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## Annexes

### Annex 1. Baseline Study Guidelines

#### a. The village level activities

Methods	Objective	Detail methods	Output
Transect walks (day1)	Identify the biophysical characteristic of the village	1-2 km from the center of the village. Documented its GPS points if there is any changes in its biophysical characteristic (like, top of the hill, valley, river, forest-non forest border, sawah-homegarden border)	Trees and landuse systems/landcover occur at village level based on its biophysical characteristic. Sketch map on type of tree products commonly harvested per specific area in the village.
Focus Group Discussion (day2)	<ul style="list-style-type: none"> <li>▪ Verify findings that observed from transect walks.</li> <li>▪ Collecting information on trees and landuse systems from local livelihood perspectives.</li> </ul>	<p>Main questions for the FGD (defined the information into condition before and after the MRP):</p> <ol style="list-style-type: none"> <li>1. What are landuse systems that contribute to the local livelihood? And where are they located?</li> <li>2. What are the tree-based landuse farms? And where are they located? And what type of landuse management applied?</li> <li>3. What are the tree species that contribute to the local livelihood? (list at least 10 tree species) (are they planted or grow naturally? what are the products? Are they for sale of home use?</li> <li>4. Are they any other tree species that is important to the villagers and still be maintained in the garden?, if yes, what species? where? and why?</li> <li>5. What tree species usually planted in your farm?               <ol style="list-style-type: none"> <li>(a) Why did you select that species?</li> <li>(b) Where did you get the planting material?</li> </ol> </li> </ol>	<ul style="list-style-type: none"> <li>▪ Trees and Landuse systems that contribute to the local livelihood</li> <li>▪ Products, uses and its productivity of the important trees that occur per landuse types.</li> <li>▪ Type of tree-based landuse management (maintenance, spacing, enrichment, cycle)</li> <li>▪ Constraints related to enhance the landscape productivity through tree planting efforts</li> <li>▪ Germplasm information (the availability of seeds, seedlings, nurseries and varieties)</li> </ul>

		<p>(c) Did it survive and grow well? If not why?</p> <p>6. Is there any tree planting program implemented in the village? If yes:</p> <p>(a) what tree species planted, where, when, why and who initiate the activities?</p> <p>(b) how many seedlings planted/species (or plan to be planted)?</p> <p>(c) from where the seedlings are?</p> <p>(d) was the program succeed? why?</p>	
Interview (day1-2)	Verify findings that obtained from the village level focus group discussion.	<p>Household interview to at least 5 persons per village</p> <p>1. What tree species have you planted in your farm?</p> <p>(a) Why did you select that species?</p> <p>(b) How many seedlings planted?</p> <p>(c) Where did you get the planting material?</p> <p>(d) Did it survive and grow well? If not why?</p> <p>2. Have you left indigenous trees on your farm? Why? And what species?</p> <p>3. Do you plan to plant more trees in your farm? For what purpose? What species do you prefer? And where would you like to plant your trees?</p> <p>4. What are the major constraints to plant trees in your farm based on your experience?</p>	<ul style="list-style-type: none"> <li>▪ Trees and Landuse systems that contribute to the local livelihood</li> <li>▪ Products (uses, productivity and its price) from the important trees that occur in farmer farm.</li> <li>▪ Type of tree-based landuse management (maintenance, enrichment, cycle)</li> <li>▪ Constraints related to enhance the landscape productivity through tree planting efforts.</li> </ul>

**b. The landscape level activities (sub district, district, province, KFCP landscape). Focus group discussion/interview/snowball method with key respondents per stakeholder groups**

Stakeholder groups	Level	Main Questions
Government agencies (Bappeda, Dinas Pertanian, Dinas Kehutanan, Dinas Transmigrasi)	District, Province	<ol style="list-style-type: none"> <li>Has your institution been conducted or planned any tree planting program in the area? If yes:               <ol style="list-style-type: none"> <li>what types of tree planting activity? who are the target? And how they (can) participate?</li> <li>what tree species planted, where, when, why and who initiate the activities?</li> <li>how many seedlings planted/species (or plan to be planted)?</li> <li>from where the seedlings are?</li> <li>was the program succeed? why?</li> </ol> </li> <li>Is there any support to link market with farmers? If yes, what and on what commodity?</li> </ol>
Conservation agencies (NGO)	Landscape	<ol style="list-style-type: none"> <li>What types of activity your organization been conducted in the area? (indicate by discipline, institution, on going activities particularly related with tree planting efforts)</li> <li>Has your institution been involved in any tree planting program in the area? If yes:               <ol style="list-style-type: none"> <li>what tree species planted, where, when, why and who initiate the activities?</li> <li>how many seedlings planted/species (or plan to be planted)?</li> <li>from where the seedlings are?</li> <li>was the program succeed? why?</li> </ol> </li> <li>Is there any support to link market with farmers? If yes what and on what commodity?</li> </ol>
Research organization (on commodity basis, like Rubber Research Institute) or universities	Landscape	<ol style="list-style-type: none"> <li>What types of research have been conducted in the area? (indicate by discipline, institution, on going activities particularly related with tree planting efforts)</li> <li>Has your institution been involved in any tree planting program in the area? If yes:               <ol style="list-style-type: none"> <li>what tree species planted, where, when, why and who initiate the activities?</li> <li>how many seedlings planted/species (or plan to be planted)?</li> <li>from where the seedlings are?</li> <li>was the program succeed? why?</li> </ol> </li> <li>Is there any support to link market with farmers? If yes what and on what commodity?</li> </ol>
Extension agencies and head of subdistrict	Sub district	<ol style="list-style-type: none"> <li>What type of extension activities conducted in the area? (indicate by discipline, technology being disseminated and location)</li> <li>Is there any tree planting program assisted by your institution in the area? If yes:               <ol style="list-style-type: none"> <li>what tree species planted, where, when, why and who initiate the activities?</li> </ol> </li> </ol>

- (b) how many seedlings planted/species (or plan to be planted)?
  - (c) from where the seedlings are?
  - (d) was the program succeed? why?
3. Is there any support to link market with farmers? If yes what and on what commodity?

**c. The market based information will be collected for at least 5 important tree products sold for cash, indicate its major marketing channel, form of marketed product and problems in marketing. The information will be collected via interview with farmers and traders.**



## Annex 2. Ten most important tree species in Block A villages of EMRP

Priority	Species	Latin names	Score	Product harvested	Planted (1) or naturally regeneration (2)	Location: pematang; luaw; tayap; bukit; shallow, moderate, or deep peatland	Availability of planting spacing? Yes or No	Type of maintenance; occurring in form of	Harvesting period	Constraints related to tree planting
<b>Mentangai Hulu</b>										
1	Karet	<i>Hevea brasiliensis</i>	10	latex, firewood	1	pematang, luaw, shallow-moderate peatland	yes	weeding	Start from 8 years, daily tapping	fire, flood, pest (termite), access to good planting material, capital
1	Kahui	<i>Shorea balangeran</i>	6	timber, fruit, bark (for medicine)	1; 2	moderate-deep peatland	no, yes (8x3m)	weeding 3 times a year	15 years	fire and capital
1	Galam	<i>Melaleuca cajuputi</i>	4	timber, fruit, and bark for roofing	2	luaw, moderate peatland	no	none, thinning at 1 year old	3-4 year	fire and capital
2	Rumbia/sagu	<i>Metroxylon sagu</i>	9	sagoo, leaf, fruit, "umbut", worm for fishing	1	all location	no	pruning while leaf harvesting once a year	leaf and umbut: 3 years; sago: 8-9 years old	nursery and planting technique, capital
2	Gemor	<i>Alseodaphne sp.</i>	6	bark, timber	2	moderate to deep peatland	no	none	>3 years	fire and capital

2	Mahang	<i>Macaranga sp.</i>	5	timber, bark for housing/dinding pondok	2 and 1	pematang, luaw, shallow-moderate peatland	no; yes (3x3m)	none	3 years	fire and capital
3	Rambutan	<i>Nephelium lappaceum</i>	7	Fruit	1	pematang	no	weeding 2 times a year	2-5 year	fire, worm, planting material, capital
3	Sengon	<i>Albazia falcata</i>	6	timber, (daun, buah?)	planted	pematang, shallow peatland	yes 3x3m	weeding 3 times a year	3 years for timber; 5 years for fruit. Growth rate 7cm of diameter per year.	fire, flood, and capital
3	Cempedak	<i>Artocarpus champeden</i>	5	Fruit	1	pematang	yes 5x5	weeding 2 times a year	>5 years	fire, flood, capital
3	Mangga asam	<i>Mangifera sp.</i>	2	Fruit, timber	1	pematang, shallow-moderate peatland	yes (5x5)	none	>10 year	fire, flood, capital
<b>Kalumpang</b>										
1	Karet	<i>Hevea brasiliensis</i>	14	latex, timber, firewood, seedling	1	pematang, shallow-moderate peatland	yes	slash and herbicide 1 time a year	>= 8 years, tapping everyday or 4 times a week	quality of planting material, planting technique, fire, termite
1	Mahang	<i>Macaranga sp.</i>	3	timber - sell for small logs	2	pematang, shallow-deep peatland	no	none	4-5 years	Fire
1	Galam	<i>Melaleuca cajuputi</i>	2	Timber	2	shallow-moderate peatland and	no	none	for housing: 2 years,, commercial: >5	Fire

						luaw			years	
1	Rumbia/sagu	<i>Metroxylon sagu</i>	1	sago, leaf, fruit, umbut, and branches for plaited mat	1	luaw and shallow-moderate peatland	yes 5x5 <i>depe</i> (around 8.5x8.5m)	pruning once a year, slashing once a year	umbut >=3 years; leaf and branches: 2 years; sago and fruit: 15 years old	nursery and planting technique
2	Cempedak	<i>Artocarpus champeden</i>	7	fruit includes fruit bark and seed, young fruit for vegetables	1	pamatang	yes 6x5m	slash and chemical weeding 1 time a year	fruiting in 7 years, once a year	quality of planting material
2	Sungkai	<i>Peronema canescens</i>	5	Timber	1; 2	pamatang	yes 3x5m	weeding 1x a year	After 7-10 years	long harvest period,
2	Sengon	<i>Albazia falcata</i>	5	Timber	planted	pamatang, shallow peatland	yes 2x3m	immature: weeding 2 times a year, mature: once a year	3-5 years	quality of planting material, nursery process, pest (deer)
2	Waru	<i>Hibiscus tiliaceus</i>	3	Timber	1	pamatang	yes 4x6m	weeding once a year	10 year (info from Pak Didik-local people who brings the seed)	long period to harvest, cepat tumbang -- akar??
3	Coffee	<i>Coffea sp.</i>	11	seed, young leaves for vegetables	1	pamatang	yes 2x3m, or no	slashing once a year	3-4 years, 3 times a year	not familiar, limited access to planting material
3	Durian	<i>Durio zibethinus</i>	9	fruit, timber	1	pamatang	yes 5x9m	slash one a year	10 years, every year harvesting	long periods of harvesting

Sei Ahas										
1	Karet	<i>Hevea brasiliensis</i>	6	latex, firewood	1	pamatang, luaw	yes 3x3, 4x5, 2x3m (in luaw)	Weeding once a year, intercrop with fruit trees especially old rubber agroforest. New planting usually without intercrop. In form of rubber agroforest	Start from 8 years, commonly >10 years. Tapping 4 times a week	fire, pest (pig and termite), capital
1	Kahui	<i>Shorea balangeran</i>	5	Timber	2	luaw, peatland	no	none; mixed with other trees in forest	Start from 5 years - untuk tiang pondok	fire and capital
1	Mahang	<i>Macaranga sp.</i>	4	Timber	2	pamatang, luaw	no	none, mixed with rubber	3 years	fire and capital
1	Sengon	<i>Albazia falcata</i>	3	Timber	planted	pamatang	yes 1x1, 2x2m	weeding 3 times a year at first year. Planting in form of "kebun sengon"	Start from 3 years	access to planting material, limited suitable land, fire, and capital
1	Rumbia/sagu	<i>Metroxylon sagu</i>	2	sagoo, leaf, "umbut"	1	luaw	no	0-2 year: weeding 3 times a year, also when harvesting. Lived mixed with rubber, usually in border area	leaf: 5 years; umbut: 2 years; stem: 10 years	pig pest, nursery technique
2	Meranti	<i>Shorea sp.</i>	6	Timber	2	luaw, peatland	no	none; mixed with other trees in forest	>10 years	fire and capital

2	Cempedak	<i>Artocarpus champeden</i>	6	fruit	1	pematang	no, planting in hiaten inside rubber garden	Age 0-2 year: weeding 3 times a year; mixed with rubber agroforest, usually in border area (higher position than other kebun area)	Start from 4 years, once a year	limited land, pest: ulat buah (worm)
2	Gemor	<i>Alseodaphne sp.</i>	5	Bark	2	luaw, peatland	no	none; mixed with other trees in forest	After 1 year from its' shoot	fire and capital
2	Kuini	<i>Mangifera odorata</i>	3	fruit, timber	1	pematang	no, planting in hiaten inside rubber garden	0-2 years old: weeding 3 times a year; live mixed with rubber in border area (higher area)	5 years, once a year	limited suitable land (higher land)
3	Rambutan	<i>Nephelium lappaceum</i>	20	Fruit	1	pematang, luaw, peatland	yes 5x6m	In luaw dan peatland used timbukan technique (bedengan persegi), plant in kebun rambutan or mixed with rubber (border area)	cangkokan 3 years, seedling 5 years: harvest 1x year	limited land, capital, expensive price of planting material, thief (seedling was stolen after planting)
<b>Katunjung</b>										
1	Karet	<i>Hevea brasiliensis</i>	10	latex, timber	1	pematang, petak rata, luaw, peatland	yes 5x5, 1.5x1.5, 5x5, 7x3m	weeding 2 times a year, intercrop with nanas, pisang,	10 years, Tapping 5 days a week	capital, termites, fire, flood,

								cempedak, rambai, etc		clone planting material (expensive)
1	Gemor	<i>Alseodaphne sp.</i>	4	Bark	2	peatland	no	none	anytime, after 2-3 year from its' shoot	no planting experience, not familiar with the planting technique
1	Rumbia/sagu	<i>Metroxylon sagu</i>	2	leaf, sagoo, fruit, "umbut"	1	all location	no	when harvesting, weeding and pruning	leaf and umbut: 2-3 tahun; sagoo and fruit 13 years	nursery and planting technique
1	Rambutan	<i>Nephelium lappaceum</i>	2	Fruit	1	pamatang	yes 4x5m	weeding once a year	cangkakan 5 years, seedling 12 years: harvest 1x a year	flood, fire, capital
1	Mangga asam	<i>Mangifera sp.</i>	2	Fruit	1	pamatang	no	weeding once a year	cangkakan 5 year, seedling 12 year; every year harvesting	fire, flood, capital, stem worm
2	Cempedak	<i>Artocarpus champeden</i>	10	Fruit	1	pamatang	no	weeding 1 time a year	fruiting in 7 years, once a year	fire, flood, capital
2	Durian	<i>Durio zibethinus</i>	6	Fruit	1	pamatang	no	weeding once a year	Grafting seed: 6 year, seedling 10 years; once a year harvesting	flood, fire, capital
2	Kahui	<i>Shorea balangeran</i>	4	Timber	1; 2	all location	no; yes 5x5m	none	Start 5 years	fire and capital
3	Jackfruit	<i>Artocarpus heterophyllus</i>	12	Fruit	1	pamatang	yes 4x5m; or no	weeding once a year	Start from 4 years, every years	fruit worm, flood, fire

3	Pinang	<i>Areca catechu</i>	8	fruit, mayang for adat ceremony	1	pamatang	no	weeding once a year; as border tree in garden	Start from 4 years, all month in every years	-
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### Annex 3. Ten important tree species for Block E villages of EMRP

Priority	Species		Score	Product harvested	Planted (1) or naturally regeneration (2)	Location: pematang; luaw; tayap; bukit; shallow, moderate, or deep peatland	Availability of planting spacing? Yes or No	Type of maintenance; occurring in form of	Harvesting period	Constraints related to tree planting
<b>Tumbang Muroi</b>										
1	Karet	<i>Hevea brasiliensis</i>	9	Latex	1	pematang, bukit	yes 3x4m, 2x5m	weeding 1 time a year, intercrop with mangga asam, ketapi; in form of rubber agroforest	8-10 years, tapping 5-6 times a week, maximum 3 months a year (related to flooding)	flood, termite, cultivation knowledge, capital, limited suitable land
1	Gemor	<i>Alseodaphne sp.</i>	4	Bark	2	peatland	No	none; mixed with other trees in forest	start from 5-6 years	never planting before, don't know the plating technique, and fire risk
1	Kahui	<i>Shorea balangeran</i>	3	timber, fruit for seedling	2	peatland, bukit, napu	No	none; mixed with other trees in forest	when D=25cm, 15-20 years old	no planting experience
1	Meranti	<i>Shorea sp.</i>	2	timber, bark for housing	2	bukit, peatland	No	none; mixed with other trees in forest	when D=25cm, 15-20 years old	no planting experience, perhaps fire risk
1	Rasak	<i>Cotylelobium</i>	2	Timber	2	pematang, bukit,	No	none; live in forest	while D=25cm,	never been



		<i>spp.</i>				peatland			15-20 years old	planting, perhaps: fire risk
2	Jelutung	<i>Dyera polyphylla i</i>	4	latex, timber	2	bukit, peatland	No	none, live in forest	start from 15-20 years, tapping one a week	never been planted, planting technique
2	Mangga asam	<i>Mangifera sp.</i>	9	Fruit	1	pamatang, bukit	No	weeding when fruiting, live in home garden or intercrop in rubber agroforest	start 6 year (seedling), 3-4 years (cangkok)	stem worm -> stem become broken and rotten
2	Cempedak	<i>Artocarpus champeden</i>	7	fruit includes fruit bark and seed	1	pamatang, bukit	No	weeding at harvest time; as sisipan in rubber agroforest	start from 6 years, once a year	stem worm -> stem become broken and rotten
3	Paken	<i>Durio kutejensis</i>	10	Fruit	1	bukit	No	none, if plant around settlement usually low intense weeding; mixed with rubber	start from 8-10 years, harvesting every year	no/less access to planting material
3	Durian	<i>Durio zibethinus</i>	10	Fruit	1	bukit	No	none, mixed with rubber	start from 15 years (seedling), every year harvesting	limited access to planting material
<b>Petak Puti</b>										
1	Karet	<i>Hevea brasiliensis</i>	10	Latex	1	pamatang, bukit	yes 4x4, 3x3, 4x5, 3x7m	weeding 4 times a year, fertilizer 2-3 times a year, mostly no fertilizer	8-12 years. Tapping 5 times a week	termites, low quality of planting material, fire, limited

										capital --> low maintenance
1	Durian	<i>Durio zibethinus</i>	6	fruit, timber, root	1	pamatang, bukit	Yes 10x10m; or no	weeding 4 times a year. Fertilizer 2-3 times a year, mostly no fertilizer	seedling: 18-20 years, cangkok: 5-8 years. once a year harvesting	expensive price of high quality planting material, capital
1	Rasak	<i>Cotylelobium spp.</i>	2	Timber	2	bukit, pamatang, luaw, napu	No	none	start from 15 years until 32 years	Fire
1	Muhur/bungur	<i>Lagerstroemia speciosa</i>	2	timber for boat and housing	2	tayap napu, pamatang (riparian area)	No	none	start from 15 - 32 years	fire (very scarce)
2	Gemor	<i>Alseodaphne sp.</i>	9	Bark	2	luaw	No	none	start from 6-8 years	fire, expensive planting material and cannot produce their own nurseries.
2	Kahui	<i>Shorea balangeran</i>	4	timber, bark, fruit/seedling	1; 2	luaw, pamatang, bukit, tayap	no; yes 4x5m	fertilizer and weeding 2 times a year (DAK DR program)	start from 5-10 years	Fire
2	Cempedak	<i>Artocarpus champeden</i>	4	fruit includes fruit bark and seed	1	pamatang, bukit	yes 5x5m	weeding 4 times a year; fertilizer 2-3 times a year, mostly no fertilizer.	cangkokan: start from 1 year	fire, expensive planting material, stem worm

										(pest)
2	Rambutan	<i>Nephelium lappaceum</i>	3	Fruit	1	pamatang, bukit	yes 4x4m	use timbukan technique (bedengan persegi), weeding 4 times a year, fertilizer with urea or manure once a year	cangkokan 1 year	fire, stem worm, expensive price of planting material
3	Mangga asam	<i>Mangifera sp.</i>	12	fruit, timber	1	pamatang, bukit	no; yes 10x10m	none	start from 15 years	fire and stem worm
3	Rangas/Jingah	<i>Gluta renghas</i>	8	timber, fruit for consumption	2	tayap napu, pamatang, bukit	No	none	start from 15 - 32 years	fire (very scarce)