</td><td>Remanaru</td><td>Maunaru, Hautle, Oreda, Aikaslalan</td><td>Aitane, Kudaluhan</td><td>-</td></tr>
</table>
Note: <1 There was no information about Aldeia Berelisu since no one participated in the discussion.

Findings obtained through discussions made by the participants are highlighted as below.

Water: A number of sources of water (both natural spring and tapped water) are located in the food of the hills. Hence, families living around ridges of hills and mountains need to come down and climb up a steep hillside whenever they fetch water. Accordingly, women in a household fetch water for cooking and other domestic purposes trice a day. Bathing and washing clothes are done at the sources of water.

Forests: Firewood and other forest products (such as timber) are distributed mainly in Aldeia Remehei. There is no customary rule/regulation in the village to restrict the collection of firewood and forest products or to protect forest/woodland from overexploitation by firewood collection. Community members even those living in the other aldeias can collect firewood and forest products in Remehei. On average, one family collects firewood every day or every other day. Recently, the location of forest/woodland for firewood collection is being changed due to the decrease of
</td></tr>
</table>

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td></td><td>available eucalyptus stands.

Grasses: Grassland is used for grazing livestock as well as collecting roofing materials. Free grazing is a common practice in raising animals. Owners of livestock check and count their animals only once a week. Like forest/woodland, grassland for grazing has declined and been insufficient for raising animals in the village, especially during the dry season.</td></tr>
<tr><td>List of major resources/ agricultural products important for livelihood development</td><td>➢ Important resources and products for their livelihoods are listed below.
- Maize, Cassava, Potatoes, Tubers (Talas, Kontas), Pigeon pea (Tunis), Red beans, Peanut, Pumpkin, Beans, and Ai same
- Water, Trees, and Land

➢ The five most important resources/products are:
- Water, Land, Trees, Maize, Cassava

➢ Use of the above-listed resources are summarized below.

<table>
<tr><th>Resources</th><th>Usage of Resources</th></tr>
<tr><td>Water</td><td>Used for cooking, washing, showering, watering, drinking, and animal raising.
Used as construction materials mixed with cement.</td></tr>
<tr><td>Land</td><td>Used for farming and as bases for houses and vegetation</td></tr>
<tr><td>Cassava</td><td>Eaten boiled, fried and roast
Used for animal feed
Used for making cassava chips and tapioca</td></tr>
<tr><td>Maize</td><td>Eaten as a staple diet
Used for animal feed</td></tr>
</table></td></tr>
<tr><td>Pair-wise ranking among the important resources/ agricultural products</td><td>Important resources and products for their livelihoods are listed below. Results of Pair-wise ranking

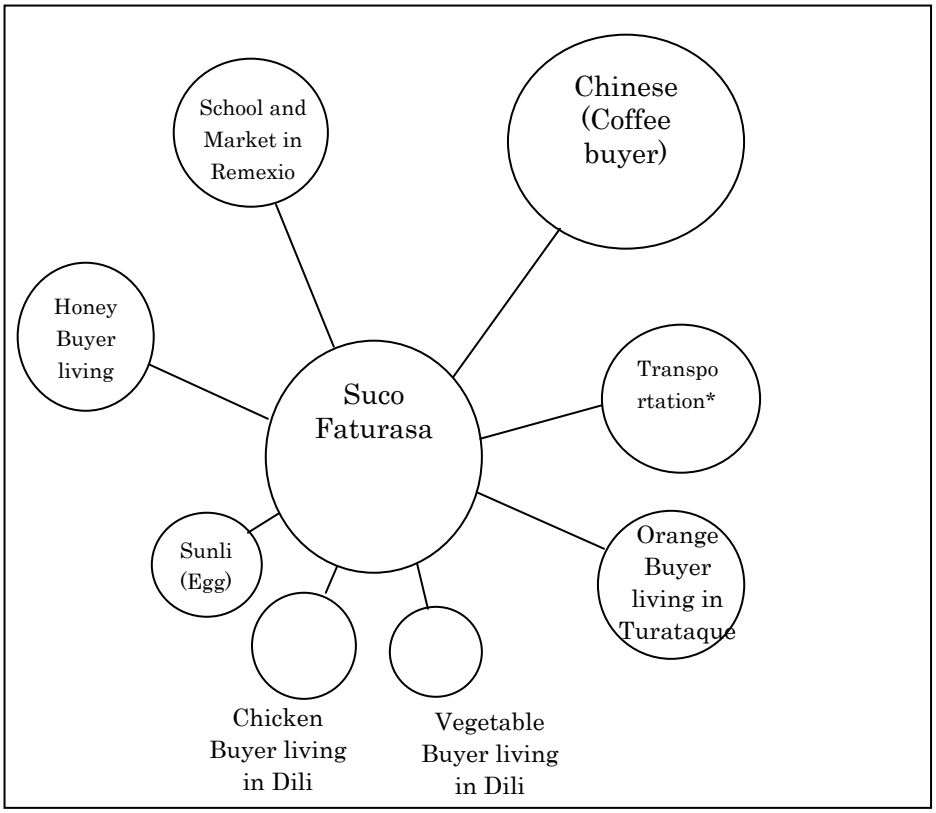
<table>
<tr><th></th><th>Water</th><th>Land</th><th>Trees</th><th>Maize</th><th>Cassava</th><th>Total</th><th>Rank</th></tr>
<tr><td>Water</td><td></td><td>Water <1</td><td>Water <1</td><td>Water <1</td><td>Water <1</td><td>4</td><td>1</td></tr>
<tr><td>Land</td><td></td><td></td><td>Land <2</td><td>Land <2</td><td>Land <2</td><td>3</td><td>2</td></tr>
<tr><td>Trees</td><td></td><td></td><td></td><td>Maize</td><td>Cassava <3</td><td>0</td><td>5</td></tr>
<tr><td>Maize</td><td></td><td></td><td></td><td></td><td>Cassava <3</td><td>1</td><td>4</td></tr>
<tr><td>Cassava</td><td></td><td></td><td></td><td></td><td></td><td>2</td><td>3</td></tr>
</table>
➢ The reasons behind the judgements are as follows:

<1: The villages selected “Water” as the most important resource considering that it can be used for multiple ways, such as drinking, cooking, and watering.

<2: They also judged “Land” the second important resources, since it is a base for forests and other vegetation, agricultural crops, and houses.
<3: The score of “Cassava” was higher than that of “Maize” because it can be stored for several years in the field.
<4: Although the participants gave “Trees” the lowest priority, they also mentioned that it is necessary for them to protect “Trees” because of its important functions.</td></tr>
<tr><td>Current practices in marketing major commodities</td><td>➢ Cassava and maize are used for only home consumption.

➢ The following products and resources were selected as those sold outside the village.

<table>
<tr><th>Resources</th><th>Main Buyers (Marketing Outlets)</th></tr>
<tr><td>Coffee</td><td>A Chinese living in Dili visits the village to buy coffee beans.</td></tr>
<tr><td>Honey</td><td>Honey is sold in Dili mainly to people living in Dili.</td></tr>
<tr><td>Peanut <1</td><td>Peanuts are packaged and sold at the school or market in Remexio.</td></tr>
<tr><td>Orange</td><td>Oranges are sold at the bazaar in Tulataqueo.</td></tr>
<tr><td>Chicken <2</td><td>Chicken is sold in Dili to people living in Dili.</td></tr>
<tr><td>Egg <2</td><td>Eggs are sold to Sunli Company (Chinese-Timor Company) at the village.</td></tr>
<tr><td>Vegetables</td><td>Vegetables are sold to the Halilaran market in Dili every week or every two week.</td></tr>
</table>
Note: <1 Peanuts are sold after being shelled, roasted, and packaged. The processing and marketing of peanut are women’s work.
<2 Raising chickens and picking eggs are women’s work, while raising relatively big</td></tr>
</table>

Theme	Discussions
	animals, such as cattle, goats and pigs, are under men's responsibility. ➢ Coffee, peanut, orange and honey can bring community members cash income just once a year, while other products such as chicken, egg and vegetables can generate cash income several times. ➢ The following diagram shows marketing flows of the major agricultural commodities. 
Problems/Issues in Marketing	➢ Difficulty in transporting marketable commodities to the respective markets - Community members must walk for 5 km with products to take public transportation from Tulataqueo. - Due to poor road conditions, there is no vehicle to get to the village especially during the rainy season. ➢ Lack of marketing competitiveness of the products - It is difficult for them to sell their farm products (such as orange and vegetables) in the peak harvesting seasons, since there are many produce coming from other areas in the market.
Others	➢ There is no cooperative and other collective form for marketing farm products in the village.

Appendix-G (3-12). Plenary Discussion on Customary Rules on Natural Resource Management

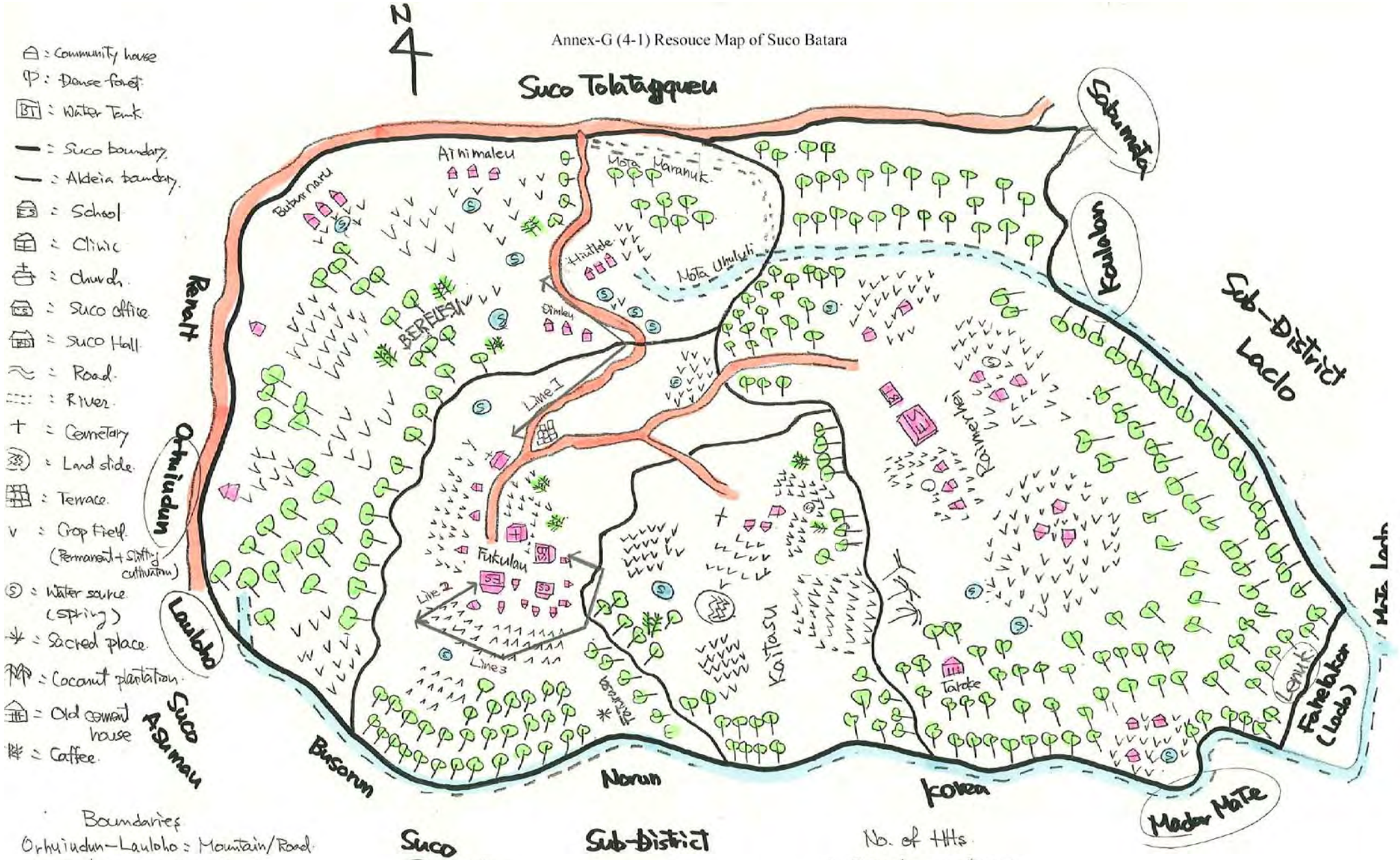
<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Existing Rules</td><td>
➢ There are three types of rules governing the activities of villagers, namely, i) Adat, ii) Local regulations of Suco, and iii) Government Regulations.
➢ Adat is the local tradition of Suco, such as customary practices in getting engaged/married and those in having family death. A group of Lianain, composed of Chef de Suco, Chef de Aldeias of four aldeais (sub-villages), Representative of church and Elders in suco, plays an important role in following such traditional practices.
➢ The local regulations of suco are rules resolved by the village council. Chef de suco is responsible for its implementation.
➢ The Decree on Community Authorities (No. 5/2004) is the government regulation that defines the roles and responsibilities of the local authorities in suco.
➢ The following are given by the participants as roles and responsibilities of the local authorities of Suco.
- Establish a base of the government of RDTL at suco level;
- Oversea and manage public infrastructure/facilities (road, school, clinic, and environment) in suco;
- Organize a general meeting among members of suco; and
- Resolve any issues/conflicts within in suco.
</td></tr>
<tr><td>Any existing cases in which those rules were implemented</td><td>
<table>
<tr><th>Cases</th><th>Mediator</th><th>Means</th></tr>
<tr><td>Crop damage by animals</td><td>Chef de Suco
Lianain</td><td>- Killed animals that caused damage to crops
- Compelled an owner of animals to pay money for damage</td></tr>
<tr><td>Coffee damage by animals due to forest fire</td><td>Chef de Suco
Lianain</td><td>- Compelled an owner of animals to pay money for damage
- Compelled an owner of animals to replant coffee</td></tr>
</table>
➢ There have been no case where the above rules were implemented for deforestation caused by forest fire.
</td></tr>
<tr><td>Any rules / regulations on natural resource management</td><td>
➢ There is no government regulation relating to natural resource management at present.
➢ There is a customary rule to control the harvest of honey, but there is no customary rule to control the exploitation of other resources.
➢ The capacity of the local authority of suco (suco council) is not sufficient to develop a regulation governing other resources.
➢ Tara Bandu was effective in protecting forests and other natural resources during the Portuguese era. But it was disregarded during the Indonesian occupation.
➢ Therefore, the government of Timor-Leste tries to revive Tara Bandu.
</td></tr>
<tr><td>Reasons for increase of forest fires in the Indonesian era</td><td>
➢ There were few forest fires during the Portuguese era, mainly because:
- The government enforced its law strictly;
- People were treated as slaves;
- There was a community police in each suco (a total of 15 policies in district) to monitor the day-to-day activities of suco; and
- Burning was not a common practice for grazing.
➢ Many forest fires had taken place during the Indonesian occupation, because:
- There were regulations to control fires, but the law enforcement of the government was not strict;
- The Indonesian army was the one who burned forests to fight against guerrollas;
</td></tr>
</table>

Theme	Discussions
	- There was no community police in suco; - People did not make fire lines (clearing the edges of the field) when burning the fields; - Burning became a common practice for grazing; and - People were not fully aware of the negative impacts of forest fires. ➢ There are still many forest fires observed after the independence in 2002, because: - People practice shifting cultivation for farming; - There is no government regulation made by the government with new regulations governing natural resource management; and - Burning is one of means to prevent the expansion of the special weed (XXXXXX). - Chef de Suco tries to stop community members from burning the areas for shifting cultivation and grazing. But he can not change their practices.
Necessary interventions to protect forests	➢ Revival of Tara Bandu ➢ Formulation of local regulations to control the harvest of forest products. ➢ According to the representative of the suco (one of the members of Suco Council), they plan to revive Tara-Bandu i) to protect environment as well as forests, ii) to control domestic violence, iii) to reduce free grazing, and iv) to eradicate crimes (especially robbery/steal). ➢ In order to control free grazing, they are also planning to define the areas for grazing and segregate the grazing areas from those to be protected.
What is Tara Bandu all about?	➢ Outlines of Tara Bandu - It orients community members to protection of properties of suco and community members and control not only the use of natural resources but also criminal activities. - All community members must follow the rules defiend by Tara Bandu. - A person who violates the rules (A violator) is fined one head of cow for the penalty. - When the period of Tara Bandu ends, the council of suco (Lianain) calls all community members at one place and organizes a ceremony to announce the end of Tara Bandu. ➢ Process of Tara Bandu - The council of suco organizes a general meeting with the participation of community members to announce the implementation of Tara Bandu. - Participants in a general meeting discuss the subjects to be prohibited by Tara Bandu and fines to be imposed on a violator. - If someone breaks the rules, a violator shall be fined one head of cow. - If a violator does not submit (or kill) his/her animal, Chef de Suco will take legal stepts to punish the violator legally. ➢ Period of Tara Bandu - Effective period of Tara Bandu is basically the same with the assignment period of Chef de Suco. - However, the prohibition of harvesting/hunting is defined by hanging the subject of prohibition for a certain period. ➢ Monitoring - All community members are responsible for monitoring the day-to-day activities in suco.
Reasons for ineffectiveness of Tara Bandu	➢ The Indonesian Government prohibited community members from putting the symbol of prohibition, since the Government suspected it to be the sign to guerrillas to provide them foods/crops. ➢ The Indonesian Government also forced community members to say at once place and prohibited them from going to forests.

Appendix – G (4)

Results of RRA Survey at Suco Batara

Annex-G (4-1) Resouce Map of Suco Batara



Boundaries

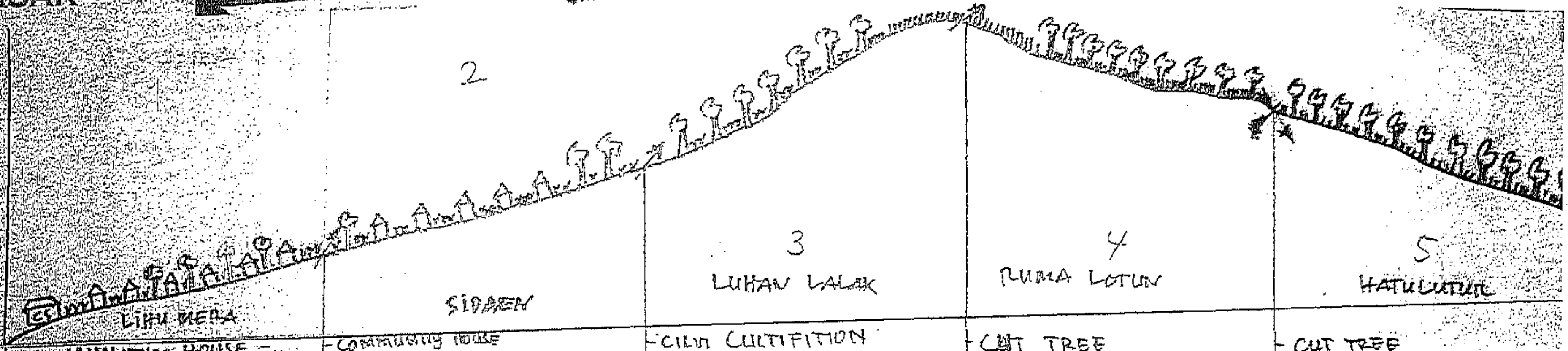
Orhuiudun–Lauloho : Mountain/Road
Orhuiudun–Sabumata : Road
Subumata – koulalan : Slope
koulalan – Lemuk : River
Madarmate – Lauloho : River

No. of HHs

1. Berelesu : 70 HHs
2. Fakulau : 63 "
3. kaitasu : 47 "
4. Raimerhei : 64 "

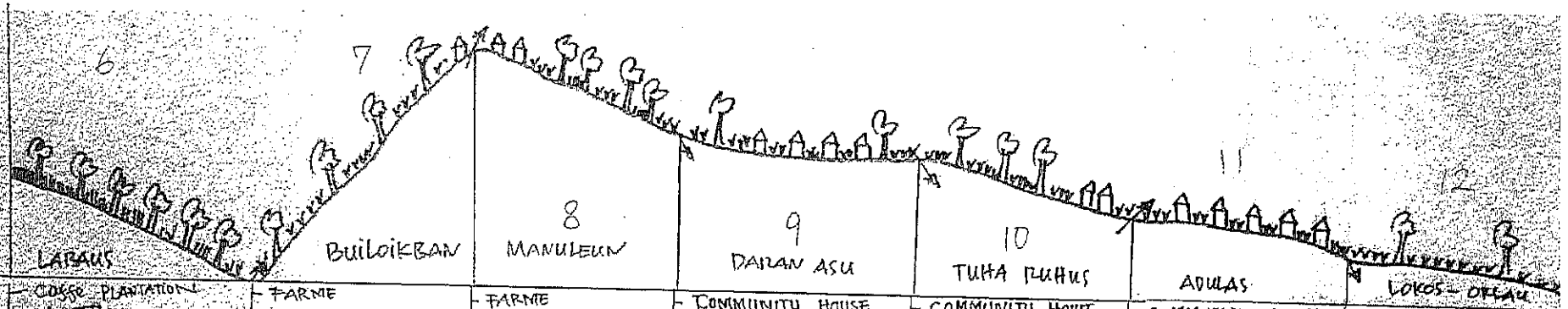
Total 244 "

ATIHAN DASAR



	1 LIHU MERA	2 SIDAEN	3 LUHAN LALAK	4 RUMA LOTUN	5 HATULUTUR
LAND USING	- COMMUNITY HOUSE - VILLAGE MEETING HALL - COFFE PLANT - PERMANENT FARM	- COMMUNITY HOUSE - FARM - COFFE PLANT	- CILVI CULTIFITION	- CUT TREE - FIRE OUT - ANIMAL BREDING	- CUT TREE - FIRE OUT - ANIMAL BREDING
TOPOGRAFY	LOW LAND	UP LAND.	UP LAND	UP LAND	UP LAND
KIND OF SOIL	SOIL MIX STONE	SOIL & STONE	SOIL & STONE	SOIL & STONE	SOIL & STONE
SOIL CONDITION	FERTILE	FERTILE	FERTILE	LESS BE FERTILE	LESS BE FERTILE.
KIND OF VEGETATION	- ORANGE - MANGGO - ADVOKAT - CANDLE NUT - BANANA - PIPAPPLE - AIVISTA - GUAVA - BAMBOO - PAPAYA - COFFE - CASSAVA - SWEET POTATO - TOBACCO - HARDWOOD TREE	- SWEETPOTATO - VEGETABLE - COFFE - BANYAN TREE - ELEPHANT GRASS - AIVISTA - BANANA - GUAVA - PAPAYA - CANDLE NUT - ADVOKAT - MANGGO - JACK FRUIT - ORANGE	- FLOWER - BAMBOO - GUAVA - MATABIDA - AIRAMEK - AI UHIK - PANDANUS - TARO - PALM - APAE - LA ABIR - HIDAR BALIK - AIFUNAN MERO - ERA. - LALUNIN MUETAN	- HOLAND TREE - AI RU - CANDLE NUT - SOUR	- AI RU - PALM TREE.
SOIL STATUS	PRIVATE	PRIVATE	PRIVATE	PRIVATE	PRIVATE
WATER AVAILABLE		WATER TANK	- WELL SPRING - WATER TANK		
PROBLEM			CILVI CULTIFITION	- CILVI CULTIFITION - LESS FOREST	- LESS FOREST
OTHER ISSUE					

Annex-G (4-2) Transect Walk,Suco Batara



	6 LABAUS	7 BUILOIKBAN	8 MANULEUN	9 DAIAN ASU	10 TUHA TUHUS	11 ADULAS	12 LOKOS - ORGAN
AND USING	- COFFE PLANTATION - CAT TREE - FARM - FIRE OUT	- FARME - COMMUNITY HOUSE	- FARME - COMMUNITY HOUSE	- COMMUNITY HOUSE - FARME	- COMMUNITY HOUSE - FARME	- COMMUNITY HOUSE - FARME	- FARME
TOPOGRATY	UP LAND	UP LAND	UP LAND	UP LAND	LOW LAND	LOW LAND	LOW LAND
KIND OF SOIL	SOIL & STONE	SOIL & STONE	SOIL & STONE	SOIL & STONE	SOIL & STONE	SOIL & STONE	SOIL & STON
SOIL CONDITION	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE
KIND OF VEGETATION	- ALVISIA - COFFE - MANGO - BAMBOO - FLOWER - PALM - NOTCH	GUAVA - ALVISIA FLOWER - CASAVA COFFE - BAMBOO EDIBLE FERN MANGGO ORANGE ADVOCAT TARO	- ORANGE - ADVOCAT - BAMBOO - COFFE - ALVISIA - GUAVA - FLOWER - PALM - CANDLE NUT	- FLOWER - BANYAN TREE - PALM - ALVISIA - COFFE - BANANA - WHILE BEANS	- PALM - CANDLE NUT - COFFE - ALVISIA - ADVOCAT - TARO - GUAVA - NOTCH - SWEET POTATO - CASAVA	- NOTCH - RANDU - JACKFRUIT - WHILE BEANS - BANANA - MANGO - ORANGE - PAPAYA - PASSION FRUIT - ADVOCAT - BAMBOO	- MANGO - ADVOCAT - WATER CRESS - COFFE - AIVISIA - FLOWER - BAMBOO - JACK FRUIT - ELEPHANT GRASS / KIN
SOIL STATUS	PRIVATE	PRIVATE	PRIVATE	PRIVATE	PRIVATE	PRIVATE	PRIVATE
WATER AVEILABLE	- WELL SPRING - PERMANENT			WELL SPRING	WELL SPRING	WATER TANK	- RIVER PERMAN
PROBLEM	CILVI CULTIFITION						
OTHER ISUE		- LOCATION SCHOO VERY FAR.					

Appendix-G (4-3). Results of Historical Profile (Suco Batara)

Theme	Discussions
General History	➢ The key informants were interviewed on the evening of 11th September, 2007. The discussion began from the history of Suco in the 1930's. Accordingly, the history of Suco is largely divided into three parts, namely i) Portuguese era (1930 – 1975), ii) Indonesian era (1975 – 1999), and iii) After the referendum (2000 – present).
Portuguese era	**1933** ➢ Mr. Francisco Duarte started ruling the area as King of Laclubar. He was literate and succeeded the position of King from his father. **1940** ➢ The Japanese army invaded East Timor and fought against the Australian army. Many Timorese were tortured, punished and killed during the Japanese invasion. The military government of Japan implemented the RODI system. ➢ Mr.Caleris who was district administrator escaped from Manatuto, where the fighting between Japanese and Australian armies took place, to Laclubar. **1942** ➢ The war was over and both Japanese and Australian armies returned to the respective countries. ➢ Portuguese returned to East Timor. They wanted to govern he country again. **1943** ➢ Mr. Caleris returned to Manatuto because the war ended. ➢ The Portuguese government appointed Mr. Horta (a father of the current president of East Timor) as sub-district administrator of Laclubar. He got married with Timorese woman. ➢ The taxation policy, which stated "anyone who became 17 years old has to pay tax", was introduced. The revenues generated from collected taxes were used for salaries of teachers, guards and other civil servants. If a person could not afford to pay the tax, he/she was forced to work at the communal land as a farm labor. **1949** ➢ Mr. Horta moved to Barique with his three sons (Antonio, Nuno & Ramos). The sub-district administrator of Laclubar was replaced with Mr. Gonsalves. **1951** ➢ Mr. Gonsalves moved to Maubessi. **1953** ➢ The Portuguese government decided to appoint Mr. Jose Pires as sub-district administrator of Laclubar. **1956** ➢ The Portuguese government decided to appoint Mr. Troja as sub-district administrator of Laclubar. **1959** ➢ The Portuguese government decided to appoint Mr. Alarico as sub-district administrator of Laclubar.

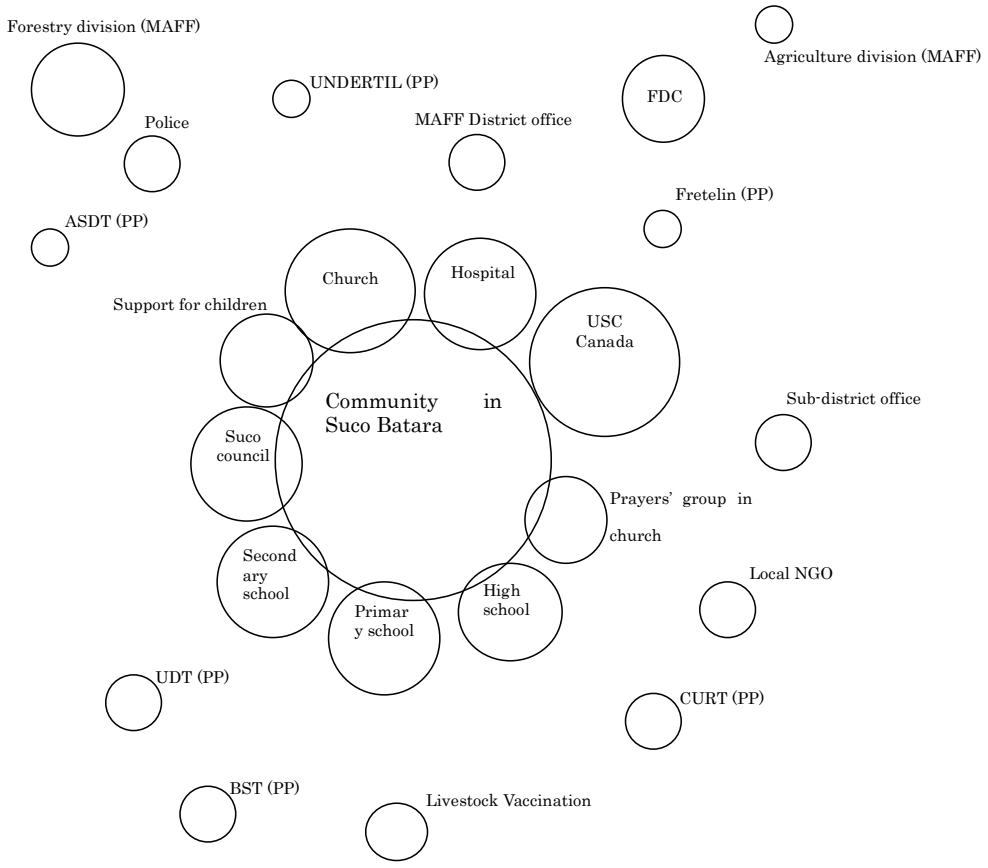
Theme	Discussions
Indonesian era	**1975** ➢ Mr. Brandaun was the last sub-district administrator of Laclubar. ➢ Political party such as UDT, Apodeti and Fretelin, were formed. The Indonesian military invaded East Timor. **1975-1980** ➢ When the Indonesian military came into Laclubar, many villagers escaped to mountains. They faced a severe shortage of food and many of them died because of hunger. ➢ Mr. Francisco Soares was appointed as Chef de Suco. The Indonesian government started ruling over Laclubar. **1981** ➢ The Indonesian government started the operations of "KIKIS" to suppress the activities of Fretelin. Local people were organized and forced to participate in the operations for three months. **1990** ➢ Mr. Antonio Soares was appointed as Chef de Suco of Batara following the Indonesian local administration regulations. **1995** ➢ Mr. Manuel Gonsaga was appointed as Chef de Suco of Batara following the Indonesian local administration regulations.
After the Referendum	**1999** ➢ The national referendum for independence was organized. Many people escaped to mountains or Indonesia. **2000** ➢ Mr. Olivio was selected as Chef de Suco of Batara. **2004** ➢ Mr. Fortunato Soares elected as Chef de Suco of Batara. **2005** ➢ The project of CARE International in Laclubar ended. **2007** ➢ Mr. Augstino Soares was elected as Chef de Suco of Batara.

Appendix-G (4-4). Traditional activities in Suco Batara

Name of Custom	Activities/Reasons	Female	Male
Haro Uma Lulic (Build Sacred House)	Because Uma Lulic (sacred house) belongs to all the communities, they build it in a collective manner.	Prepare water & food	Cut trees and slash grasses
Making Sacred Fence	Same as above	Prepare water & food	Cut trees & bamboos Make a dence
Harosan (Working together)	It makes farming activities such as land preparation and weeding easier or faster.	Clean the field (farm) Prepare food	Clean the field (farm)
Kore Metan	If someone of the husband's rrelatives dies, the family shall invite wife's relatives, and vice versa.	Prepare water, food, areca nut, clean rice Place areca nut	Lia nain Collect fire wood Kill animal Make an invitation
Easter	Religonous ceremony	Clean and prepare an alter	Clean the area Make a fence
Chrismas	Religonous ceremony	Clean and prepare an alter	Clean the area Make a fence
Finado (November 2)	Regionous ceremony organized on the next day of All Saint Day. They pray for relief of the souls of dead relatives.	Collect flower Prepare food	Kill animal Collect wine and firewood
Nossa Senhora da Graca (October 1)	Religonous ceremony Prey to Maria	Organize prayers Sing the songs	Organize prayers Sing the songs Play musical instruments
Coracao de Jesus Day (April 13)	Religonous ceremony This is a ceremony for cathoric to remember Jesus's suffers.	Organize prayers Sing the songs	Organize prayers Sing the songs Play musical instruments
Sagrada Familia (Mar 19)	Religonous ceremony Prey to Jesus and Maria	Organize prayers Sing the songs	Organize prayers Sing the songs Play musical instruments
Sacral Mountain	A ceremony to pray to the sacred mountains because we belive it can support us.	Prepare areca nut and clean rice	Light a candle Put white coins and gold Talk at the sacred place and kill animals Wait until Lulic will possess somone and give messages to villagers.
Build Private House	When a villager build a house, we should work together to make it easy.	Collect grasses	Cut treea Collect grasses Make/Build a house
Tradition to received the visitor	A custom to respect a visitor	Sing and dance Prepare food Put tais on visitors	Sing, dance and march
Younth activity	Organization of a party (divertimento)	Sing and dance Play sports Play musical instruments	Sing and dance Play sports Play musical instruments

Appendix-G (4-5). Venn diagram of existing institution in Suco Batara

Theme	Discussions
Venn diagram	➢ The following institutions/organizations are currently being related to the village.



- There are primary, secondary and high schools in Suco Batara since the village is located in the center of Laclubar sub-district. Schools are considered very close and important for their life.
- Hospital and Church are considered requisite for lives of villagers.
- Suco Councile is also regarded as an important organization, since it is a decision making body of the village.
- There are several government offices and NGOs found in the diagram. USC Canada, an NGO funded by a Canadian NGO, is considered important and closely working for the village. Support for Children and Prayer's groups in church are also closely working with the village.
- Besides, FDC, an organization based on MAFF with the assistance of international donors for agricultural development, has also provided services to the village for the improvement of their livelihood, but its relationship with the village is considered a bit far.
- It seems that MAFF has also provided its services (such as veterinary service, agricultural extension, and forest protection), but its contact with the village may be very limited.
- There are several political parties which are active aroung Suco Batara. However, their importance seems to be low as their circles are smaller than others and far from the village.

Appendix-G (4-6). Results of Wealth Ranking

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Social wealth ranking</td><td>
➢ The following indicators are used for appraising the wealth of villagers.

1. Past (Portuguese and Indonesian times)
1) Rich: Households who hold livestock (cattle, goats, pigs, horse) or own gold and jewel.
2) Sufficient: Households who own a few heads of livestock.
3) Poor: Households who do not possess any property.

2. Present:
<table>
<tr><th>Category</th><th>Criteria</th></tr>
<tr><td>Rich</td><td>Households who:
- own coffee plantation;
- have a permanent job;
- run a shop or small business;
- possess a good house or own a vehicle; and
- can afford to send their children to university.</td></tr>
<tr><td>Sufficient</td><td>Households who:
- own a few heads of cattle;
- own a simple/traditional house;
- own a motorbike;
- can afford to send their children to secondary and high schools.</td></tr>
<tr><td>Poor</td><td>Households who:
- lack a capacity to cultivate their own land for farming;
- have many children but can not afford to send them to school;
- can not earn enough income by selling farm produce due to limited marketing outlets;
- have less grassland for grazing livestock; and
- have limited food for household members.</td></tr>
</table>
➢ The participants estimated the numbers or proportions of households of each category as shown below.

1. Portuguese time:
(Unit: No. of HHs)
<table>
<tr><th>Category</th><th>Araain</th><th>Balurin</th><th>Fatuha</th><th>Werulun</th><th>Total</th></tr>
<tr><td>Rich</td><td>40</td><td>0</td><td>5</td><td>10</td><td>52</td></tr>
<tr><td>Sufficient</td><td>40</td><td>10</td><td>8</td><td>5</td><td>53</td></tr>
<tr><td>Poor</td><td>50</td><td>60</td><td>76</td><td>27</td><td>207</td></tr>
<tr><td>Total</td><td>120</td><td>70</td><td>89</td><td>42</td><td>312</td></tr>
</table>
2. Indonesian time (1975 – 1999): In the whole village
Rich: 20 households
Sufficient: 100 households
Poor: 214 households
3. Present (1999 -): In the whole village
Rich: 0%
Sufficient: 5%
Poor: 95%
➢ The numbers or proportions of students who went/go to school were estimated as follow:

1. Portuguese time: 31 pupils attended primary school in Batara
2. Indonesian time: 85 % of children went to school.
where:
15 % of children went to secondary school.
10 % of them went to high school.
7 % of them was able to go to university.
2. Indonesian time: 300 pupils go to primary school.
Out of them, 40 attend junior high school, 20 go to high school and 7 attend university.
</td></tr>
</table>

Appendix-G (4-7) Seasonal Calender of Activities related to Traditional Ceremonies and Crop Production (Suco Batara)

NO	ACTIVITY	MONTH												Allotment of work		Problem	Purposes of event	How to resolve	
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women				
A.	**Traditional Activities**																		
A-1	Soy Batar													+	+	Lack of money, anumal, rice, iron or wine	According to the tradition of suco	Sit together to get money to buy the things necessary for the ceremony	An Cr Ou
A-2	Tradisaun Balu Udan Beu												+	+	+	ditto	ditto	ditto	De
A-3	Halo Uma Lulik							+	+	+			+	+	+	Lack of materials for uma Lack of money	ditto	ditto	Tr
A-4	Tradisaun Fo Hon We Mafan Fuan	+-	+-	+-	+-	+-	+-	+-	+-	+-	+-	+-	+-	+	+	Lack of money, animal. rice, iron, wine or betel nut	ditto	ditto	An Cr Ou
A-5	Core Metan	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Lack of rice, money, animal, or candle.	Taking off a black cloth 1 year after the death of family member	A family of a dead person shall invite all the relatives who put a black cloth on.	A tro
A-6	Fetasan Umane	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Need money, gold, solver, horse, cow, and baffalo according to traditiona rules	Offering of a betrothal gift from groom's family to bride's family	Families of bride and groom shall sit together to resolve the problem.	A thi
A-7	Tradisaun Simu Tinan Foun													+	+	Lack of money, rice, clothes, perfume, or shues	Celebrating a new year	Seek assistance form other families	n.
A-8	Tara Bandu						+							+	+	Lack of rice, money, animals or wine	Stopping the destruction of environment	Members of suco council and elder shall sit together to get money for the materials necessary for the ceremony.	n.
A-9	Tradisaun Labarik Maris	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Lack of rice, animals, wine, or clothes of child	Cleaning face	Families shall sit together and buy the things needed for the ceremony.	n.
A-10	Tradisaun Lia Mate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Lack of money for wine, rice, animals, candle, coffin, black cloth	Holding a ceremony at someone's death	A family of a dead person shall sit together to organize a funeral ceremony.	n.

Seasonal Calender of Activities related to Traditional Ceremonies and Crop Production (Suco Batara)

NO	ACTIVITY	MONTH												Allotment of work		Problem	Purposes of event	How to resolve
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women			
A	**Production of annual crops**																	
A-1	Clearing (Slashing)						+	+	+	+				++	+	- Lack of machete		- Try to find machete
A-2	Burning										+			+	-	- Houses and/or other crop fields are sometimes burned.		- Make fire lines (Clean the edges of barned area) before burning
A-3	Planting/Seeding <1										+			+	++	- Crops planted in November do not grow well and production is generally low.	- Cold weather	- Seed/Plant seeds before the rainy season starts
A-4	Weeding	+											+	++	++	- Shortage of food in weeding periods	- There is no food researve.	- Borrow food from other households - Collect NTFPs from forest such as Maek, Wild banana, and Wild cassava - Work as a labor in other fields
A-5	Harvest of short-period maize	+												+	+	- Crop damage by rat, strong wing, heavy rainfall, wild pig, monkey and wild chicken	- Wild grasses/weeds grow vigorously after short-period corn is harvested.	- Harvest corn immediately when it is ready (Do not leave corn in the field)
A-6	Harvest of long-period maize			+										++	++		- Natural disaster - No fence - No one stays in the field.	- Make a fence - Put someone in the field
A-7	Harvest of other annual crops - Soybean - Pigeon pea - Pumpukin - Talas - Cassava (18mos after planting)			+ + +					+ +									
B	**Production of coffee**																	
B-1	Planting coffee seedling	+	+	+										++	++	- There is no shaded place. - Lack of seedling - Crop damage caused by animals, forest fires, landslides, and trees blown down by strong wind	- There is no big tree good for shade tree for coffee. - Wildlings of coffee in the existing coffee plantation do not grow well under shade. - Animals are freely grazed.	- Provide/Distribute coffee seedlings - Tie animals with rope or Put them in a cage - Clear edges of the field prior to burning - Revive Tara-Bandu - Plant seedlings of shade trees - Do not break traditional rules
B-2	Weeding				+	+							+	++	++	- Leeches suck blood. - Lack of machete	- Lack of money to buy it	- Buy it or Borrow it from other families
B-3	Harvest of coffee						+	+	+					++	++	- Lack of bag for putting cherry	- Lack of time to make bags - Lack of materials - Lack of money to buy it	- Buy bags or Exchange coffee beans with bags
C	**Production of peanut**																	
C-1	Planting peanut	+												++	++	- Crop damage caused by animals, ant, and dog.	- There is no control of animal grazing. - Lack of money to buy it	- Put someone in the field - Buy it
C-2	Harvest of peanut			+										++	++	- Lack of materials (iron stick for planting, bag for harvesting, and mat for drying)		

Note:
<1: Maize, Peanut, Pigeon pea, Beans, Soybean, Cowpea, Cassava, Taro, Sweet potato, Squash, Cucumber, Kontas

Appendix-G (4-7) Seasonal Calender of Natural disaster & diseases in Suco Batara (Suco Batara)

NO	ACTIVITY	MONTH												Allotment of work		Problem	How to solve
		1	2	3	4	5	6	7	8	9	10	11	12	Men	Women		
1	Corn pest and damages	■	■	■										+	+	Pest and free-grazed livestocks damages corm	To put fence To control grazing
2	Land slide	■	■	■										+	+	Heavy rain, Forest fire, Tree cutting, Shifting cultivation	To plant bamboo and trees To put tree fence
3	Forest Fire									■	■			+	+	Fire damages crops, houses and livelstocks.	To control firing on grass land Not to use fire for land preparation
4	Storm		■	■										+	+	All crops, houses and livestocks are damaged of destroyed. Big trees are fallen away.	No solutions
5	Disease of cattle					■			■							Many cattles lose weight or die.	To use traditional medicine To inform to government's veterinary service
6	Disease of pig						■	■								Many pigs lose weight or die.	To use traditional medicine To inform to government's veterinary service
7	Disease of goat				■				■							Many goats lose weight or die.	To use traditional medicine To inform to government's veterinary service
8	Disease of dog				■		■									Many dogs lose weight or die.	To use traditional medicine To inform to government's veterinary service
9	Hunger	■	■										■	+	+	Shortage of food in the season before harvest.	To buy enough food
10	Diarrhea												■	+	+	To eat freash green leaves and wild vegetables causes diarrhea.	To go to hospital
11	Eye disease					■								+	+	Dusts caused by strong wind dameges eye.	To go to hospital
12	Joint pain (or rheumatism)	■	■	■	■	■	■	■	■	■	■	■	■	+	+	Constant daily heavy work load causes pain of joints.	To go to hospital
13	Malaria									■				+	+	People suffer high fever caused by Malaria in cold season.	To go to hospital

■ indicates the month in which natural disaster or disease possibliy take place.

Appendix-G (4-8). Trend Analysis at Suco Batara (1/3)

Period	Income	Maize production	Cassava production	Koto Marek (Wild beans)	Kumbili (Sweet Yam)	Coffee	Honey
1960-1975	+1 • There was no coffee or cow. . • Farming was the sole mean to earn income, but the produce was just enough for subsistence.	+ 5 (40-100 bdls) • Soils were productive. condition. • The productivity was high, although they used their own seeds.	+3 • People were treated as slaves. • There was no time for them to work in their farms. • Villagers had to offer their produce to King or the Portuguese Government.	+4 • Villagers did not intend to harvest/ collect Koto morek since the population was less and land for farming was large.	+1 • It was difficult for them to find it without having a opportunity to go to forests. • It was harvested only when they went to forests.	+1 • Only some villagers grew coffee. • The number of trees planted was 100trees/HH on average. • Since Villagers had to pay tax to the Government, they earned from coffee just enough for subsistence.	+2 • Host trees for bee's comb were limited.
1975-1999	+5 • Villagers were able to sell every farm product.	+10 • The Indonesian government provided seeds and inputs. • Extension workers often came to the village and trained villagers.	+8 • Same as those for maize • The yield of cassava was no less than 5 tubes/stick.	+3 • Villagers were able to harvest no less than 10 bags of beans in the field though they never cropped. • Villagers were not allowed to go to forest.	+1 • Villagers were not keen to collect kumbili. • It was harvested only when they went to forest for hunting.	+10 • A number of coffee plantations were developed during the Indonesian era. • Almost all the households in the village planted and grew coffee. • Villagers had technical support from the Government.	+5 • Villagers were aware of the value of honey. • Villagers were keen to find host trees for bee.
1999-2000	0 • There was no one buying farm products.	+2 • Every villager stole farm products of other villagers because of the civil war.	+6 • Cassava production was damaged by rodent.	+10 • Villagers were able to go to forest and harvest koto marek.	+1 • Same as above	+10 (+12) • The area of coffee plantations was expanded since villagers planted more coffee trees.	+3 • The value of honey declined. • Villagers were not willing to collect honey because of the fear of accidents.
2001-2007	+1 • Villagers are not able to sell much farm produce. • The selling prices of farm products are also low.	+2 • Maize production has been damaged by rodent, wind and pest.	+5 • The production of cassava is low due to cold climate (climate change) and crop damage caused by rodent.	+6 • There is no time to go to forest to collect beans since women are busy in child care.	+1 • Same as above	+10 • Same as above	+3 • Same as above

Trend Analysis at Suco Batara (2/3)

Period	Livestock (goat, pig, etc)	Sweet potato	Land availability	Population	Animal's diseases/pests	Shifting cultivation	Forest fire	Water
1960-1975	+10 • Most of the households in the village raised animals (2-5 heads /HHs or more) • Kids took care of animals. • Animals were left freely in their territory. • There was no pest.	+5 • The production was high. • Sweet potato was used for barter trading at Manatuto.	+ 10 • All the lands in the village has belonged to the villagers since the 2nd world war.	+10 • There were many households. .	+5 • Animal pests were controlled. • The Portuguese government provided vaccination services. • Animals were cared by traditional measures.	+10 • A household owned 10 sites for shifting cultivation on average. • Many households practiced shifting cultivation. • In the common practice, households moved to the next site when they felt the soil fertility was low.	+2 • There were regulations to control forest fires. • The Portuguese Government enforced the law strongly. • Villagers were afraid of the Government.	+4 • Every households had a source of water. • The volume of water was reduced during the dry season.
1975-1999	+1 • Animals were killed by the Indonesian army. • Animals died due to an outbreak of an epidemic disease.	+2 • Villagers were forced to stay in one place. • Hence, villagers were not able to go to the field for farming.	+10 • Same as above	+6 • Some villagers were killed during the conflict with the Indonesian army.	+3 • It is difficult for them to identify the effect of animal diseases/pests since many animals were killed by the army during the Indonesian era.	+5 • Villagers received technical support and advice of quitting shifting cultivation from the Government. • They were trained on how to make a terrace.	+2 • The were few forest fires because of the existence of Tara bandu.	+3 • The volume of was further reduced due to a long dry season (or climate changes).
1999-2000	0 • All animals were killed.	+3 • Villagers resumed shifting cultivation and produced sweet potato for house consumption.	+10 • Same as above	+7 • The population increased as the security of the village was being improved.	+4 • Many animals died due to an outbreak of an epidemic disease. • There was no vaccination service.	+9 • There was no technical assistance from the Government. • There was no information provided about the effect of shifting cultivation from the Government. • There was no control/regulation made by the Government.	+3 • There was no regulation or rule to control forest fires. • There were fires taking place due to the carelessness of embers in hunting.	+3 • Same as above
2001-2007	+2 • Villagers have just started raising animals.	+3 • Same as above	+10 • Same as above	+8 • Same as above	+3 • Animals were killed by diseases. • The village has vaccination services from the Government once a year.	+10 • Same as above	+5 • There is no extension staff coming to the village. • The incidence of a forest fire has increased as villagers go back to their original places.	+3 • Same as above

Trend Analysis at Suco Batara (3/3)

Period	Forest	Wind	Climate (Drought)	Landslide	Tua Metan	Road	House	Susai (weed)
1960-1975	+8 • There were extensive dense forests available in the village. • Villagers had a strong belief in Lulic.	+4 • A heavy wind occurred and caused damage twice a year on average.	n.a. • No climatic change (Villagers were able to plant corn in October.)	+6 • A landslide occurred twice a year on average. • The Manatuto Bridge was damaged by a heavy landslide.	+2 • There were few Tua Metan trees. • Tua Mutin or Sabu was produced by only the villagers who could access Tua Metan.	0 • The only road between Manatuto and Laclubar was usable.	0 • The only rich households in the village were able to construct a concrete house. • Many households lived in grass houses.	0 • There was no Susai.
1975-1999	+6 • There were still many dense forests for coffee plantations. • The Indonesian Government provided seedlings of trees through extension services. • There were reforestation programs.	+4 • Same as above	n.a. • No climatic change (Villagers were able to plant corn in October.)	+5 • The occurrence of landslide was found only along the streams. • The damage to crops was limited.	+5 • The number of Tua Metan trees had increased.	+5 • The road between Laclubar and the village was constructed.	+5 • The number of cemented house increased since a number of civil servants lived in the village.	+3 • Susai was introduced in the village.
1999-2000	+5 • There was no extension staff working for the village. • Villagers cut trees for constructing a house and shifting cultivation.	+4 • Same as above	n.a. • No climatic change (Villagers were able to plant corn in October.)	+5 • A landslide occurred once a year on average.	+7 • The young generation in the village planted Tua Metan trees.	+5 • The roads were still in use.	+3 • All the houses in the village were burned. • Half of the houses were made of grasses and wood.	+6 • Susai suppressed other grasses, which were edible for animals.
2001-2007	+5 • Same as above	+6 • A strong wind in February 2006 destroyed houses and caused severe damage to corn farms.	n.a. • No climatic change (Villagers were able to plant corn in October.)	+5 • Same as above	+8 • Same as above	+5 • There is no road being constructed.	+3 • Same as above	+8 • Same as above

Appendix-G (4-9). Results of Group Discussion with Male Participants about Resource Use and Potential Resources for Livelihood Development

Theme	Discussions
Use of land	➢ The land holding size of a big/large land owner ranges from 10 ~ 50 ha, which includes areas for housing, coffee production, farming, grazing animals and timber collection, ➢ Households categorized as medium land owners own about 5 ha of land on average, while those considered as small land owners own 1 ~ 4 ha of land. If the productivity is low and farm produce is not enough, a medium land owner often buy land from other villagers.) ➢ The number of farming plots per family is 3 ~ 4 plots on average. ➢ There is no government land or communal land in the village. All the lands in the village are privately owned. ➢ Villagers seem to consider a demonstration farm as a part of communal land since it is used for public purposes, although a demonstration farm is managed by the owner of the land and any outcomes generated from the demonstration farm belong to the owner. <u>Sale of Land</u> ➢ Land in the village can be sold to other villagers or even to outsiders (persons who come from other villages) with a payment in cash or in kind (e.g., animals or trees for honey). ➢ Outsiders could also buy land of the village if he/she lives in the village or the land owner agrees to sell the land after negotiation. ➢ Land can be used as a betrothal gift or an offering for a traditional ceremony. <u>Lease of Land</u> ➢ A villager can use land owned by other villagers for farming short-term crops (shifting cultivation). But a tenant (a villager who rents land for shifting cultivation) has to share produce with the land owner at a rate of 50:50. ➢ If a tenant is a close relative of a land owner, he/she does not need to give his/her produce to the land owner. ➢ A tenant can use the rental land not only for shifting cultivation but also for permanent farm. But he can not plant perennial crops, such as fruit trees, coffee, and timber trees. In addition, a tenant can not cut any standing trees in the rental land without permission of a land owner.
Resources in locality	Please refer to Table xxx.
List of major resources/ agricultural products important for livelihood development	➢ Important resources and products for their livelihoods are listed below. - **Coffee, Tua, Candlenut, Citrus,** Avocado, Mango, Pineapple, Jackfruit, **Maize**, Coconut, Banana, Taro, **Pumpkins (white and black)**, Lettuce, Vegetables, Kontas, Sweet potato, Potato, Peanut, Beans (Soybean and Long bean), Betal nut, Wax apple, Guava, **Cattle**, Buffalo, **Pig**, **Horse**, Goat, Dog, Chicken, Cat - **Honey**, Forest beans (Koto moro and Lehe), Kumbili (Forest tubers), Hudifuik (Wild banana), Rattan, **Bamboo**, Water source (Spring), Papulu (Wild bamboo), Tamarind, Ai na, Ai dak, Ai dila faliuk, Kalik, Ail leka, Ai nitas, Ai hali, **Ai ru,** Ai bubur, Ai hanek, Samtuku, Ai kakeu, Ai marang, Ai kafe (Lamtoro), Ai fau, Ai padu, Au kalula, Ai sagi, Ai donu, Ai kasati, **Sandal wood**, **Ai sarina** (Those in bold letters were considered important.)

Theme	Discussions
	➢ The eight most important resources/products are: - Coffee, Tua metan, Citrus, Cow, Horse, Ai ru, Candle nut, Bamboo
Pair-wise ranking among the important resources/ agricultural products	➢ The importance of the identified important resources were further evaluated by using a pair-wise ranking method as shown below.

	Coffee	Tua m	Citrus	Cattle	Horse	Ai ru	Candle n	Bamboo
Coffee		Tua <1	Cof <2	Cof <3	Cof <4	Cof <5	Cof <6	Cof <7
Tua metan			Tua <8	Tua <9	Tua <10	Tua <11	Tua <12	Tua <13
Citrus				Cit <14	Cit <15	Cit <16	Cit <17	Cit <18
Cattle					Hor <19	Ai r <20	Can <21	Cat <22
Horse						Hor <23	Hor <24	Bam <25
Ai ru							Can <26	Bam <27
Candle nut								Can <28
Bamboo								

➢ The reasons for selection are as follows:

<1: Tua mutin can be harvested every dary and be sold at every market day.

<2: Coffee can earn much income although it can be harvested once a year.

<3: Cattle can not be sold anytime.
The number of households who own cattle is limited.
The price of coffee is good.

<4: The price of coffee is good.

<5: Coffee can earn money, but Ai ru is used only for construction.
Not all the households in the village can access or use Ai ru.

<6: Not all the households in the village have or own candle nut trees.
The price of coffee is hither than that of candle nut.

<7: Coffee is more valuable than bamboo.

<8: Tua can generate money every day, but citrus can be harvested once a year.
The price of citrus is not as good as that of tua.

<9: Cattle are just used for a traditional ceremony once a year.

<10: Tua can be sold every day and its price is good.
Now all the households in the village own horse.

<11: Ai ru can not be sold in general.

<12: Tua can be harvested in the morning as well as evening.
Candle nut can be harvested once a year, and not all the households in the village own candle nut trees.

<13: Tua makes money.
Villages often drink tua mutin before harvesting bamboo.

<14: Almost all the households harvest citrus, although its harvesting season is only once a year.
(But some participants think that cow has higher value than citrus has.)

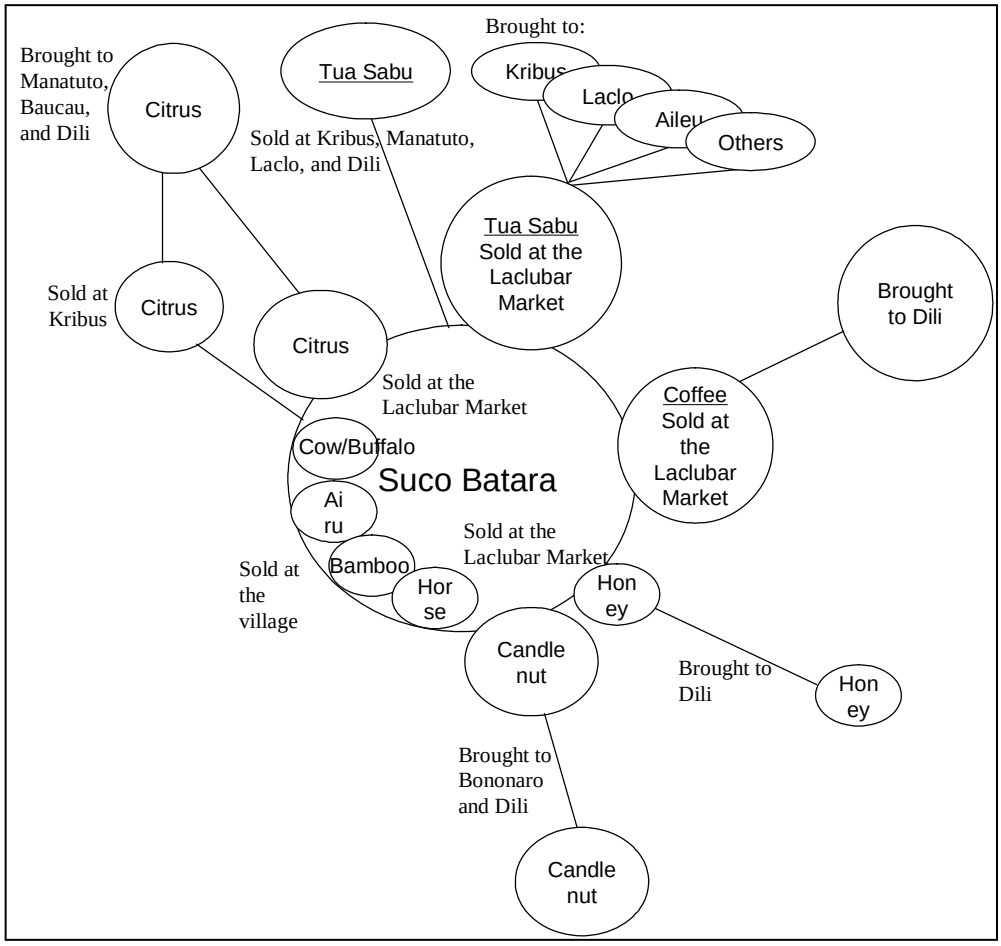
<15: Same as above.

<16: Citrus makes money.

<17: Almost all the households in the village own citrus trees, while the number of households who have candle nut trees is limited.

<18: The market demand of bamboo is limited.
Citrus is in demand in local markets.

<19: Horse is used for transportation and hauling/carrying agricultural products or other

Theme	Discussions
	things. Cow is just used for ceremony or sacrifice. <20: Ai ru is important especially for constructing a house. <21: The number of households who own candle nut is higher than those holding cattle. <22: Cattle can be used for traditional purposes and also for earning money to send their kids to school. <23: Horse can help villagers to carry / haul farm products and other things and also can be used for an offering in a traditional ceremony. <24: Same as above. Horse is needed to carry candle nut to the market. <25: Bamboo can be used for making furniture and constructing a house. Bamboo can be harvested anytime. <26: Candlenut can be sold at the local market and its price if better than that of Ai ru. <27: Villagers can access and harvest bamboo every day since it grows near their houses. A bamboo pole is not heavy to carry. <28: Candle nut can be sold at the local market. Villagers can also extract oil from candlenut.
Current practices in marketing major commodities	 ➢ Major agricultural commodities are currently marketed in the following manners.

Commodities	Marketing Practices and Major Buyers	Prices
Tua Sabu	• Sold at the Laclubar market (75%) or others (Kribus, Manatuto and Laclo). • At the Laclubar market, people (buyers <1) from Laclo, Aileu, Manatuto, Remexio, Turiscai, and Maubisse come to the market every Thursday and Sunday (Market days).	(Unit: US$ / 5 lit) Laclubar: Dry 4.5, Wet 2.5-3 Kribus: Dry 5, Wet 2-4 Manatuto: Dry 6, Wet 5 Laclo: Dry 8, Wet - Dili: Dry 8, Wet 8
Coffee	• Sold at the Laclubar market or at the villag from August to September. • People from Bobonaro and Baucau are the main buyers. (Although the participants have no idea where the buyers bring coffee, but they probably bring coffee to Dili (a company with Chinese capital)) • There is no approach from CCT. (In fact, the participants do not know about CCT.)	Price: US$ 1.25/kg
Citrus	• Sold at the Laclubar market or at Kribus <2 between May and June. • The majority of the buyers are those from Baucau, amd some of them also come from Dili.	Price: Kribus: US$ 1/20 pcs Laclubar: US$ 1/30 pcs
Candle nut	Sold at the Laclubar market in two months (August – September) Three persons (Messrs. Almando, Alfred, and Paul) are the main buyers.	Price: Nut: US$ 2.5/bag (50 kg) Processed (husked nut): US$7/bag
Horse	Only some households who own many horses can sell horses. In genral, horses are sold to villagers.	Price: US$ 70-150/head
Bamboo	Bamboo poles are sold to villagers.	Price: US$ 1/pole
Ai ru	Ai ru is sold to the person/office who wants to construct a building.	Price: US$ 4/pole for ceiling US$ 5/pole for prop One goat or pig for 6 poles One horse for a completed house
Cattle/Buffalo	Cattle/Baffalo are sold at the village or at the grazing area. (All year around)	(Unit: US$ / head) 1st yr: Buff 200, Cattle 100 2nd yr: Buff 300, Cattle 200 3rd yr: Buff 400, Cattle 300 4th yr: Buff 500, Cattle 400
Honey	Hoeny is sold at the Laclubar market in April and May.	Price: US$ 4/5lit

Note:

<1:The Study Team assumes that buyers from other areas to Laclubar are traders who sell groceries and other daily commodities at the Laclubar market.

<2: It takes about 3~4 hours for them to walk with a sack of citrus from Laclubar to Kribus.

Problems/Issues in Marketing

Commodities	Problems
Coffee	• Unstable price or price fluctuation • The price of coffee varies with its quality. • Low quality due to mix harvesting • Lack of milling machine (Manual pounding is the common practice.)
Tua Sabu	• Lack of public transportation services (Public transportation is available only twice a week.) • Lack of vehicle in the village (There is no vehicle in the village.) • Price fluctuation • Lack of container (jerry can) for tua sabu • Lack of pan for distilling tua mutin
Citrus	• Lack of bag/basket • Low selling price • Long distance from the village to Kribus (It is hard for them to carry citrus from the village to Kribus on foot.)

Candle nut	• Low price • Weight of a bag of candle nut (It is quite heavy for them to carry a bag of candle nut from the village to the Laclubar market.) • Lack of basket/bag • No machine/equipment to shell candle nut (Villagers often hit their fingers in shelling candle nut manually.) • No quality differentiation
Horse	• Limited market demand • Diseases of horse • Accidental death of horse (Tied with a rope, a horse is sometimes entangled in a rope to death.)
Bamboo	• Limited market demand • Accident in cutting bamboo • Forest fire (Areas planted with bamboo are burned by fires.)
Ai ru	• Heavy to carry (It is weighty to carry.) • Long distance from the settlements to the areas where Ai ru grows (The locations of Ai ru forests are far from the settlements.) • Time consuming (Cutting Ai ru is time-consuming.) • No chain saw
Cattle/Baffalo	• Limited market demand • Diseases and pests of cattle • Cattle just sleep and eat.
Honey	• Sting by honeybees (When harvesting honey, villagers are often stung by honeybees.) • Accident in harvesting (fall from a tree) • Limited buyers • Long distance from the settlements to the areas where honey can be harvested (The locations of host trees for honeybees are far from the settlements.) • Weight of a jerry can filled with honey (It is weighty for them to carry a jerry can filled with honey from forest to the market.)

Transportation cost

Start - End	Means <1	Cost	Remarks
Laclubar - Kribus	on foot	None	3 ~ 4 hours walking
Laclubar - Manatuto	Public bus	US$ 3.0/person US$ 1.0/bag US$ 0.5/20 lit	-
Laclubar - Dili	Public bus	US$ 5.0/person US$ 2.0/bag US$ 1.0/20 lit	-

Note: The principal transportation means in the suco is a small public bus.

Appendix-G (4-10) Available Resources

Available resources	Season	Level of use	How to use resources	Volume used	Place to sell	Difficulties in collection	Remarks
Honey	April	• 55 % of the total households in the village harvest honey.	• Market honey combs, honey, and wasp larvas	• 5 lit x 120 cans=600 lit/yr (max) • 5 lit x 10 cans = 50 lit/yr (normal) • 5 lit x 2 cans = 10 lit/yr (min)	• Manatuto • Dili (They must bring honey to the market places by themselves.)	• Stung by bees • Fall from tree • Burned by a fire stick • Lack of materials for honey collection (container and rope)	There were also other issues raised by the participants, such as, - low price - no money for transportation - Poor road condition, and - Limited buyer.
Candlenut	Aug - Sep	• Almost all the households in the village	• Market cherry (@ US$2 / bag) and husked nut (@ US$5 / bag) • Eat nuts • Process nuts into oil for lamp, soap, shampoo, oil for massage, medicine for cough	• About 20 bags / HH • About 5 bags / tree	• Manatuto • Dili • Village or Laclubar market (to persons from Bobonaro)	• The trees are damaged by strong winds and forest fires. • The productivity is low. • Shelling nuts is time-consuming. • The locations of the trees are far from the settlements.	-
Sandal wood	None	• Only 7 households	• They have not marketed sandal wood yet, although they know its values.	None	None	• Sandal woods are burned by forest fires. • The Government restricts tree cutting.	-
Tua Metan	All year around	• All the households in the village	• Market tua mutin (fresh sap) • Market tua sabu (distilled one)	-		• Lack of materials for making wine • Low price • It makes people drunk. • Poor road condition • Lack of transportation • There is in need of technical assistance for them to make good wine.	Tua mutin / sabu is an important source of income, but there is no government support for marketing tua mutin / sabu.
Bamboo	-	• All the households in the village	• Use bamboo pole for making a house, fence, container of tua mutin, ladder, shed for animals, and furniture.	-	Bamboo ple • Village Bamboo shoot • Laclubar market • Kribus	• Lack of equipment for furniture making, such as: saw, drill for hole making, knife, nails, and square	Some villagers know how to make furniture using bamboo, since they had a training course on furniture making in 2004.

Available resources	Season	Level of use	How to use resources	Volume used	Place to sell	Difficulties in collection	Remarks
			• Market bamboo pole to other villagers (@ US$1/pole) • Market bamboo shoot at the market or Kribus (@ US$ 0.25-0.5/pc)			• Lack of a technician who can train villagers • Lack of marketing information of bamboo furniture	But it is difficult for them to put such techniques into business since there is no equipment for furniture making. Hence, a set of equipment for furniture making and a specialist who can guide them are needed.
Papulu (Small Bamboo)	-	-	• Use papulu for a wall, broom, sunscreen, stick, pipe for making tua sabu. • Market a sunscreen at the market at US$ 5/sheet. (The buyers are from Manatuto, Dili and Kribus.)	-	Sun screen • Laclubar market • Kribus (to the people from Dili, Manatuto, Kribus)	• The locations of the trees are far from the settlements. • It is heavy to carry. • Make you feel itchy • The trees are burned by forest fires. • Stolen by others	-
Coconut	-	-	• Only for consumption	-	none	• Fall from coconut tree • The trees are burned by forest fires. • The trees are damaged by pest infestation and animals. • Coconuts are stolen by others without any permission of owner.	-
Ai bubur and Ai ru	-	n.a.	• Use them as construction materials, firewood, materials for fence, and fertilizer. • Ashes of Ai bubur/Ai ru, made by shifting cultivation, fertilize farms.	n.a.	none	• The locations of the trees are far from the settlements. • Machete is sometimes broken. • It is heavy to carry. • Lack of equipment to cut the tree	-

Available resources	Season	Level of use	How to use resources	Volume used	Place to sell	Difficulties in collection	Remarks
Ai buti	-	n.a.	• Ai buti is good for the host tree for honeybee. • Use its flower as an indicator of the rainy season.	n.a.	none	• The trees are damaged by forest fires.	Timber made of Ai buti is too soft.
Ai Hasfuil	-	n.a.	• Ai hasfuik is also good for honey comb. • Use it for timber. • Use its fruit for consumption.	n.a.	none	n.a.	-
Rattan	-	n.a.	• Use rattan for a rope for making a house, whip, and broom.	n.a.	none	• Thorns • Rattan trees are burned by forest fires. • The locations of the trees are far from the settlements.	-
Ai Kiar	-	n.a.	• Use its fruit for consumption. • Use its sap for lacquer.	n.a.	none	• It is too big to cut and also to carry. • The locations of the trees are far from the settlements.	-
Ai nar	-	n.a.	• Use Ai nar for a traditional fluet, timber, and furniture.	n.a.	none	• It is too heavy to carry. • The locations of the trees are far from the settlements. • There is no equipment to cut the tree.	-
Ai hali	-	n.a.	• Ai hali is good for honeybee.	n.a.	none	• The trees are damaged by forest fires.	Ai hali generally stands near water source. (It is recognized as a tree protecting a source of water.)
Samtuku	-	n.a.	• Use Samtuku as a shade tree for coffee, firewood, and host tree for honeybee. • Use its leaves as	n.a.	n.a.	• The tree causes damage to coffee trees and/or houses when it falls down. • The trees are	-

Available resources	Season	Level of use	How to use resources	Volume used	Place to sell	Difficulties in collection	Remarks
			fertilizer.			damaged by pest infestation or diseases.	
Ai lesuk	-	n.a.	• Use Ai lesuk for making a coffin. • Ai lesuk is good for honeybee.	n.a.	n.a.	• The trees or beans are damaged by pests or diseases. • The quality of beans is	-
Ai harek	-	n.a.	• Ai harek is good for honeybee. • Use Ai harek for traditional medicine for malarial and making a coffin.	n.a.	n.a.	n.a.	-
Coffee	-	n.a.	• Market beans at the Laclubar market or village (to the people from Bobonaro and Baucau.	n.a.	n.a.	• The trees or beans are damaged by pests or diseases. • The quality of coffee bean is not good.	-
Water source	-	n.a.	• Use it for cooking, washing, and watering vegetables.	n.a.	n.a.	n.a.	The volume of water declines during the dry season (Aug-Oct) and increases during the rainy season (Nov-Jul). A water resource is considered as a communal property, though any resources are generally recognized as properties of an owner of the land.

Appendix-G (4-11). Results of Group Discussion with Female Participants about Resource Use and Potential Resources for Livelihood Development

Theme: Use of land

Discussions:

- All lands in Batara are private property.
- There is no regulation on the rental of land. Villagers can rent out and sell their lands not only to other villagers in Batara but also someone living in other villages. There is no regulation on selling and renting land in the village. Accordingly, the main reason why villagers sell their lands is to avoid a land dispute between villagers.
- Villagers usually sell their lands to Church or those of Aldeia Weraulun, but also can sell their lands to anyone like the one from Suco Orlalan.
- The prevailing practices in renting lands for farming are as follows:
  - An owner provides seeds for crops to a tenant and a tenant grow crops. The produce is to be shared between them.
  - A tenant grows crops without any input from an owner but the tenant shall share farm produce.
  - A tenant grows crops without any input from an owner and make a payment in kind (animals: cattle, buffalo, etc.)
- The average land holding size in the village is estimated as follows:

Aldeia	Biggest	Smaller
Balulin	4 – 8 ha (6 HHs)	1 – 3 ha
Areain	5 – 8 ha (6 HHs)	1 – 4 ha
Fatuha	5 – 8 ha (4 HHs)	1 – 4 ha
Weraulun	4 – 5 ha (6 HHs)	1 – 3 ha

Resources in locality

- The women participants identified a total of 28 resources as shown below.

Resources	Volume	Usage
1. Tua Metan		Rope, Housing materials, Traditional wine
2. Honey	20 lit (Apr)	
3. Trees/Wood	3 bondles/day (firewood) 3 lods/yr (timber)	Firewood and Timber
4. Grasses	100 bundles	Housing materials, Roofing thatch
5. Water	-	-
6. Kumbili (Tuber)	1 bag/collection	Food
7. Abae (Tuber)	2 baskets/collection	Food
8. Maek (Tuber)	5 baskets/collection	Food
9. Aidila Fatuk	5 pieces/collection	Food/Fruits
10. Chili (up trees)	1 plastic/collection	
11. Chili (small)	1 plastic/collection	
12. Singumas (Tuber)	1 basket/collection	Food
13. Kinur	1 bag/collection	
14. Seur	1 bag/collection	
15. Leukun	1 bag/collection	
16. Ai ka	1 bag/collection	
17. Kabura	1 bag/collection	
18. Manu sa'a	1 bag/collection	
19. Weduk	1 bag/collection	
20. Hali	-	Timber
21. Markisa	1 basket/collection	Fruits
22. Dirik	1 basket/collection	
23. Labair	1 basket/collection	
24. Lasairo	1 bag/collection	
25. Maulato	1 bag/collection	
26. Abas fuik	2 plastic/collection	
27. Rotik	1 plastic/collection	
28. Wild banana	4 pieces/collection	

Theme	Discussions

➢ Those products can be harvested in the following places:
- Werulun: Fatu malus, Fatu uhi, Weru kalot, Kunluli, Tasi hatin, Toda, Binae eta, Siba kasa, Hatuwani, Ru le'eh, Humbo.
- Berulin: Fatu lelon, Ilerun, Harae, Ramek lee, Aneton, Mau kiak, Hurtula
- Arein: Bahareduk, Areain, Hatuha, Wanilaran, Sirbene, Sabu toha
- Fatuha: Abosabela, Nartukun, Werbana, Loliku, Lulaitula, Raemeda, Daumeta, Hatukaderi, Kolin, Lamahar, Luwauk, Hatumeran

➢ Detailed information/data about resources available in the locality are tabulated below.

Resources	Harvest time	Volume	Frequency	Problems
1. Tua Metan	Anytime		12times	wind
2. Honey	April	20 lit	1 time	wind
3. Timber	Anytime	30-50 trees	1 time	rain and forest fire
4. Firewood	Anytime	3 bundles	365 days	rain and forest fire
5. Grasses for house	Anytime	100 bundles	1 time	rain and forest fire
6. Grasses for animal	Everyday	-	365 days	rain and forest fire
7. Water	Everyday	3 times/day	365 days	rain and forest fire
8. Wild bean	September	4 bags/yr	1 time	rain, pest, forest fire, monkey
9. Kumbili (Tuber)	Dry season	1 basket	3 times	rain, pest, forest fire, monkey
10. Maek (Tuber)	Dry season	5 pieces/time	1 time	rain and forest fire
11. Aidila Fatuk	Dry season	5 pieces/time	1 time	rain and forest fire
12. Chili (up trees)	Dry season	1 plastic/time	1 time	rain, pest, forest fire
13. Chili (small)	Dry season	1 plastic/time	1 time	rain, pest, forest fire
14. Singumas (Tuber)	Dry season	1 basket/time	4 times	rain, pest, forest fire
15. Kinur	Everyday	1 bag/time	4 times	rain, pest, forest fire
16. Seur	Everyday	1 bag/time	1 time	rain, pest, forest fire
17. Lengkuas	Everyday	1 bag/time	1 time	rain, pest, forest fire
18. Aika	Everyday	1 bag/time	1 time	rain, pest, forest fire
19. Kabura	Everyday	1 bag/time	365 days	rain, pest, forest fire
20. La eru kei	Everyday	1 basket/time	1 time	rain and forest fire
21. Manu sa	Everyday	1 basket/time	1 time	rain, pest, forest fire
22. Weduk	Everyday	1 basket/time	1 time	rain, pest, forest fire
23. Hali	Dry season	1 basket/time	1 time	pest and forest fire
24. Markisa	Everyday	1 basket/time	365 days	pest and forest fire
25. Dirik	Dry season	1 basket/time	1 time	rain, pest, forest fire
26. La abir	Dry season	1 basket/time	1 time	rain, pest, forest fire
27. Lasairo	Dry season	1 bag/time	1 time	rain, pest, forest fire
28. Maulato	Everyday	1 bundle/time	365 days	rain
29. Abas fuik	Rainy season	1 plastic/time	1 time	pest and forest fire
30. Rotik	Everyday	1 plastic/time	3 times	rain, pest, forest fire
31. Mukolo	Dry season	4 trees/time	4 times	rain and forest fire
32. Lawadu	Everyday	1 basket/time	1 time	rain and forest fire
33. Lalere	Dry season	1 basket/time	1 time	rain and forest fire
34. Uhi wae	Dry season	1 basket/time	1 time	rain, pest, forest fire
35. Bamboo	Anytime	20 poles/time	3 times	forest fire
36. Bamboo shoot	Rainy season	25 shoots/time	3 times	pest and forest fire
37. Goiavas	Rainy season	1 bag/time	3 times	rain, pest, forest fire

List of major resources/ agricultural products important for livelihood development

➢ Important resources and products for their livelihoods are listed below.
- Maize, Cassava, Taro, Kontas (Turmeric), Beans (Fore Talan), Beans (Fore Kei), Pumpkin, Cucumber, Sweet potato, Forest bean, Celery (Angrao), Guayaba, Vegetables (Kebura), Tomato, Pigeon pea, Vegetables (Mode),
- Banana, Pineapple, Papaya, Orange, Mango, Jackfruit, Grapefruit (Jambua)
- Coffee, Honey, Avocado, Candlenut, Lemon, Strawberry, Passion fruit
- Animals

➢ The five most important resources/products are:
- Maize, Cassava, Kontas, Taro, Sweet potato

Theme | **Discussions**

➢ Uses of the above-listed resources are summarized below.

Resources	Usage of Resources
Maize	Eaten roast, fried, boiled, mashed and mixed with beans Used for making cakes Used for animal feed Sold
Cassava	Eaten roast, fried, boiled, and mashed Eat its leaves as a vegetable Used for cakes and chips Use its rinds for making paper Sold (cassava and cakes)
Sweet potato	Eaten roast, fried, and boiled Eat its leaves as a vegetable Used for animal feed Sold (cassava and cakes)
Taro	Eaten boiled Eat its leaves as a vegetable Used for making cakes Used for animal feed Sold

Pair-wise ranking among the important resources/ agricultural products

➢ The five most important resources were evaluated by using Pair-wise ranking method as shown below.

	Maize	Cassava	Kontas	Taro	Sw Potato	Total	Rank
Maize		Maize <1	Maize <1	Maize <1	Maize <1	4	1
Cassava			Cassava <2	Cassava <2	Cassava <2	3	2
Kontas				Taro	Sw potato <3	0	5
Taro					Sw potato <3	1	4
Sw potato						2	3

➢ The reasons behind the judgments are as follows:

<1: Maize was the most important resource as it was used for daily consumption as a staple crop.

<2: Cassava was earned the second highest score since it can be easily cooked and used for a variety of dishes.

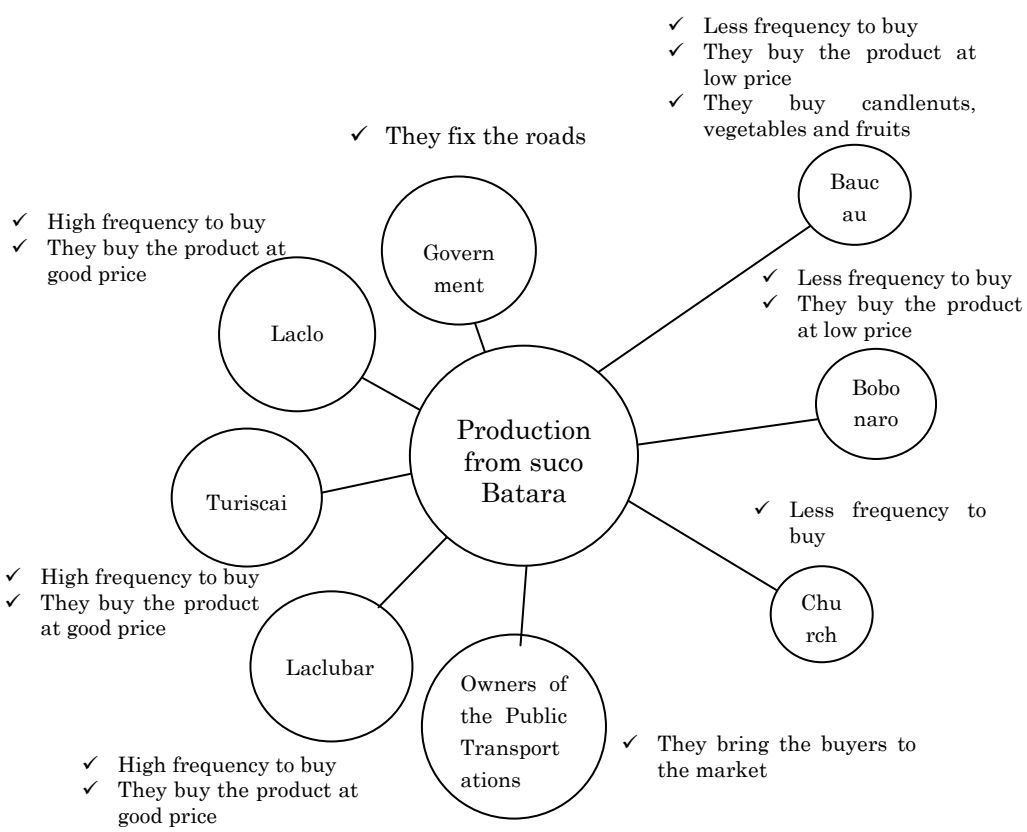
<3: Sweet potato was considered more important than Taro because it can be cooked in a variety of way.

Current practices in marketing major commodities

➢ The participants told that the following products and resources are marketed.

Resources	Main Buyers and Place of selling <1
Maize	Sold at the Laclubar market. Buyers are shoppers coming to the local market including the missioners.
Cassava	Cassava is sold at the Laclubar market and its processed sweets, such as cassava cake, are sold at kiosks in the market.
Sweet potato	Sweet potato is sold at the Laclubar market its processed sweets, such as cake, are sold at kiosks in the market.
Taro	Sold at the Laclubar market.
Coffee	Sold at the Laclubar market. Buyers also come to the village to buy coffee directly from each household. Buyers are shoppers living in Laclubar and the middlemen from Bobonaro.
Tua mutin, Tua sabu	Sold at the Laclubar market.
Tais	Sold within the village or to those who directly come from Laclubar or Maubissi to the village.
Honey	Sold at the Laclubar market. Buyers are middlemen living in Laclubar.
Animal (Goat, Pig, Chicken, Egg)	Sold within the village. Animals are used for traditional ceremonies and domestic consumption.

Note: <1 The Lackubar market is open every Thursday and Sunday.

Theme	Discussions
	➢ The following diagram shows marketing flows of the major agricultural commodities. 
Problems/Issues in Marketing	➢ The participants pointed out the marketing problems/issues as follows: - Some buyers bargain with them and purchase the products at low price. - Buyers from Laclo can not come to Laclubar during the rainy season since they can not cross the Laclo river due to the rise of the river. - There is no government or non-government organization that assists villagers in marketing the products or enhancing capacity to market the products. - The main road proceeding to Laclubar is often collapsed during the rainy season. - There is no cooperative existing.

Appendix-G (4-12). Plenary Discussion on Customary Rules on Natural Resource Management

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td>Existing Rules</td><td>

In general, respecting each other and not trespassing on the private property of others are common rules in the village.
Tara Bandu was revived in June 2003. The main aim of Tara Bandu is to control i) forest fire, ii) illegal cutting, iii) animal grazing, iv) thief, v) black magic practice, vi) sexual violence, and vii) any disturbance caused by being drunk. (Table xxx give more details of village regulations defined by Tara Bandu.)
There were many problems related to thieves, and environmental destruction before the implementation of Tara Bandu, but the number of issues has declined since 2003.
Examples of disputes over natural resources or the ways of resolving disputes are as follows:

<table>
<tr><th>Case/Violation</th><th>Ways of resolving disputes</th></tr>
<tr><td>Dispute over water use</td><td>They were resolved by Chef de Suco. Chef de Suco had meetings with violators and decided fines to be imposed on to them.</td></tr>
<tr><td>Forest fire</td><td>A violator is fined US $30 and one head of animal (pig or goat).</td></tr>
<tr><td>Illegal cutting</td><td>A person who wants cut a tree must consult with an owner of the land where a tree is located. If he/she does not consult with an owner, this is to be brought up to the local authorities. If the number of trees illegally cut by a violator is small, the violator would be just warned. If a violator cuts many trees, he/she would be fined US$ 30 and one head of pig or goat.</td></tr>
<tr><td>Free grazing</td><td>If a domestic animal causes damage to crops/plantations, an owner of such an animal will be fined US$ 30 and one head of pig or goat and forced to compensate an owner of the land for the damage.</td></tr>
</table>

Accordingly the village regulates animal grazing by providing that owners who own more than five heads of cattle shall raise cattle into a fixed area with fences while those who own less than 5 heads shall tie animals with a rope.
However, the understanding about the village regulations related to animal raising vary with sub-villages (aldeias). One aldeia said that owners of animals must put animals into a fenced area, but the rest (two aldeia) argued that owners of crop fields must also fence their crop fields.

</td></tr>
<tr><td>History of Tara Bandu</td><td>
<u>Portuguese era:</u>

Tara Bandu had been effective during the Portuguese era. Since Tara Bandu was strongly tied up with the law of the Portuguese government and the enforcement of the law was quite strong, villagers strictly followed the rules. (A violator used to be given a whipping.)

<u>Indonesian era:</u>

Since there were less forest fires, it seemed that Tara Bandu was effective during the Indonesian era.
One of the reasons why there were less forest fires was that the government extension staff had often visited suco and given information about the importance of forest protection and management.
Nevertheless, the number of violators had increased because the government’s enforcement of the law was weak.
Tara Bandu in the era came from the Government. (“Top-down Tara Bandu”)

<u>Present:</u>

The village (The local authorities and elders) revived Tara Bandu in 2003 with the assistance of Care International.

</td></tr>
</table>

<table>
<tr><th>Theme</th><th>Discussions</th></tr>
<tr><td></td><td>

Many community members have followed the rules defined by Tara Bandu.
Tara Bandu was initiated by the community. (“Bottom-up Tara Bandu”)
However, the Chef de Suco stressed that there is a need to have government regulations to support the local regulations (Tara Bandu) so as to make the local regulations more effective and sustainable.

</td></tr>
<tr><td>Rules/ Regulations defined by Tara Bandu</td><td>

The following activities are banned under the regulations of Tara Bandu.

<table>
<tr><th>Activities banned</th><th>Ways of resolving disputes</th></tr>
<tr><td>Free fore fire</td><td>➢ A violator shall be fined US$ 30, one head of pig and one head of goat.
➢ If the community can not identify a violator who is responsible for a fire, the local authorities will pray to the Lulik (a symbol built in the community) to find the person.
➢ If a fire damages crops, a violator shall pay the same fine mentioned above and replant all the damaged crops.
➢ If a fire damages or destroys other properties, a violator shall pay the above-mentioned fine.</td></tr>
<tr><td>Free tree cutting</td><td>➢ If a person wants cut trees in either common land or his own land for housing purpose, the person shall inform the Chef de Aldeia of cutting trees.
➢ If a person wants cut trees in the land owned by others, the person shall coordinate/consult with an owner of the land.
➢ A person who has cut trees in other member’s property without any consultation shall be fined US$ 30, one head of pig and one head of goat.</td></tr>
<tr><td>Free grazing</td><td>➢ Owners of livestock must raise animals in the field fenced around.
➢ If livestock are found herding out of the fenced area, a person who has observed shall inform an owner of livestock.
➢ Nobody can not kill livestock since the community has a decision making body (Village Commission) in itself.
➢ If a crop field or plantation is damaged by livestock, a owner of livestock shall compensate for the damage.
➢ A violator shall be fined US$ 30, one head of pig and one head of goat.</td></tr>
<tr><td>Steal</td><td>➢ A thief shall give back the same with what he/she has stolen to an victim and be fined US$ 30, one head of pig and one head of goat.</td></tr>
<tr><td>Black magic practices</td><td>➢ A person who practices a black magic shall be brought to the public and fined US$ 30, one head of pig and one head of goat.</td></tr>
<tr><td>Sexual violence</td><td>➢ The village commission shall judge the case based on the situation of the case, a violator shall be fined US$ 30, one head of pig and one head of goat.</td></tr>
<tr><td>Disturbance by drunk</td><td>➢ If a person uses weapon illegally, threat others, or throw stones to others (or houses), the commission shall report it to the police immediately.</td></tr>
</table>

In case a violator does not follow the rules, the local authorities and elders will sit together and discuss how to deal the issue.
The extent of the fine/penalty may depend on the financial capability of a violator. (EX. If a violator does not have enough money to pay, the amount of the fine might be reduced.)

</td></tr>
<tr><td>Leadership of the Village over Natural Resources</td><td>
<u>Portuguese era:</u>

The following persons/groups had power over natural resources and made verbal regulations.

King/Liurai
Chef de Suco
Chef de Post (Sub-district Administrator)

</td></tr>
</table>

Theme	Discussions
	- Chef de Aldeia - Chef de Sub-aldeia (Murodor) Indonesian era: ➢ The following persons/groups worked and coordinated with each other for environmental protection in the village. - Camat (Sub-district Administrator) - Kepala Desa (Chef de Suco) - RK/RT (Coordinators of households) - Forest guards - Forest fire fighters - Extension staff Present: ➢ The local authorities are the ones who formulate local regulations to protect forests. - Chef de Suco (1 person) - Chef de Aldeia (4 persons) - Women's representatives (2 persons) - Youth Representatives (2 persons) - Lia nain (1 person) ➢ The Government's decree, "No. 5 2004", governing the local authority clearly defines that "Chef de Suco has authority to draft local regulations" and "Villagers must protect environment and natural resources of its locality". ➢ According to the Chef de Suco, the regulation (No. 5 2004) was not disseminated to community members by the Sub-district Administrator.
Process of Solving Disputes	➢ In general, if anything happen, it will be brought to the Chef de Aldeia. ➢ It the case can not be resolved by the Chef de Aldeia, it will be brought to the Chef de Suco. ➢ It the case can not be resolved by the Chef de Suco, it will be brought to the Administrator of the Sub-district. ➢ As of now, there is no case brought to the Administrator. (All the issues have been resolved at the level of Chef de Suco.)
Any Government Regulations	➢ There is no government regulation governing natural resources and environmental protection. ➢ There has been no issue on natural resource management so far.
Way of Tara Bandu Ceremony	Step 1: Take "Lulic things (e.g., sward, etc.) from Uma Lulic to the ceremony site; Step 2: Pray together with all the members of the local authorities and elders putting Lulic tings at the ceremony site; Step 3: The Spirit of Lulic (Holy Spirit) will come and possess someone. The person possessed will sit on the Lulic sward and convey a message of Lulic. The person will fall into sleep after giving the Lulic message. Step 4: Kill a pig or goat or other animal. ➢ In Batara, it seems that the prevailing belief in Lulic strongly supports Tara Bandu.