Appendix D

1	**Coffee/Rambutan to Oilpalm (25 yrs)**		
1.0	**Plantation area**	ha	1
1.1	**Change in biomass carbon stock**		
	C-stock in mature coffee/rambutan tree (25 yrs old)	t C/ha	116
	Biomass-stock in mature oil palm trunk (20 yrs old)	t dm/ha	136
	C-fraction in biomass	%	50%
	C-stock in mature rambutan/coffee (20 yrs old)	t C/ha	58.00
	C-stock in mature oil palm trunk (20 yrs old)	t C/ha	68.00
	Time-span of land use for oil palm	years	25
	Change in biomass carbon stock	***t C/(ha-yr)***	***0.40***
	GHG emissions	***t CO2eq/(ha-yr)***	***-1.47***
1.2	**Change in dead organic matter (DOM) carbon stock**		
	C-stock in litter and fall in coffee/rambutan plantation (over 25 years)	t C/(hax25yrs)	50
	Annual biomass-stock in litter (fronds and male inflorescence)	t dm/ha	7
	C-fraction in biomass	%	40%
	Annual C-stock in litter (fronds and male inflorescence)	t C/ha	2.8
	Time-span of oil palm plantation	years	25
	Accumulated C-stock in litter of oil palm	t C/(ha*25yrs)	70
	Change in DOM carbon stock	***t C/(ha-yr)***	***0.8***
	GHG emissions	***t CO2eq/(ha-yr)***	***-2.93***
1.3	**Change in soil organic carbon stock (SOC)**		
1.3.1	***Change in mineral soil C-stock***		
	SOC(historic) at top soil (0-30 cm) in coffee/rambutan plantation at age of 25 yrs old	t C/ha	47
	SOC_o (current) in oil palm plantation		
	SOCref	t C/ha	47
	FLU	Fraction	1
	FMG	*Fraction*	*1.22*
	Fl	Fraction	1.11
	SOC_o (current) in oil palm plantation	t C/ha	63.65
	Time-span of oil palm plantation	years	25
	Change in mineral soil C-stock	**t C/(ha-yr)**	**0.67**
1.3.2	***Change in organic soil C-stock***	t C/(ha-yr)	0
1.3.3	***Change in inorganic soil C-stock***	t C/(ha-yr)	0
	Change in SOC (total)	**t C/(ha-yr)**	**0.67**
	GHG emissions	***t CO2eq/(ha-yr)***	***-2.44***
1.4	**Emissions from crop residue burning (land clearance)**		
	Mass of fuel available for combustion	t dm./ha	0
	Combustion factor	%	0
	GHG (Non-CO2) emission factor (CH4 and N2O)	g CO2 eq/kg dm burnt	0
	GHG (Non-CO2) emission from burning	t CO2 eq/ha	0
	Time-span of oil palm plantation	years	25
	GHG (Non-CO2) emission from crop residue burning	**t CO2 eq/(ha-yr)**	**0**
1.5	**Total GHG emissions**	**t CO2 eq/(ha-yr)**	**-6.84**

2	**Paddy field to Oilpalm (25 yrs)**		
2.0	**Plantation area**	ha	1
2.1	**Change in biomass carbon stock**		
	C-stock in paddy field (after harvest)	t C/ha	0
	Biomass-stock in mature oil palm trunk (20 yrs old)	t dm/ha	136
	C-fraction in biomass	%	50%
	C-stock in mature oil palm trunk (20 yrs old)	t C/ha	68.00
	Time-span of land use for oil palm	years	25
	Change in biomass carbon stock	***t C/(ha-yr)***	***2.72***
	GHG emissions	***t CO2eq/(ha-yr)***	***-9.97***
2.2	**Change in dead organic matter (DOM) carbon stock**		
	C-stock in DOM under rice paddy	t C/ha	0
	Annual biomass-stock in litter (fronds and male inflorescence)	t dm/ha	7
	C-fraction in biomass	%	40%
	Annual C-stock in litter (fronds and male inflorescence)	t C/ha	2.8
	Time-span of oil palm plantation	years	25
	Accumulated C-stock in litter of oil palm	t C/(ha*25yrs)	70
	Change in DOM carbon stock	***t C/(ha-yr)***	***2.8***
	GHG emissions	***t CO2eq/(ha-yr)***	***-10.26***
2.3	**Change in soil organic carbon stock (SOC)**		
2.3.1	***Change in mineral soil C-stock***		
	SOC(historic) in rice field	t C/ha	
	SOCref	t C/ha	47
	FLU	Fraction	1.1
	FMG	Fraction	1
	Fl	Fraction	1
	SOC (historic) in ~~tangerine orchard~~ rice	t C/ha	51.7
	SOC_o (current) in oil palm plantation		
	SOCref	t C/ha	47
	FLU	Fraction	1
	FMG	Fraction	1.22
	Fl	Fraction	1.11
	SOC_o (current) in oil palm plantation	t C/ha	63.65
	Time-span of oil palm plantation	years	25
	Change in mineral soil C-stock	**t C/(ha-yr)**	**0.48**
2.3.2	***Change in organic soil C-stock***	t C/(ha-yr)	0
2.3.3	***Change in inorganic soil C-stock***	t C/(ha-yr)	0
	Change in SOC (total)	**t C/(ha-yr)**	**0.48**
	GHG emissions	***t CO2eq/(ha-yr)***	***-1.75***
2.4	**Emissions from crop residue burning (land clearance)**		
	Mass of fuel available for combustion	t dm./ha	12
	Combustion factor	%	89%
	GHG (Non-CO2) emission factor (CH4 and N2O)	kg CO2 eq/t dm burnt	88.36
	GHG (Non-CO2) emission from burning	t CO2 eq/ha	0.94
	Time-span of oil palm plantation	years	25
	GHG (Non-CO2) emission from crop residue burning	**t CO2 eq/(ha-yr)**	**0.04**
2.5	**Total GHG emissions**	**t CO2 eq/(ha-yr)**	**-21.94**