

## *Tables*

**Table F.3.1 Distribution of Reforestation in and around the Study Area  
during 1976 – 1999**

Fiscal Year	Location	Area (ha)	Failure				Success	Grown species
			Fired	Fail	Cleared Away	Total		
1976/1977	Mt. Potong Noongan	71	71	0	0	0	0	Pine, etc
		529	0	297	0	297	232	Pine, etc
1977/1978	Mt. Sopotan Kayuwatu	2.400	0	1.786	614	2.400	0	Pine, etc
		200	0	0	200	200	0	Pine, etc
1980/1981	Mt. Masarang Mt. Mahawu	175	175	0	0	175	0	Pine, etc
		200	65	135	0	200	0	Pine, etc
1981/1982	Mt. Mahawu	170	78	92	0	170	0	Pine, etc
1983/1984	Mt. Sopotan	100	100	0	0	100	0	Pine, etc
1984/1985	Mt. Sopotan Mt. Kawatak Tumaratas	500	115	0	0	115	385	Pine, Nantu
		100	0	0	35	35	65	Pine, Nantu
		100	0	25	0	25	75	Pine, Nantu
1985/1986	Makalonsow Mt. Lembean	200	0	30	0	30	170	Pine, Nantu
		100	100	0	0	100	0	Pine, Nantu
1986/1987	Mt. Lembean	300	0	0	0	0	300	Pine, Nantu
1988/1989	Makalonsow	100	0	0	0	0	100	Nantu, etc
1991/1992	Ranolambot	150	0	50	0	50	100	Nantu, etc.
1992/1993	Mt. Sopotan	150	0	0	0	0	150	Nantu, etc.
1993/1994	Ranolambot Noongan	100	0	0	0	0	100	Nantu, etc.
		200	0	0	0	0	200	Nantu, etc.
1994/1995	Makalonsow	200	200	0	0	200	0	Gmelina, Nantu
1995/1996	Makalonsow	400	0	0	0	0	400	Gmelina, Nantu
1996/1997	Makalonsow	600	0	0	0	0	600	Gmelina, Nantu
1998/1999	Rerer	100	0	0	0	0	100	Gmelina, MPTS

*Source: Statistics of Dinas Kehutanan Dati I Sulawesi Utara, 1999.*

*Personal communication with Katuuk, 2000*

**Table F.3.2 Regreening Activities in the Study Area in FY 1999/2000**

No.	Location	Activities	Area/Unit
<b>I.</b>	<b>Tondano Sub-district</b>		
1	Kelurahan' Rinegetan	Private Forest / Estate	50 ha
2	Kelurahan' Sumalangka	Private Forest / Estate	50 ha
3	Kelurahan' Wewelen	Private Forest / Estate	25 ha
4	"Kelurahan' Tataaran II	Private Forest / Estate	25 ha
5	Kelurahan' Tataaran II	Private Forest / Estate	50 ha
6	Kelurahan' Paleloan	Private Forest / Estate	25 ha
7	Kelurahan' Tuutu	Private Forest / Estate	50 ha
		KBD	0,5 ha
8	Kelurahan' Wawalintowan	Private Forest / Estate	50 ha
<b>II.</b>	<b>Toulimambot Sub-district</b>		
1	Kelurahan' Kiniar	Private Forest / Estate	50 ha
		UP-UPSA'	1 unit
2	Kelurahan' Taler	Private Forest / Estate	50 ha
<b>III</b>	<b>Eris Sub-district</b>		
1	Desa' Touliang Oki	Private Forest / Estate	50 ha
		UP-UPSA	1 unit
2	Desa' Tandengan	Private Forest / Estate	50 ha
3	Desa' Eris	Private Forest / Estate	50 ha
<b>IV</b>	<b>Kakas Sub-district</b>		
1	Desa' Simbel	Private Forest / Estate	50 ha
2	Desa' Toulimambe	Private Forest / Estate	50 ha
3	Desa' Tounumomei	Private Forest / Estate	50 ha
4	Desa' Kaweng	UP-UPSA	1 unit
<b>V</b>	<b>Remboken Sub-district</b>		
1	"Desa' Talikuran	Private Forest / Estate	50 ha
2	Desa' Paslatan	Private Forest / Estate	50 ha
3	"Desa' Sionia	Private Forest / Estate	50 ha
4	Desa' Kaima	Private Forest / Estate	50 ha
<b>VI</b>	<b>Tomohon Sub-district</b>		
1	"Desa' Rurukan	Preventor / Check Dam	1 unit
<b>VII</b>	<b>Langowan Sub-district</b>		
1	Desa' Teep	Private Forest / Estate	50 ha
2	Desa' Touneiei	Private Forest / Estate	50 ha
3	Desa' Manembo	Private Forest / Estate	50 ha
4	Desa' Winebetan	Private Forest / Estate	50 ha
5	Desa' Kaayuran Atas	Private Forest / Estate	50 ha
		KBD	1 unit
6	Desa' Waleure	KBD	0,5 unit
7	Desa' Temboan	Private Forest / Estate	25 ha
8	Desa' Noongan	KBD	0,5 ha
<b>VIII</b>	<b>Tompaso Sub-district</b>		
1	Desa' Toure	Private Forest / Estate	50 ha
2	Desa' Tonsewer	Private Forest / Estate	50 ha
<b>IX</b>	<b>Pineleng Sub-district</b>		
1	Desa' Sawangan	Private Forest / Estate	50 ha
		Preventor / Check Dam	1 unit
2	Desa' Ramangia	Private Forest / Estate	50 ha
		KBD	1 unit
3	Desa' Tombuluan	Private Forest / Estate	50 ha
4	Desa' Kembes	Private Forest / Estate	50 ha
5	Desa' Koka	Private Forest / Estate	25 ha
<b>X</b>	<b>Airmadidi Sub-district</b>		
1	Kelurahan' Sukur	Private Forest / Estate	50 ha
2	Kelurahan' Sarongsong I	Preventor / Check Dam	1 unit
3	Desa' Tanggari	Private Forest / Estate	50 ha
		KBD	1 unit
4	Desa' Rumengkor	Private Forest / Estate	25 ha
5	Desa' Kembuan	Private Forest / Estate	50 ha
6	Desa' Kolongan	Private Forest / Estate	50 ha
<b>XI</b>	<b>Dimembe Sub-district</b>		
1	Desa' Paniki Atas	Private Forest / Estate	50 ha
		Preventor / Check Dam	1 unit
2	Desa' Matungkas	Private Forest / Estate	50 ha
		Preventor / Check Dam	1 unit

Notes: \* KBD = Kebun Bibit Desa (Village Nursery)

\*\* UP-UPSA (Unit Percontohan Usaha Pelestarian Sumber Daya Alam) = Demonstration Plot for Conservation of Natural Resources

**Table F.4.1 Protection Forest Boundaries in the Study Area**

No.	Registration No.	Location	Decrees (No., Date)	Area (ha)	Structuring		Year of Restructuring	Map Scale
					Year	Boundary code		
1	42	Mt. Sopotan	GB.No.8; July 5, 1930	13,440	1932	G.1 - G.333	-	1:20,000
2	46	Mt. Lengkoan	GB.No.3; Nov. 22, 1932	56	1935	G.1 - G.11	-	1:5,000
3	47	Mt. Tampusu	GB.No.17; July 15, 1933	29	1938	B.1 - B.29, G.1-G.10	1985/1986	1:2,500
4	48	Mt. Kawatak	GB.No.3; July 5, 1930	980	1934	G.1-G.12	-	1:20,000
5	50	Mt. Mahawu	GB.No.17; July 15, 1933	550	1939	G.1-G86	1986/1987	1:10,000
6	52	Mt. Lembean	GB.No.3; Jan. 5, 1932	2,700	?	B.1-B.130	1977/1978	1:20,000
7	54	Mt. Klabat Mt. Masarang	GB.No.38; April 2, 1932	5,670	?	B.1-B.183	1996/1997	1:20,000
8		Mt. Kaweng	Decision of Forestry Minister, No.250/Kpts-II/UM/1984; Feb. 20, 1984	146.97	1996	?	-	1:50,000
9			Decision of Forestry Minister, No.250/Kpts-II/UM/1984; Feb. 20, 1984	417.86	1996	?	-	1:25,000

GB: *Gouvernementsbesluit (Governer's decision)*

Source: *Bub BIPHUT Manado, 2000*

**Table F.4.2 Price of Timber Woods**

Spesies	Selling price from farmer (Rp / m3)	Selling price at the shop (Rp / m3)	Remarks
Linggua ( <i>Pterocarpus indicus</i> )	1.750,000	2.250,000	Plank
Cempaka ( <i>Elmerillia sp.</i> )	700,000	950,000	Plank
		850,000	Beam
Nantu ( <i>Palaquium obtusifolium</i> )	450,000	600,000	Plank/Beam
Pulutan ( <i>Palaquium obovatum</i> )	450,000	600,000	Beam
Mahoni ( <i>Swietenia macrophylla</i> )	450,000	600,000	Beam
Durian ( <i>Durio zibetinus</i> )	400,000	550,000	Plank/Beam
Wusel ( <i>Pometia tomentosa</i> )	400,000	550,000	Plank/Beam
Wolo ( <i>Pterospermum celebicum</i> )	300,000	450,000	Plank
Wakan ( <i>Lithocarpus celebicus</i> )	300,000	450,000	Plank
Kananga ( <i>Cananga odorata</i> )	300,000	450,000	Plank

Source : 1. Toko / Timbunan di Tomohon (the owner: Mr.Piet Oroh)  
2. Mr. Nico Polii (forestry officer / KRPH Tomohon)

Spesies	Selling price from farmer (Rp / m3)	Selling price at the shop (Rp / m3)	Remarks
Cempaka ( <i>Elmerillia sp.</i> )		1,000,000	Plank/Beam
Nantu ( <i>Palaquium obtusifolium</i> )		500,000	Plank/Beam
Wakan ( <i>Lithocarpus celebicus</i> )		500,000	Plank/Beam

Source : Usaha Karya Woloan Village

Spesies	Selling price from farmer (Rp / m3)	Selling price at the shop (Rp / m3)	Remarks
Linggua ( <i>Pterocarpus indicus</i> )		2,000,000	Plank
Cempaka ( <i>Elmerillia sp.</i> )		800,000	Plank/Beam
Nantu ( <i>Palaquium obtusifolium</i> )		500,000	Plank/Beam

Source : UD Purna Yudha Kinamang Leilem Village

Spesies	Selling price from farmer (Rp / m3)	Selling price at the shop (Rp / m3)	Remarks
Linggua ( <i>Pterocarpus indicus</i> )		2,000,000	Plank
Cempaka ( <i>Elmerillia sp.</i> )		800,000	Plank/Beam
Nantu ( <i>Palaquium obtusifolium</i> )		500,000	Plank/Beam

Source : UD. Reymond Leilem Village

Spesies	Selling price from farmer (Rp / m3)	Selling price at the shop (Rp / m3)	Remarks
Cempaka ( <i>Elmerillia sp.</i> )		900,000	Plank
Nantu ( <i>Palaquium obtusifolium</i> )		600,000	Plank/Beam
Lower quality than Nantu		375,000	Plank/Beam

Source : Walian Jaya (Timber Shop) Tomohon

Spesies	Selling price from farmer (Rp / m3)	Selling price at the shop (Rp / m3)	Remarks
Linggua ( <i>Pterocarpus indicus</i> )		2,500,000	Plank
Cempaka ( <i>Elmerillia sp.</i> )		925,000	Plank/Beam
Nantu ( <i>Palaquium obtusifolium</i> )		625,000	Plank/Beam
Lower quality than Nantu		425,000	Plank/Beam

Source : UD. Kalpataru Manado

Spesies	Selling price from farmer (Rp / m3)	Selling price at the shop (Rp / m3)	Remarks
Linggua ( <i>Pterocarpus indicus</i> )		2,000,000	Plank
Cempaka ( <i>Elmerillia sp.</i> )		900,000	Plank/Beam
Nantu ( <i>Palaquium obtusifolium</i> )		500,000 - 550,000	Plank/Beam
Lower quality than Nantu		350,000	Plank/Beam

Source : Dinas Kehutanan Minahasa (Mr. Esry Wowor)

**Table F.4.3 Useful Tree Species in the Study Area**

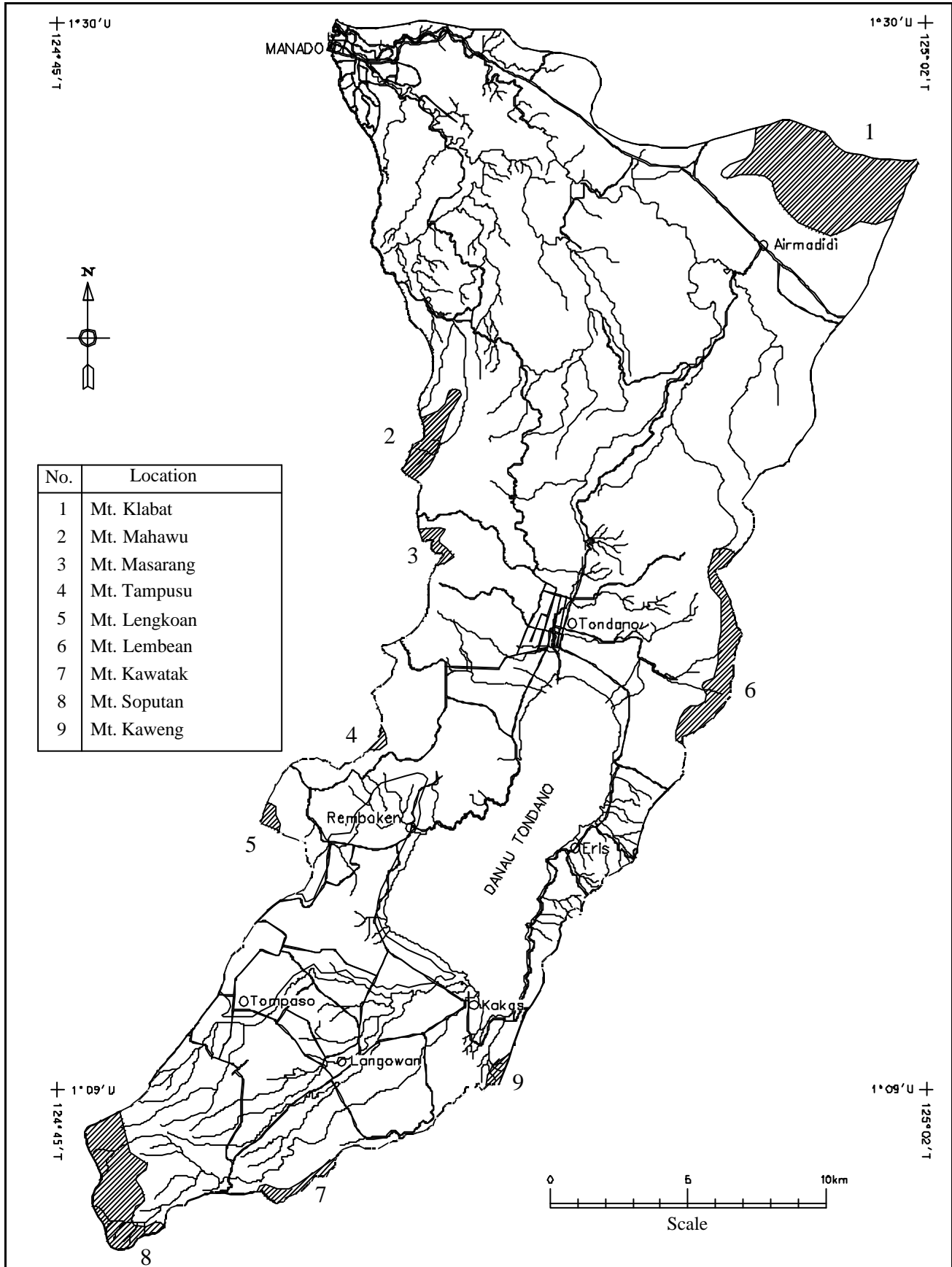
No	Latin Name	Lokal Name	Usage
1	2	3	4
1	<i>Agathis celebica</i>	Agatis / Damar	Construction, Plywood, Furniture, Music and sports instruments, matches, pulp, pencil
2	<i>Annona mucikata</i>	Sirsak	Fruits
3	<i>Artocarpus integrata</i>	Nangka	Fruits, Vegetables
4	<i>Aleurites molluccana</i>	Kemiri	Spice, Cosmetics
5	<i>Areca oxycarpa</i>	Palem	Land conservation
6	<i>Areca cathecu</i>	Pinang	Medicine, Ornamental purpose
7	<i>Arenga undulatifolia</i>	Aren/enau	Sugar, Alcohol, Broom, rope
8	<i>Averrhoa carambeia</i>	Belimbing	Fruits
9	<i>Albizia falcataria</i>	Sengon	Construction, Wrapping materials
10	<i>Casuarina sumatrana</i>	Cemara	Land conservation
11	<i>Casuarina junghuniana</i>	Cemara	Land conservation
12	<i>Casuarina equisetifolia</i>	Cemara	Land conservation, Ornamental
13	<i>Cananga odorata</i>	Kenanga	Construction
13	<i>Cinnamomum burmanii</i>	Kayu manis	Spice
14	<i>Cocos nucifera</i>	Kelapa	Oil, Flour, Firewood, Furniture
15	<i>Cordia blancoi</i>	Kanonan	Fuel wood, Paste
16	<i>Durio zibethinus</i>	Durian	Construction, Fruits
17	<i>Dysoxylum caulestachium</i>	Tombawak	Construction
18	<i>Excocoria agalloca</i>	mapopok	Construction
19	<i>Elmerillia celebica</i>	Cempaka wasian	Construction, Door and window frame
20	<i>Elmerllia ovalis</i>	Cempaka	Construction, Door and window frame
21	<i>Eugenia aromatica</i>	Cengkih	Fruits
22	<i>Eugenia aquatica</i>	Jambu air	Fruits
23	<i>Eugenia malaccencis</i>	Jambu	Fruits
24	<i>Erytrina cristagali</i>	Dadap	Land conservation
24	<i>Ficus celebensis</i>	Beringin	Land conservation
26	<i>Ficus benyamina</i>	Beringin	Land conservation
27	<i>Gnetum genemon</i>	Melinjo/ganemo	Vegetable
28	<i>Garcinia mangostana</i>	Manggis	Fruits
29	<i>Koordersiodendron pinatum</i>	Kayu bugis	Construction
30	<i>Lansium domesticum</i>	Lansat	Fruits
31	<i>Lithocarous celebicus</i>	Wakan	Construction
32	<i>Livistona rotundivolia</i>	Woka	Land conservation, Wrapping materials
33	<i>Metroxylon sagu</i>	Rumbia	Sago flour, Roofing materials
34	<i>Myristica fragrans</i>	Pala	Fruits, Spece
35	<i>Mangifera indica</i>	Mangga	Fruits
36	<i>Nephelium lappacium</i>	Rambutan	Fruits
37	<i>Octomeles Sumatrana</i>	Binuang	Construction, Door and window frame
38	<i>Palaquium Abovatum</i>	Pulutan	Construction, Door and window frame
39	<i>Palaquium Obtusifolium</i>	Nantu	Construction, Door and window frame
40	<i>Pangium Edule</i>	Pangi	Vegetable
41	<i>Pinus merkusii</i>	Pinus	Construction, Firewood, Pulp, Resin
42	<i>Pingafetha Filaris</i>	Nibong	Land conservation
43	<i>Pterocarpus indicus</i>	Angsana/Linggua	Furniture, Door and window frame
44	<i>Pterospermium Celebicum</i>	Wolo	Construction
45	<i>Parsia Speriosa</i>	Petai	Vegetable
46	<i>Parsia Americana</i>	Alpokot	Fruits
47	<i>Pometia Tomentosa</i>	Wusel	Construction
48	<i>Sivietenia Macrophylla</i>	Mahoni	Furniture, Door and window frame
49	<i>Spondias pinata</i>	Kedondong	Fruits
50	<i>Toona Celebica</i>	Lalumpek	Construction

#### F.4.4 Cost Estimation for Forestry Program

No.	Program	Items of Action	Items of expece	Cost (Rp)	Year
1	Forest boundary	Field survey	1 surveyer	9,000,000	1
			2 survey assistant	18,000,000	1
			4 labors	8,000,000	1
			equipment(rental)	4,000,000	1
		Boundary mapping	1 surveyer (mapping)	4,500,000	1
			2 mapping assistant	9,000,000	1
			equipment (1 unit)	10,000,000	1
		Construction of monuments	1 supervisor	2,250,000	1-2
			Labors	12,000,000	1-2
materials	60,000,000		1-2		
2	Community forestry	Management	1 Manager	984,000,000	2-11
		Survey and planning	1 surey- planners	9,000,000	2
			Labors	2,000,000	2
		Nursery construction	Labours	1,000,000	3
			Materials	5,000,000	3
		Nursery maintenance	Labours	0	3-11
			Materials	18,000,000	3-11
Planting trees	Labors	0	3-11		
	equipment	9,000,000	3-11		
Maintenance of planted area	Labors	0	4-21		
3	Reforestation	Management	1 manager	984,000,000	5-14
		Survey and planning	2 surey- planners	18,000,000	5
			Labors	4,000,000	5
		Nursery construction	Labors	5,000,000	6
			materials	25,000,000	6
		Nursery Operation	Labors	360,000,000	6-9
			materials	40,000,000	6-9
Planting	Labors	80,000,000	6-9		
	equipment	5,000,000	6-9		
Treating of planted areas	Labors	80,000,000	7-14		
4	Forest patrol	Patrolling	12 Forest guards	1,080,000,000	5-14
			equipment	6,000,000	5
			Motor sycles	120,000,000	5
		Construction of stations	6 Stations	120,000,000	5
Operation of sstations	6 Stations and equipmen	48,000,000	5-14		
5	Non-wood forest products	Research	3 Reserchers	147,600,000	5-6
6	Firewood Plantation	Construction of delivery Stations	7 Delivery Stations	7,000,000	5-7
		Operation of delivery Stations	7 Stations and equipmen	2,800,000	5-14
7	Timber Plantation	Management	1 manager	984,000,000	5-14
		Extension services	Extension workers	2,700,000,000	5-14
		Nursery construction	Labours	18,000,000	5-7
			Materials	45,000,000	5-7
Nursery operation	Labours	1,458,000,000	6-14		
	Materials	162,000,000	6-14		
8	Extension services	Training program	Lecturer	41,000,000	5-9
			Materials	5,000,000	5-9
Total				9,710,150,000	

## *Figures*



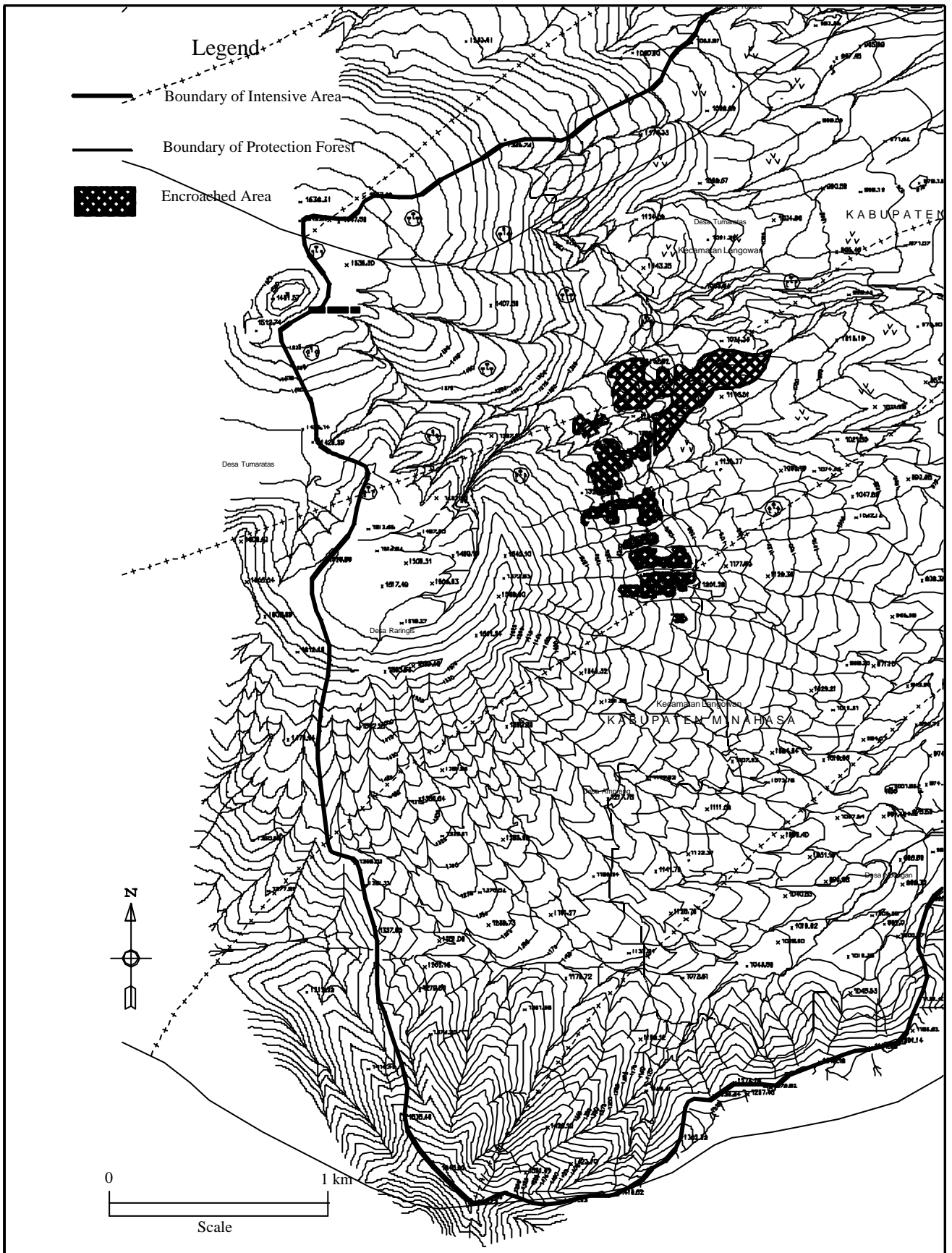


The Study on Critical Land and Protection Forest Rehabilitation at Tondano Watershed in the Republic of Indonesia

Japan International Cooperation Agency

Figure F.3.1

Distribution of Protection Forests

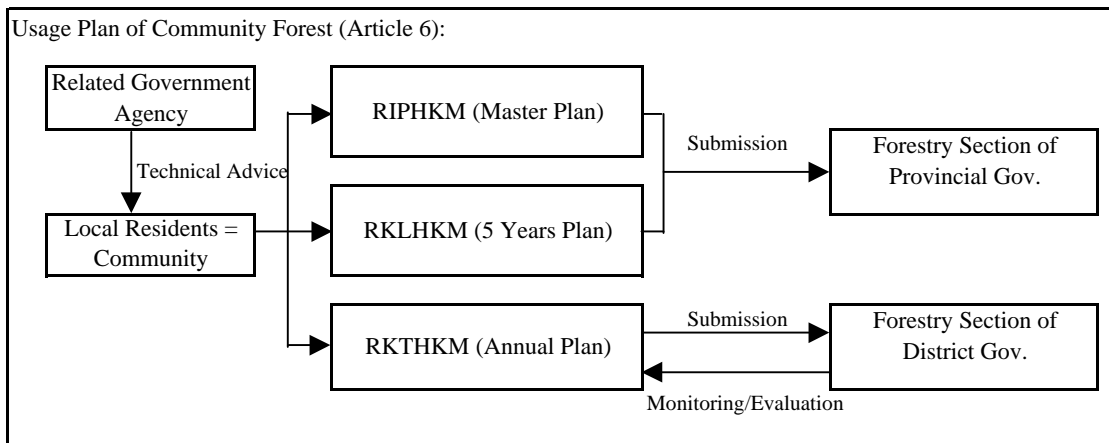
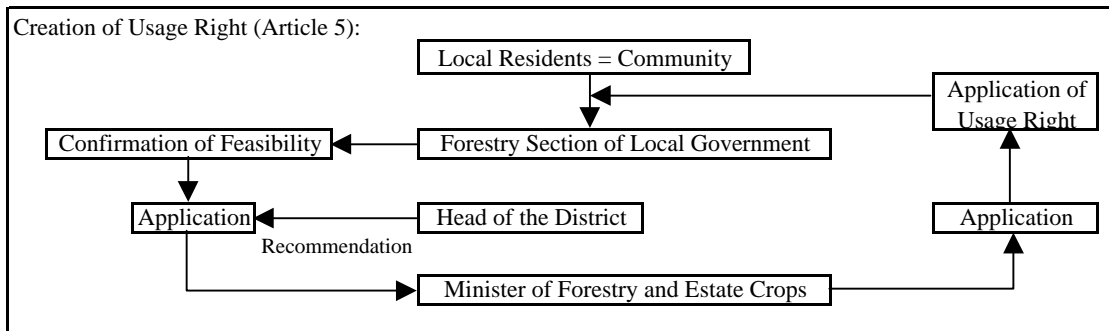
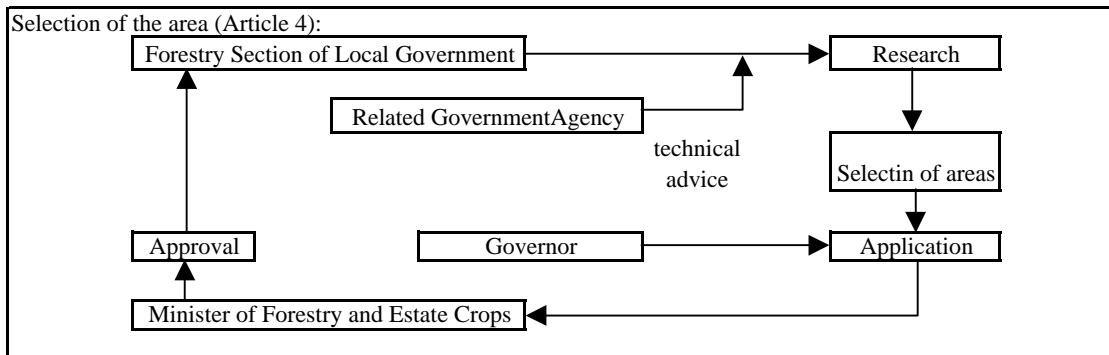


The Study on Critical Land and Protection Forest Rehabilitation at Tondano Watershed in the Republic of Indonesia

Japan International Cooperation Agency

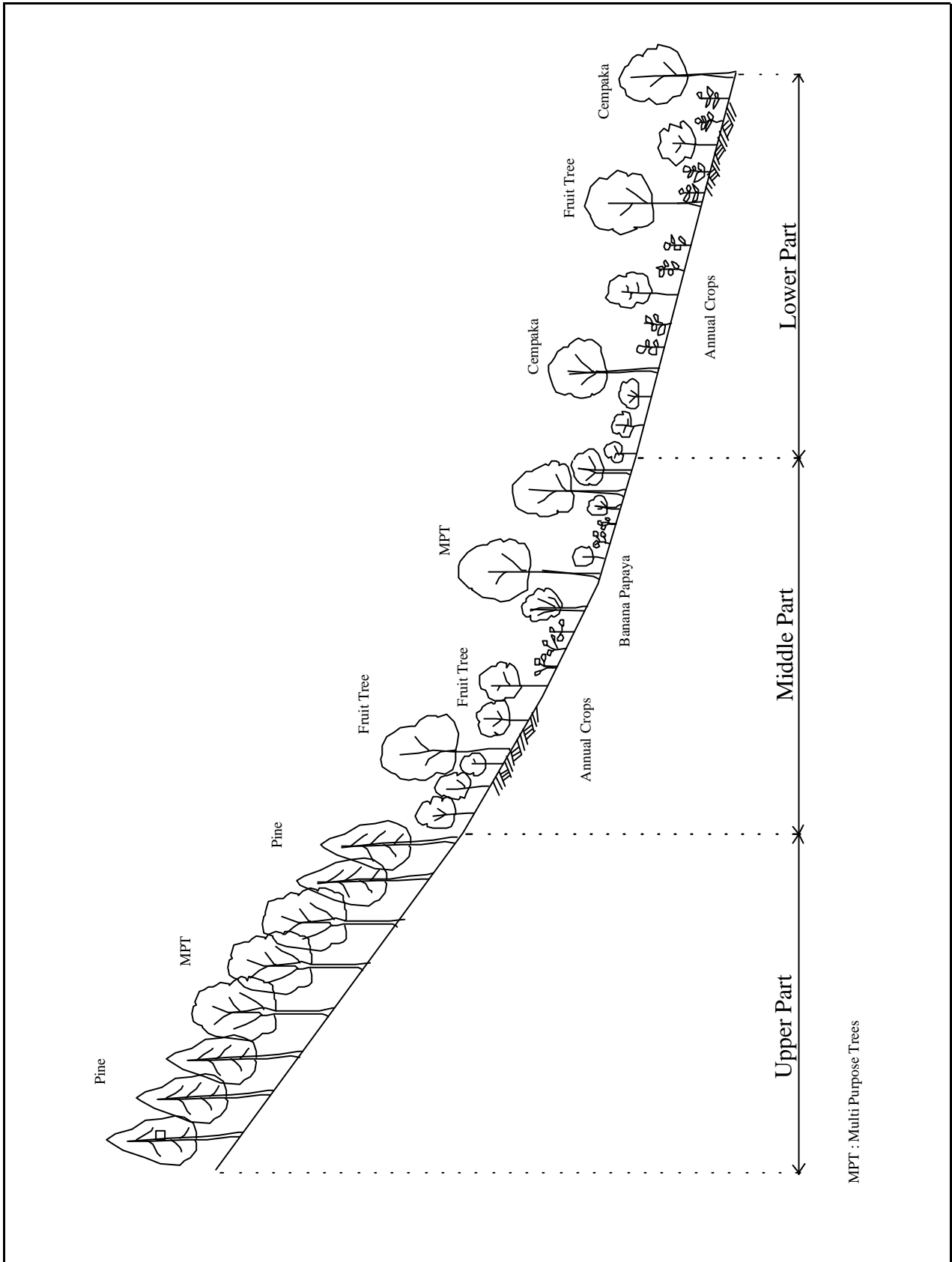
Figure F.4.1

Encroached Area in Soputan Protection Forest



Source : No.677 / Kpts- 11/1998

<p><b>The Study on Critical Land and Protection Forest Rehabilitation at Tondano Watershed in the Republic of Indonesia</b></p>	<p><b>Figure F.4.2</b> <b>Legal Procedure of Community Forestry</b></p>
<p>Japan International Cooperation Agency</p>	



**The Study on Critical Land and Protection Forest Rehabilitation at Tondano Watershed in the Republic of Indonesia**

Japan International Cooperation Agency

**Figure F.4.3**  
**Cross Section of Proposed Community Forestry**

# ***Attachment-F.1***

***Interview Survey for Industry Consuming Forest Products***

## Interview Survey for Industry Consuming Forest Products

### 1. Usaha Karya (Woloan village)

Interviewee: the owner, Mr. Julius Pusung

(1) begin : year 1990

(2) kind of industry : wooden house factory

(3) kind of trees species used and price per unit :

- Aliwowos (*Homalium sp*): Rp 500.000 / m<sup>3</sup>,

- Cempaka (*Elmerillia sp.*): Rp 1.000.000/ m<sup>3</sup>,

- Nantu (*Palaquium sp.*): Rp 500.000/ m<sup>3</sup>

(4) place of producing of the trees : Bolaang Mongondow

(5) way of obtaining : by buying, seller bring the timber (it takes 2 weeks after ordering)

(6) amount of consumption : 360 m<sup>3</sup>/ year

(7) amount of products : 12 houses (9 m x 14 m) annually

(8) number of the factory in this village : about 20 units

(9) others :

\* five years ago, they bought *Cempaka* from Rurukan people but there is nothing at present

\* the customers are from Manado, Jakarta, Bogor, even foreign countries (e.g. Australia)

\* price of one house : Rp 20.000.000 – Rp 60.000.000

### 2. UD Purna Yudha Kinamang (Leilem village)

Interviewee: the owner, Mr. Mumu

(1) begin : year 1995

(2) kind of industry : furniture

(3) kind of trees species used and price per unit :

- Linggua (*Pterocarpus indicus*): Rp 2.000.000 / m<sup>3</sup>,

- Cempaka: Rp 800.000/ m<sup>3</sup>,

- Nantu: Rp 500.000/ m<sup>3</sup>

(4) place of producing of the trees : Bolaang Mongondow

- (5) way of obtaining : by buying
- (6) amount of consumption : 5 – 10 m<sup>3</sup>/ month or 60 – 120 m<sup>3</sup>/year (90 % of need was Nantu)
- (7) number of the factory in this village : about 80 % of household

### **3. UD Reymond (Leilem village)**

Interviewee: the owner, Mr. Mumu

- (1) begin : year 1995
- (2) kind of industry : furniture, oxcart, etc.
- (3) kind of trees species used and price per unit :
  - Linggua: Rp 2.000.000 / m<sup>3</sup>,
  - Cempaka: Rp 800.000/ m<sup>3</sup>,
  - Nantu: Rp 500.000/ m<sup>3</sup>
- (4) place of producing of the trees : Bolaang Mongondow
- (5) way of obtaining : by buying
- (6) amount of consumption :
  - Nantu : 10 m<sup>3</sup>/ month
  - Linggua: 1- 5 m<sup>3</sup>/month
  - Cempaka: 2 – 3 m<sup>3</sup>/month

### **4. Brick Making (Wewelan village)**

Interviewee: the worker, Mr. Max Wolayan

- (1) begin : year 1975
- (2) kind of industry : bricks making
- (3) kind of trees species used for firewood: Old coconut tree
- (4) place of producing of the trees : Kauditan/ Tonsea
- (5) way of obtaining : by buying
- (6) amount of consumption : 80 m<sup>3</sup>/year/stove
- (7) number of the factory in this village : 10 households
- (8) others: \* the facing problem now is how to overcome the lack of firewood.

## 5. Pottery industry (Pulutan Village)

Interviewee: members of the owner, Mamahit and Mentang family

- (1) begin : year 1995
- (2) kind of industry : pottery home industry
- (3) kind of trees species used :dead clove trees, old coconut, Glyricidea sp.
- (4) price per unit: Rp 40.000 / m<sup>3</sup>
- (5) place of producing of the trees: Kasuratan village, Sonder village.
- (6) way of obtaining : by buying, the seller offers firewood directly
- (7) amount of consumption : 36 m<sup>3</sup>/ year/stove
- (8) number of the factory in this village : about 50 % of household
- (9) others: \* People obtain raw material (soil) for making pottery from certain place in the village. Village government manages the place. People who need soil have to pay Rp 85.000 per "ball" (Rp 35 000 paid to *LKMD/LMD* (village community society/village conference society) and Rp 50.000 paid to the worker who digs the soil).

## 6. Fueniture factory (Kakas village)

Interviewee: family members of the owner (anonymity)

- (1) begin : year 1995
- (2) kind of industry : furniture
- (3) kind of trees species used: mix timber
- (4) price per unit :Rp 500.000 – 800.000/ m<sup>3</sup>
- (5) way of obtaining: by buying in material shop. Sometimes local people bring their own timber to barter it for furniture.
- (6) amount of consumption : 12 m<sup>3</sup>/ year
- (7) others : \* the customers are local people

## 7. Furniture factory (Touliang Oki village)

Interviewee: the owner, Mr. Noldy

- (1) begin : year 1990
- (2) kind of industry: furniture
- (3) kind of trees species used:



- Aras (*Duabanga Moluccana*)

- Kenanga (*Kananga odorata*)

(4) price per unit: Rp 500.000 / m<sup>3</sup> for Aras

(5) place of producing of the trees : Tombatu, Motoling

(6) way of obtaining : by buying from the material shop

(7) amount of consumption : 3 - 5 m<sup>3</sup>/ year

(8) other: \* people sell their product by themselves.

# ***Attachment-F.2***

***Interview Survey for Forest Reclamation***

## Interview Survey for Forest Reclamation

### 1. Interviewee: Mr. Vilantrophy Taroreh (Tumaratas village)

Tumaratas, Ampreng, Toure are the villages that closed to the Mt.Soputan protected forest. Most people from Ampreng occupy the forestland. They plant maize, tomato, and onion. They plant the forestland because of no more available land in cultivation area. Most of the people ( $\pm 80\%$ ) are poor people. They do not have enough money for buying land that will be cultivated. Cultivation in forest area is the last alternative for farmer in maintaining their daily life.

Mr. Taroreh proposes some acceptable activities that can be applied in this area. He mentioned that most people who are living in the area has great concern for maintaining the forest because people realize that forest has a main function as water supply for their daily needs. That is why he proposes land rehabilitation program such as reforestation, planting tree crops (esp. Avocado) and other activities that absorb as much as possible manpower should be carried out in the area. He proposes other activities that involving farmer such as Bamboo forest and honey' bee cultivation. It could be accepted by farmers because bamboo is planted and distributed in large area. Apiculture is also acceptable because about 25 % (estimation of the interviewee) out of the whole households used to getting wild honey bee from the forest. He mentioned also about the lack of supervision by forestry office that cause illegal cutting still going on.

### 2. Interviewee: Mrs. Joseph Dengah (wife of chief of Airmadidi Atas Village) and Mr. Jotje Suak (chief of farmer group)

There are about 30 households from Airmadidi atas village occupying the Mt. Klabat protection forest. They live in the forest and do some activities. They are planting maize and chili. Besides planting, they are also making brown sugar, and alcohol from Arenga's sap. Firewood for making brown sugar and alcohol is obtained from the forest.

Ordinary village people obtain firewood for domestic use from garden near the village. Most people use coconut's shell for firewood.

Illegal cutting in the forest is still going on. People are taking timber from the forest for constructing house. Illegal cutting is difficult to be controlled by government on the village level. Controlling by forestry office should be improved.

Some people intend to protect the forest from disturbing activity but there are some problems. They need land to be planted for producing food crops. According to Mrs. Dengah and Mr. Suak, it needs to plant coconuts, fruit trees, and arenga in order to reduce soil erosion

3. Interviewee: Makalonsow's farmer (anonymity)

- Intensive illegal cutting in the protected forest (it takes about two hours by oxen cart) is going on (Location: Mt. Lembean)
- Poor farmers become workers for wealthy men, because the poor want to make money immediately.
- Land become infertile after several years of planting maize, then farmer move to fertile land. Land fallow should be for 4 – 6 years.
- Lack of supervision by forestry office.

## ***Attachment-F.3***

***Informal Meeting with Encroached Farmers***

## **Informal Meeting with Encroached Farmers**

**Date:** 18:00~20:30, 11<sup>th</sup> January, 2001

**Place:** Village Office of Ampreng

**Participants:** 35 villagers of Ampreng listed below

### **1. Proceedings**

- 1) After an opening speech by village head Mr. Herni Aruperes, JICA Study Team explained the purpose of the study on Tondano Watershed.
- 2) JICA Study Team then explained the present condition of encroached area of Soputan Protection Forest using an aerial photograph and a drawing. A consensus was formed among all participants and the study team on points listed below.
  - About 30 ha of encroachment by about 40 farmers.
  - Socio-economic condition of the encroachers is surveyed by JICA Study Team.
  - This illegal condition had better been solved.
- 3) A Proposal of JICA Study Team about participatory afforestation plan in the encroached area was explained by using drawings of reforestation image.
- 4) After the explanation, questions and comments were made by participants. Main comments and questions are as following.

### **2. Questions and Comments**

- 1) Comment: It is very agreeable for whole proposal of JICA Study Team, because this program give benefit not only for government but also for them (cultivators in protection forest) and for next generation.
- 2) Comment: It is asked that Forestry Office works together with village government to guarantee the security of the participants of the program, because illegal logger often threaten farmers. On the contrary the participants of the program can act as forest guards against illegal logging.
- 3) Comment: A nursery of this program had better be located near planting sites. If the nursery is established at lower site, it might affect vitality of seedlings because of the differences of soil and climate.
- 4) Comment: The farmer's group for the program should consist only of the encroached farmers. If the members of farmer's group are from cultivators in the protection forest, they must have a motivation for maintenance. The members of the group can participate as a labor in nursery works.
- 5) Comment: It is better planting big trees and fruits trees such as mango, durian, and candle nut (*kemiri*).
- 6) Comment: It is better introducing coffee for planting in the project site. According to their

experience coffee product is good in the area.

- 7) Question: Who has a right for harvesting the produce of planted trees (such as fruits) in a project site if participants plant the trees? (Response from JICA Study Team: It is decided within an actual agreement in an implementing stage, but it is thought that those harvests belong to the participants of the project in general.)
- 8) Question: How many farmer's group will be established in the program? (Response from JICA Study Team: It is not fixed in the proposal. It will be decided through an actual implementation stage.)

### 3. List of Participants

#### A. Encroached Farmers

- |                       |                       |
|-----------------------|-----------------------|
| 1. Afni Sarayar       | 13. Hein Kaat         |
| 2. Altje Kaat         | 14. Youdi Manampiring |
| 3. Dolvi Manampiring  | 15. Jefri Goni        |
| 4. Paning             | 16. Rince Goni        |
| 5. Herbi Aruperes     | 17. Deice Kaat        |
| 6. Deiske Manampiring | 18. Yunife Kapantow   |
| 7. Yulien Borang      | 19. Refin Woon        |
| 8. Decky Sarayar      | 20. Ralmito           |
| 9. Berti Manampiring  | 21. Yunaidi           |
| 10. Meiske Woran      | 22. Fiandi Koyongian  |
| 11. Herbi Manampiring | 23. Yanto Manampiring |
| 12. Meike Goni        | 24. Adoi Kaat         |

#### B. Other Villagers

- |                     |   |
|---------------------|---|
| 1. Herni Aruperes   | (Head of village)   |
| 2. Mintje Kojongian | (Head of Women Movement / wife of head of village)                |
| 3. Yoris Palar      | (Board of village representative / <i>Badan Perwakilan Desa</i> ) |
| 4. Deni Palar       | (Staff of village government <i>Perangkat Desa</i> )              |
| 5. Rudi Tumiwa      | (Staff of village government / <i>Perangkat Desa</i> )            |
| 6. Marlef Kapantow  | (Staff of village government / <i>Perangkat Desa</i> )            |
| 7. Stefi Koyongian  | (Staff of village government / <i>Perangkat Desa</i> )            |
| 8. Jokry Woon       | (Staff of village government / <i>Perangkat Desa</i> )            |
| 9. Wisye Aruperes   | (Staff of village government / <i>Perangkat Desa</i> )            |
| 10. Masri Aruperes  | (Women Movement Cadres / <i>Kader PPK</i> )                       |
| 11. Leni Lumenta    | (Women Movement Cadres / <i>Kader PPK</i> )                       |