ITTO PD 386/05 Rev.1 (F)

TECHNOLOGICAL DEVELOPMENT FOR THE PRODUCTION OF PLANTING MATERIALS TO SUPPORT SUSTAINABLE PLANTATION OF BALI INDIGENOUS SPECIES THROUGH COMMUNITY PARTICIPATION

REPORTING ACTIVITY 6.2 ESTABLISHMENT AND MEASUREMENT OF PERMANENT SAMPLE PLOTS

PREPARED BY:
PROJECT EXECUTING TEAM

BALI PROVINCIAL FORESTRY SERVICE
REGIONAL TREE SEED CENTER FOR BALI AND NUSA TENGGARA
INTERNATIONAL TROPICAL TIMBER ORGANIZATION

2009

Reporting
Activity 6.2. Establishment and measurement of permanent sample plots

Project Executing Team ITTO PD 386/05 Rev.1(F)

Bali Provincial Forestry Service and
Regional Tree Seed Center for Bali and Nusa Tenggara and
International Tropical Timber Organization
2009

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SUMMARY

Amount of 9 of 20 candidate sample plots was determined to be first-priority as sample plot comprising KT Tunas Mekar (Tabanan); SA Palawerdi; SA Giri Sari (Jembrana); SA Santhi Pala (Jembrana); KT Wana Tri Sad (Jembrana); KT Giri Wana Lestari (Buleleng); KT Purwanadi (Bangli); KT Gunung Agung (Karangasem); and KT Hutan Rakyat Serbaguna (Karangasem).

Amount of 8 of 20 candidate sample plots was determined to be second-priority as sample plot consisting KT Padang Ombo (Tabanan); KT Palasari (Tabanan); KT Banu Amertha (Jembrana); Pengempon Pura Rambut Siwi (Jembrana); SA Bina Karya (Jembrana); SA Kerta Yasa (Bangli); KT Palasari (Karangasem); and KT Darma Sentana (Klungkung)

Amount of 3 of 20 candidate sample plots was determined to be third-priority as sample plot consist of KT Suung Maisi (Buleleng); KT Rimba Lestari (Bangli); and KT Suka Mekar (Karangasem).

District of Jembrana had the biggest number of KT and SA to be determined as first-priority of sample plot.

1. INTRODUCTION

1.1. BACKGROUND

Establishment and measurement of permanent sample plot activity is a part of **ITTO project PD 386/05 Rev. 1 (F) "Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation"**. First step of the activity started by distributing potential indigenous species seedling to community in Bali. In 2008, this activity will be continued through the establishment and measurement of permanent sample plots to determine representative plantation to be maintained as sample plot. The following report is prepared as technical report focusing on: 1) valuation of candidate sample plot, 2) criterion and determination of sample plot, 3) sample plot documentation, 4) sample plot maintenance, 5) sample plot data analysis.

1.2. MATERIALS AND METHOD

1.2.1. Materials

Establishment and measurement of permanent sample plots is a part of subsequent activities after distributing the potential indigenous species seedling to the community in Bali. The seedling was planted as enrichment planting among the previous existing trees or crops. Therefore, in one sample plot may contains varies spacing of trees or crops species. The distributed seedling consisted of 6 (six) species: panggal buaya (*Fagara rhetsa*), majegau (*Dysoxylum densiflorum*), putat (*Planchonia valida*), pulai (*Alstonia scholaris*), bentawas (*Wrightia pubescens*), and sawo kecik (*Manilkara kauki*).

1.2.2. Method

The success of plantation establishment will be influenced by some factors, such as:

1. knowledge of field biophysics conditions;
2. knowledge of species matching, both with the site and the end-product;
3. supply of improved seed, both physically and genetically;
4. silviculture techniques, from nursery up to stand management;
5. skill and effort to well manage the plantation.

Considering factors mentioned above, thus the establishment and measurement of permanent sample plots activity should be well prepared involving of: 1) valuation of candidate sample plot, 2) criterion and determination of sample plot, 3) sample plot documentation, 4) sample plot maintenance, 5) sample plot data analysis.

In accordance to the steps stated above, the scope of surveying based on consultancy with national expert, Dr. Arif Nirsatmanto, cover some topics as follows :

a. Valuation technique to determine the representative sample plot
b. Criterion and determination of selected sample plot

Selected sample plot will be determined based on the results of valuation using same criterion as presented in Table 01.

Table 01. Criterion, weight, score, grade and rank priority for determining of representative sample plot

Criterion	**Weight (%)**	**Score** (1: poor; 2: middle; 3: good)				**Grade** (value/ Total weight)	**Priority** (highest grade as highest priority)
		1	2	3	value (score x weight)		
1. Planning (work plan of 'kelompok tani')	10						
2.Institution (formulation and administration of 'kelompok tani)	20						
3. Implementation (meeting, field activities and self funding of 'kelompok tani')	60						
4. Controlling (progress reporting)	10						
TOTAL	100						
PRIORITY	-	-	-	-	-	-	

c. Maintenance of sample plot

The maintenance involves:

- weeding,
- fertilizer,
- re-planting (if possible),
- preventing of pest and disease,
- preventing of fire,
- thinning (if necessary),
- maintenance of sample plot boundary,
- others.

d. Sample plot data analysis

Due to the location of planting by farmers spreading in different location, measurement just conducted for tree height.

e. Sample plot documentation

Sample plot documentation consists of:

- administrative location (RPH/BKPH/kecamatan/kabupaten),
- geographic location (LS-LU,BT-BB, elevation),
- name and member of 'kelompok tani',
- area, sample plot and measurement plot,
- target species, year of planting, relative spacing,
- silviculture treatment,
- biophysics data,
- others.

2. MAIN TEXT

2.1 Valuation of candidate sample plot

Some considerations for selecting representative sample plot are as follows:

- accessibility,
- soil fertilizer,
- site topography,
- water supply,
- security,
- soil and climate,
- knowledge of species matching to site condition and planting system,
- size area,
- land status,
- region representative (sub-district and or district).

The planting will be handled and managed by 'kelompok tani' (farmer group), thus, visits frequency of the farmers to the field should be paid attention in order to ensure the success of planting program.

Sample plot valuation has been done in 6 (six) 'kabupaten' (District) consisting of 20 'Kelompok Tani' (KT) and 'Subak Abian' (SA). In general, all of KT and SA are located in site with good accessibility as reported in Table 02.

Table 02. List of valuated candidate sample plot

No.	Kelompok Tani / Subak Abian	District	Remarks	
1	KT Padang Ombo	Tabanan	Accessibility Soil fertilizer Topography Security Land status	: middle : good : poor : good : good
2	KT Tunas Mekar	Tabanan	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
3	SA Palasari	Tabanan	Accessibility Soil fertilizer	: good : good

No.	Kelompok Tani / Subak Abian	District	Remarks	
			Topography Security Land status	: good : good : good
4	KT Banu Amertha	Jembrana	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
5	Pengempon Pura Rambut Siwi	Jembrana	Accessibility Soil fertilizer Topography Security Land status	: good : middle : good : good : good
6	SA Palawerdi	Jembrana	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
7	SA Bina Karya	Jembrana	Accessibility Soil fertilizer Topography Security Land status	: good : middle : good : good : good
8	SA Giri Sari	Jembrana	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
9	SA Santhi Pala	Jembrana	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
10	KT Wana Trisad	Jembrana	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : middle : good
11	KT Giri Wana Lestari	Buleleng	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
12	KT Suwung Maesi	Buleleng	Accessibility Soil fertilizer Topography Security	: good : poor : middle : good

No.	Kelompok Tani / Subak Abian	District	Remarks	
			Land status	: good
13	SA Kerta Yasa	Bangli	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
14	KT Rimba Lestari	Bangli	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
15	KT Purwanadi	Bangli	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good
16	KT Gunung Agung	Karangasem	Accessibility Soil fertilizer Topography Security Land status	: good : middle : good : good : good
17	KT Pulasari	Karangasem	Accessibility Soil fertilizer Topography Security Land status	: middle : middle : middle : good : middle
18	KT Hutan Rakyat Serbaguna	Karangasem	Accessibility Soil fertilizer Topography Security Land status	: good : middle : middle : good : good
19	SA Suka Mekar	Karangasem	Accessibility Soil fertilizer Topography Security Land status	: good : middle : middle : good : good
20	KT Darma Sentana	Klungkung	Accessibility Soil fertilizer Topography Security Land status	: good : good : good : good : good

2.2. Results of valuation of candidate sample plot

Recapitulation of the results of sample plot valuation is presented in Table 03.

Table 03. RECAPITULATION OF THE RESULT OF SAMPLE PLOT VALUATION

DISTRICT OF TABANAN

No.	KELOMPOK TANI (KT) / SUBAK ABIAN (SA) LOCATION	CORESPONDENT	SPECIES	YEAR OF PLANTING	HIGH	RESULT							
1	KT Padang Ombo Village : Batunya Sub District. Baturiti District Tabanan	1. Muna 2. Raris	1. Panggal buaya 2. Bentawas	2008 2007	30-78 40-50	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20		2		40	0,4	
						3. Implementation	60		2		120	1,2	
						4. Controlling	10	1			10	0,1	
						Total	100	-	-	-	190	1,9	
						PRIORITY	-	-	-	-	-	-	**2**
	Notes : - survival rate low - some of *F.rhetsa* attacked by caterpillar - planting on slopping land - crops : serai, ginger, cassava, coffee, vegetables												
	Recommendation : - more intensif in maintenance - eliminating of caterpilar												

2	KT Tunas Mekar Village: Serampingan Sub District : Selemadeg District: Tabanan	1. Kantor Desa Serampingan 2. Pura Dalem Serampingan	1. Panggal buaya 2. Panggal buaya	2007 2007	60-220 40-50	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20		2		40	0,4	
						3. Implementation	60			3	180	1,8	
						4. Controlling	10			3	30	0,3	
						Total	100	-	-	-	270	2,7	
						PRIORITY	-	-	-	-	-	-	**1**
	Notes : - Some of *M.kauki* seedlings were not planting yet - *F.rhetsa* is growing well - Other species : coconut **Recommendation :** - intensive maintenance (hoeing, fertilizer) - protection from cows												
3	SA Palasari Sub-village: Selemadeg Kaja Village :Selemadeg Sub-District: Selemadeg District: Tabanan	1. Ketut Muliarta 2. Nengah Gendra	1. Panggal buaya	2008	35-80	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20		2		40	0,4	
						3. Implementation	60		2		120	1,2	
						4. Controlling	10		2		20	0,2	
						Total	100	-	-	-	200	2,0	
						PRIORITY	-	-	-	-	-	-	**2**
	Notes : - Most of seedlings are planting as border line - other species : cocoa - Farmers don't really like *P.valida* since need long time for harvesting and disturbing the other species as crops												

	Recommendation: - intensive maintenance (fertilizer, weeding)		

DISTRICT OF JEMBRANA

No.	KELOMPOK TANI (KT) / SUBAK ABIAN (SA) LOCATION	CORESPONDENT	SPECIES	YEAR OF PLANTING	HIGH	RESULT
1	KT Banu Amertha Br. Bangli Village : Yeh Embang Kangin Sub-District: Mendoyo District : Jembrana	1. Turus Jalan 2. Made Raun 3. P Mersen	1. Sawokecik 2. Panggal buaya 3. Panggal buaya	2007 2007 2007	35-145 40-165 40-165	

Criterion	Weight (%)	Score (1: poor; 2: middle; 3: good)				Grade	Priority
1. Planning	10		2		20	0,2	
2. Institution	20		2		40	0,4	
3. Implementation	60		2		120	1,2	
4. Controlling	10	1			10	0,1	
Total	100	-	-	-	190	1,9	
PRIORITY	-	-	-	-	-	-	**2**

Notes :
- Most of *M. kauki* planted at edge of road
- some of *F.rhetsa* planted as border line
- the plant are growing well
- monitoring is needed since the plant planted at inside of road

Recommendation :
- intensive maintenance (fertilizer)

2	Pengempon Pura Rambut Siwi Village : Yeh Embang Kangin Sub-District : Mendoyo District : Jembrana	1. Halaman Pura Rambut Siwi	1. Sawokecik 2. Panggal buaya	2007 2007	75-180 300	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10	1			10	0,1	
						2. Institution	20		2		40	0,4	
						3. Implementation	60		2		120	1,2	
						4. Controlling	10	1			10	0,1	
						Total	100	-	-	-	180	1,8	
						PRIORITY	-	-	-	-	-	-	**2**
	Notes : - Most of *M.kauki* planted at edge of road - some of F.rhetsa are growing well at inside of temple **Recommendation :** - intensive maintenance (fertilizer) on *M.kauki* especially												
3	SA Pala Werdi Br. Rangdu Village : Poh Santen Sub-District: Mendoyo District : Jembrana	1. Ketut Diana	1. Sawokecik 2. Panggal buaya 3. Bentawas	2007 2007 2007	63 222 130	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10			3	30	0,3	
						2. Institution	20			3	60	0,6	
						3. Implementation	60			3	180	1,8	
						4. Controlling	10			3	30	0,3	
						Total	100	-	-	-	300	3,0	
						Priority	-	-	-	-	-	-	**1**
	Notes : - *F.rhetsa* was growing very well - other crops : cacao - *M.kauki* planted at edge of road - Farmers don't really like *P.valida*												

	Recommendation : - intensive maintenance (weeding, fertilizer, hoeing)															
4	SA Bina Karya Br. Sombang Village : Tukadaya Sub-District : Melaya District : Jembrana	1. Ketut Leneng 2. Lanus	1. Sawokecik 2. Panggal buaya	2008 2008	40 95	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)					**Grade**	**Priority**		
						1. Planning	10		2		20		0,2			
						2. Institution	20		2		40		0,4			
						3. Implementation	60		2		120		1,2			
						4. Controlling	10	1			10		0,1			
						Total	100	-	-	-	190		1,9			
						PRIORITY	-	-	-	-	-		-	**2**		
	Notes : - survival rate was low - planting design is not manage well															
	Recommendation : - intensive maintenance (fertilizer, weeding)															
5	SA Giri Sari Br. Sari Kuning Village : Tukadaya Sub-District : Melaya District : Jembrana	1. Putu Sujana 2. Ketut Yasa	1. Sawokecik 2. Panggal buaya 3. Majegau	2008 2007/08 2008	13 180 25	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)					**Grade**	**Priority**		
						1. Planning	10		2		20		0,2			
						2. Institution	20		2		40		0,4			
						3. Implementation	60			3	180		1,8			
						4. Controlling	10		2		20		0,2			
						Total	100	-	-	-	260		2,6			
						PRIORITY	-	-	-	-	-		-	**1**		

	Notes : - The plants are growing well in general														
	Recommendation : - intensive maintenance (fertilizer)														
6	SA Santhi Pala Br. Pangkung Jajang Village : Tukadaya Sub-District : Melaya District : Jembrana	1. Ketut Ardana 2. Putu Kartika	1. Panggal buaya 2. Pulai 3. Bentawas 4. Sawokecik	2008 2008 2008 2008	70 100 30 30	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**	
						1. Planning	10		2		20	0,2		
						2. Institution	20		2		40	04		
						3. Implementation	60			3	180	1,8		
						4. Controlling	10		2		20	0,2		
						Total	100	-	-	-	260	2,6		
						PRIORITY	-	-	-	-	-	-	**1**	
	Notes : - The plants planted at land conversion of cacao - The plants are growing good enough - other species : albezia, mahagony, coconut														
	Recommendation : - intensive maintenance (fertilizer)														

DISTRICT OF JEMBRANA

No.	KELOMPOK TANI (KT) / SUBAK ABIAN (SA) LOCATION	CORESPONDENT	SPECIES	YEAR OF PLANTING	HIGH	RESULT
7	KT Wana trisad Br. Adnyasari Village : Ekasari Sub-District : Melaya District : Jembrana	1. Suanda 2. Sukeni 3. Wayan pangkur	1. Panggal buaya 2. Majegau	2007 2007	165-400 125-350	

Criterion	Weight (%)	Score (1: poor; 2: middle; 3: good)				Grade	Priority
1. Planning	10			3	30	0,3	
2. Institution	20			3	60	0,6	
3. Implementation	60			3	180	1,8	
4. Controlling	10			3	30	0,3	
Total	100	-	-	-	300	3,0	
PRIORITY	-	-	-	-	-	-	**1**

Notes:
- The plants were growing well in general
- protection from insect have been conducted well

Recommendation :
- intensive maintenance (fertilizer, weeding)

DISTRICT OF BULELENG

No.	KELOMPOK TANI (KT) / SUBAK ABIAN (SA) LOCATION	CORESPONDENT	SPECIES	YEAR OF PLANTING	HIGH	RESULT							
1	KT Giri Wana Lestari Br. Munduk Musi Village : Musi Sub-District : Gerokgak District : Buleleng	1. Made Latra 2. Nyoman Nartha	1. Panggal buaya 2. Majegau	2007 2007	100-350 60-200	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20			3	60	0,6	
						3. Implementation	60			3	180	1,8	
						4. Controlling	10		2		20	0,2	
						Total	100	-	-	-	280	2,8	
						PRIORITY	-	-	-	-	-	-	**1**
	Notes : - The plants were growing well - Other species : teak, mango, rambutan, banana - They don't really like *M.kauki*												
	Recommendation : - intensive maintenance (fertilizer, weeding, hoeing)												
2	KT Suwung Maesi Dusun Kanginan Village : Julah Sub-District : Tejakula District : Buleleng	1. Ketut Sarinte 2. P Putra	1. Panggal buaya	2007	50-75	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20		2		40	0,4	
						3. Implementation	60	1			60	0,6	
						4. Controlling	10	1			10	0,1	
						Total	100	-	-	-	130	1,3	
						PRIORITY	-	-	-	-	-	-	**3**

	Notes : - site of plantation are stony - planting design is not manage well and the spacing is to close - The plants are not maintaining well **Recommendation :** - intensive maintenance (fertilizer, weeding, hoeing)		

DISTRICT OF BANGLI

No.	KELOMPOK TANI (KT) / SUBAK ABIAN (SA) LOCATION	CORESPONDENT	SPECIES	YEAR OF PLANTING	HIGH	RESULT
1	SA Kerta Yasa Br. Kembangsari Village : Satra Sub-District: Kintamani District : Bangli	1. Mangku Merdana 2. Mertha	1. Panggal buaya 2. Sawokecik 3. Pulai 4. Majegau	2007 2007 2007 2007	50-75 40 40 45	

Criterion	Weight (%)	Score (1: poor; 2: middle; 3: good)				Grade	Priority
1. Planning	10		2		20	0,2	
2. Institution	20			3	60	0,6	
3. Implementation	60		2		120	1,8	
4. Controlling	10		2		20	0,2	
Total	100				220	2,2	
PRIORITY	-	-	-	-	-	-	**2**

	Notes : - The plants were growing well enough - Other species : orange, lamtoro, chilli, coffee		

	Recommendation : - intensive maintenance (fertilizer)												
2	KT Rimba Lestari Br. Delod Umah Village: Pengotan Sub-District: Bangli District: Bangli	1. Nyarka	1. Panggal buaya 2. Bentawas 3. Sawokecik	2008 2008 2008	25 35 30	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20			3	60	0,6	
						3. Implementation	60	1			60	0,6	
						4. Controlling	10	1			10	0,1	
						Total	100	-	-	-	150	1,5	
						PRIORITY	-	-	-	-	-	-	**3**
	Notes : - survival rate was low - other species : albizia, kajimas, corn - W.pubescens is not suitable to plant in this area												
	Recommendation : - intensive maintenance												

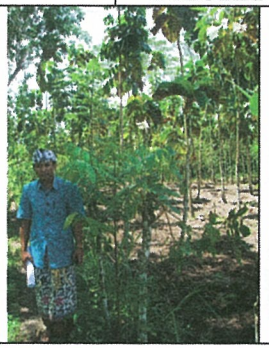
DISTRICT OF BANGLI

No.	KELOMPOK TANI (KT) / SUBAK ABIAN (SA) LOCATION	CORESPONDENT	SPECIES	YEAR OF PLANTING	HIGH	RESULT
3	KT Purwanadi Br. Tingas Village : Yangapi Sub-District : Tembuku District : Bangli	1. Sudiarsa 2. Ketut Dharma	1. Panggal buaya 2. Majegau 3. Putat 4. Sawokecik 5. Bentawas	2007 2007 2007 2007 2007	145-230 35-185 35-120 60 50	

Criterion	Weight (%)	Score (1: poor; 2: middle; 3: good)				Grade	Priority
1. Planning	10		2		20	0,2	
2. Institution	20			3	60	0,6	
3. Implementation	60			3	180	1,8	
4. Controlling	10		2		20	0,2	
Total	100	-	-	-	280	2,8	
PRIORITY	-	-	-	-	-	-	**1**

Notes :
- The plants were growing well in general
- other species : teak, cacao, coffee
- M.kauki is not suitable to plant in this area
- have potention to attack by caterpilar

Recommendation :
- intensive maintenance (fertilizer, weeding, shading, eliminated caterpilars)



DISTRICT OF KARANGASEM

No.	KELOMPOK TANI (KT) / SUBAK ABIAN (SA) LOCATION	CORESPONDENT	SPECIES	YEAR OF PLANTING	HIGH	RESULT							
1	KT Gunung Agung Br. Karangsari Village : Sukadana Sub-District : Kubu District : Karangasem	1. Suparsa	1. Panggal buaya 2. Sawokecik	2007 2007	100-500 70	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20			3	60	0,6	
						3. Implementation	60			3	180	1,8	
						4. Controlling	10		2		20	0,3	
						Total	100	-	-	-	280	2,8	
						PRIORITY	-	-	-	-	-	-	**1**
	Notes : - The plants were growing good - other species : teak **Recommendation :** - intensive maintenance (fertilizer. watering)												
2	KT Pulasari Br. Muntig Village : Tulamben Sub-District : Kubu District : Karangasem	1. Teleman 2. Ketut Nandi 3. Dana	1. Panggal buaya 2. Sawokecik	2007 2007	80-230 30	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20			3	60	0,6	
						3. Implementation	60		2		120	1,2	
						4. Controlling	10		2		20	0,2	
						Total	100	-	-	-	220	2,2	

						PRIORITY	-	-	-	-	-	-	2

Notes :
- some of F.rhetsa were growing well in riverbank
- other species : guava, cashewnut, cotton plant

Recommendation :
- intensive maintenance (fertilizer, hoeing)
- controlling and protecting the plants that planted at riverbank

						Criterion	Weight (%)	Score (1: poor; 2: middle; 3: good)				Grade	Priority
3	KT Hutan Rakyat Serbaguna Br. Bukit Tabuhan Village : Bukit Sub-District : Karangasem District : Karangasem	1. Sarilam	1. Panggal buaya 2. Majegau	2007 2007	50-100 60	1. Planning	10		2		20	0,2	
						2. Institution	20			3	60	0,6	
						3. Implementation	60			3	180	1,8	
						4. Controlling	10		2		20	0,2	
						Total	100	-	-	-	280	2,8	
						PRIORITY	-	-	-	-	-	-	1

Notes :
- The trees were growing well
- some of the trees planted at edge of road

Recommendation :
- intensive maintenance (fertilizer)

4	SA Suka Mekar Br. Peninggaran Village : Seraya Sub-District : Karangasem District : Karangasem	1. Ketut Darpi	1. Sawokecik	2008	15	**Criterion**	**Weight** (%)	**Score** (1: poor; 2: middle; 3: good)				**Grade**	**Priority**
						1. Planning	10		2		20	0,2	
						2. Institution	20			3	60	0,6	
						3. Implementation	60	1			60	0,6	
						4. Controlling	10	1			10	0,1	
						Total	100	-	-	-	150	1,5	
						PRIORITY	-	-	-	-	-	-	**3**
	Notes : - survival rate was low												
	Recommendation : - intensive maintenance - need additional seedlings												

DISTRICT OF KLUNGKUNG

No.	KELOMPOK TANI (KT) / SUBAK ABIAN (SA) LOCATION	CORESPONDENT	SPECIES	YEAR OF PLANTING	HIGH
1	KT Darma Sentana Br. Kanginan Village : Besan Sub-District : Dawan District : Klungkung	1. Surata 2. Nyoman Suyadnya 3. Mastra 4. Wayan Candri	1. Panggal buaya 2. Sawokecik 2. Bentawas	2007 2007 2007	45-75 45-100 75

RESULT							
Criterion	Weight (%)	Score (1: poor; 2: middle; 3: good)				Grade	Priority
1. Planning	10		2		20	0,2	
2. Institution	20			3	60	0,6	
3. Implementation	60		2		120	1,2	
4. Controlling	10		2		20	0,2	
Total	100	-	-	-	220	2,2	
PRIORITY	-	-	-	-	-	-	**2**

Notes :
- The trees were growing well enough

Recommendation :
- intensive maintenance (fertilizer)

Recapitulation of sample plot priority based on district is presented in Table 04.

Table 04. Recapitulation of sample plot priority for each district

No.	District	Number of location	Number of location based on priority			Remarks
			1	2	3	
1	Tabanan	3	1	2	-	
2	Jembrana	7	4	3	-	
3	Buleleng	2	1	-	1	
4	Bangli	3	1	1	1	
5	Karangasem	4	2	1	1	
6	Klungkung	1	-	1	-	
	TOTAL	**20**	**9**	**8**	**3**	

In the total of 20 valuated locations, it consists of 9 (nine) locations categorized as first-priority (1) of sample plot, 8 (eight) locations categorized as second-priority (2) and 3 (three) locations as third-priority (3). District of Jembrana has biggest total number of first-priority sample plots.

2.3. Maintenance of sample plot

Based on field conditions, main factors should be paid attention for sample plot maintenance are weeding, fertilizer, and pest and disease. Replanting could be practiced, and some of KT and SA need additional seedling distribution, especially for *F. rhetsa*. During the valuation was also found that some KT and SA have changed their interest to plant certain species.

2.4. Sample plot data analysis

Almost all of tree planting are managed with diverse location conditions and planting system. Therefore, in case of assessment it is collected data using simple method just for individually measurement of tree height. It also inventor the abundance of mixture trees or crops. In order to assess the trend of tree growth, measurement would be repeated for some years in the same measurement plots.

2.5. Sample plot documentation

In order to be easier monitoring and evaluation of sample plot, database of sample plot would be composed. The database contains some data and information's related to the sample plot establishment, such as:

- Administrative location (RPH/BKPH/Sub-District/District),
- Geographic location (LS-LU,BT-BB, elevation),
- Indicative and situation map,
- name and members of 'kelompok tani',
- total number of targeted species, year of planting and relative spacing,
- silviculture treatment,
- biophysics.

3. CLOSING

Amount of 20 'Kelompok Tani' (KT) and 'Subak Abian' (SA) in 6 District across Bali, has been valuated as candidate of sample plot.

The valuation was done by considering some criterions involving planning, capacity building, implementing, and controlling.

The results of valuation has classified KT and SA into three classes priority to be selected as sample plot, that is, first-priority (1), followed by second and third-priority.

Amount of 9 of 20 candidate sample plots was determined to be first-priority as sample plot, followed by 8 KT/ SA as second-priority and 3 KT / SA as third-priority.

District of Jembrana had the biggest number of KT and SA to be determined as first-priority of sample plot.