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Appendix 1. Participants

Course organizers:
General: Dr. Daniel Murdiyarso, Dr. Meine van Noordwijk

Century model: Dr. Paul Woomer

Fieldwork: Dr. Kurniatun Hairiah, Dr. Cheryl Palm, Dr. Suryo Hardiwinoto

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Appendix 2. Course program

Sunday 7 August
18.00 - 21.00 Welcome party at Bogor Baru A VI 20-21

Monday 8 August
8.00 - 9.00 Opening, Introduction of participants - DM/MvN
9.00 - 10.00 ASB site characterization: objectives, current state of affairs - MvN
10.00 - 10.30 Coffee break
10.30 - 11.30 Backgrounds of Century model - PW
11.30 - 12.30 Computer excercise: running Century and evaluating output - PW
12.30 - 14.00 Lunch break
14.00 - 15.30 Computer excercise: running Century and evaluating output - PW
15.30 - 16.00 Wrap up session, plans for the rest of the week - DM/MvN

Tuesday 9 August
8.00 - 10.00 Computer excercise: adjusting data files for Century - PW
10.00 - 10.30 Coffee break/ transport to Biotrop
10.30 - 12.30 GIS/Vegetation mapping demonstration at Biotrop - DM/Sylvendra
12.30 - 14.00 Lunchbreak, return to IPB
14.00 - 15.30 Computer excercise continued - PW
15.30 - 16.00 Greenhouse gas emision measurements: backgrounds - DM/Yahya

Wednesday 10 August
7.00 Leave for Dermaga
8.00 - 10.30 Demonstration measurements of greenhouse gas emisisons - DM/Yahya
11.00 - 12.30 Demonstration GIS facilities at CIFOR ? - MvN/Gillison
12.30 - 14.00 Lunch break
14.00 - 15.00 Computer excercise: exploring new applications for the Century model - PW
15.00 - 16.00 Planning field measurements on 4 sites to obtain model parameters - round table
16.00 - 16.30 Wrap up of Bogor part of training course - DM/MvN

Thursday 11 August
9.00 Leave Bogor for flight to Jambi (12.40 -> 13.50 ?) and transfer to Muara Tebo

Friday 12 August
Measurements of above & belowground biomass, litter, SOM fractions etc. SU/KH/CP

Saturday 13 August
General reconnaissance of benchmark area, selection of study sites

Sunday 14 August
Further field work/ Late afternoon return to Jambi
Monday 15 August
First fight to Jakarta

ndix 3: Data report forms

SCETSOM I: Transect Data Report Forms

SCETSOM I. Data Report Form I: Transect location and description.

ect established by: name_____

institute _____

address _____

_____

ect name _____ Date of establishment: _____

ect location: district/precinct (or province) _____ near _____ (town)

ect features and coordinates: if located in farmers fields, provide farmers names

land use original forest age ____(yr) long. _____ lat. _____

land use cleared and burned age ____(yr) long. _____ lat. _____

land use productively cropped age ____(yr) long. _____ lat. _____

land use degrading land age ____(yr) long. _____ lat. _____

land use abandoned land or fallow age ____(yr) long. _____ lat. _____

land use (other)_____ age ____(yr) long. _____ lat. _____

land use (other)_____ age ____(yr) long. _____ lat. _____

oximate length of transect _____(km)

the transect have non-uniform slope, span non-uniform terrain, have obvious soil changes or bodies of water? if so, describe _____

_____

_____

have you selected this transect? In which ways it is representitive of larger land use patterns?

_____

_____

_____

_____

e draw a map of the transect on the reverse side of this form, or preferentially, draw the transect photocopy of a topographic map and attach to this form.

SCETSOM I. Data Report Form II: Study site soil characteristics.

Transect _____ name _____ date _____

Note: this form is intended to document the uniformaty of factors along the study transect.

Site no	color at 25 cm	sand[1]	silt	clay	pH (2:1 H_2O)
		---------- % ----------			
1	_____	____	____	____	____
2	_____	____	____	____	____
3	_____	____	____	____	____
4	_____	____	____	____	____
5	_____	____	____	____	____
6	_____	____	____	____	____
7	_____	____	____	____	____

[1] collect composit soil sample from 0-25 cm for sand, silt, clay and pH determinations

Site no	slope (%)	distance to village	distance to road	farmer name
		---------- km ----------		
1	____	_____	_____	_____
2	____	_____	_____	_____
3	____	_____	_____	_____
4	____	_____	_____	_____
5	____	_____	_____	_____
6	____	_____	_____	_____
7	____	_____	_____	_____

SCETSOM I. Data Report Form III: Original Forest Site.

Benchmark country _____ Transect _____ Site number _____
name _____ date _____ forest age _____ yrs
Note: to be completed for forest site only

Pool	rep	Dry weight kg/ha	C	N	P
				%	
tree biomass	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
understorey biomass		_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
surface fine litter	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
surface woody litter	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
coarse root biomass	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
fine root biomass	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
soil microbial biomass	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
particulate SOM	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
soil charcoal	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
humic SOM	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
Total soil C,N&P	1	na	____	____	____
	2	na	____	____	____
	3	na	____	____	____
Extractable N&P	1	na	na	____	____
	2	na	na	____	____
	3	na	na	____	____

SCETSOM I. Data Report Form IV: Felled and Burned Forest.

Benchmark country _____ Transect _____ Site number _____
name _____ date burned _____ date sampled _____

Note: to be completed for the cleared and burned site only.

Pool	rep	Dry weight kg/ha	C	N	P
				%	
tree biomass (remaining)	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
removed wood (e.g. timbers)	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
surface woody litter (not burned)	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
surface fine litter (not burned)	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
surface ash	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
soil microbial biomass	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
particulate SOM	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
surface and soil charcoal	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
humic SOM	1	_____	____	____	____
	2	_____	____	____	____
	3	_____	____	____	____
Total soil C,N&P	1	na	____	____	____
	2	na	____	____	____
	3	na	____	____	____
Extractable N&P	1	na	na	____	____
	2	na	na	____	____
	3	na	na	____	____

SCETSOM I. Data Report Form V: Cultivated Field 1.

Benchmark country _____ Transect _____ Site number _____
name _____ date burned _____ date sampled _____

Part 1. Crops and Management.

1. Clearing size _____ha dimensions _____m x _____m

2. Was the soil tilled after felling and burning? [no] [yes]

   if yes method _____ depth _____(cm) date _____

3. Were any external inputs applied to the soil? [no] [yes]

   if yes input _____ rate _____kg/ha C _____% N _____% P _____%

   date applied _____ placement _____

4. Complete the table of crops, their coverage, harvested plant parts and approximate yield.

crop	coverage %	harvested part(s)	yield kg/ha

SCETSOM I. Data Report Form V: Cultivated Field 1 (cont).

Benchmark country _____ Transect _____ Site number _____

name _____ date burned _____ date sampled _____

Part 2. Organic matter and nutrient dynamics. To be used for cropped lands only.

Pool	rep	Dry weight kg/ha	C	N	P
			---------- % ----------		
tree biomass (recovering)	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
crop biomass (aboveground)	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
crop root biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
surface fine litter	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
soil microbial biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
particulate SOM	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
surface and soil charcoal	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
humic SOM	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
Total soil C,N&P	1	na	_____	_____	_____
	2	na	_____	_____	_____
	3	na	_____	_____	_____
Extractable N&P	1	na	na	_____	_____
	2	na	na	_____	_____
	3	na	na	_____	_____

SCETSOM I. Data Report Form VI: Cultivated Field 2.

Benchmark country _____ Transect _____ Site number _____
name _____ date burned _____ date sampled _____

Part 1. Crops and Management.

1. Clearing size _____ha dimensions _____m x _____m

2. Was the soil tilled after felling and burning? [no] [yes]

   if yes method _____ depth _____(cm) date _____

3. Were any external inputs applied to the soil? [no] [yes]

   if yes input _____ rate _____kg/ha C _____% N _____% P _____%

   date applied _____ placement _____

4. Complete the table of crops, their coverage, harvested plant parts and approximate yield.

crop	coverage %	harvested part(s)	yield kg/ha

SCETSOM I. Data Report Form VI: Cultivated Field 2 (cont).

Benchmark country _____ Transect _____ Site number _____

name _____ date burned _____ date sampled _____

Part 2. Organic matter and nutrient dynamics. To be used for cropped lands only.

Pool	rep	Dry weight kg/ha	C	N	P
			%		
tree biomass (recovering)	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
crop biomass (aboveground)	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
crop root biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
surface fine litter	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
soil microbial biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
particulate SOM	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
surface and soil charcoal	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
humic SOM	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
Total soil C,N&P	1	na	_____	_____	_____
	2	na	_____	_____	_____
	3	na	_____	_____	_____
Extractable N&P	1	na	na	_____	_____
	2	na	na	_____	_____
	3	na	na	_____	_____

SCETSOM I. Data Report Form VII: Recovering Fallow or Abandoned/Degraded Site.

Benchmark country _____ Transect _____ Site number _____
name _____ date _____ fallow age _____ yrs

1. Does a farmer claim title to the field? [no] [yes] if yes name _____

2. Clearing size _____ ha dimensions _____ m x _____ m

3. How many years was area cropped before abandonment? _____ (yrs)

4. Does the field appear to be a [1] recovering fallow or [2] degraded/arrested succession?

   if [2] degraded/abandoned, what are your reasons for such a designation?

   _____
   _____
   _____

5. Are remnant crop species present in the field? [no] [yes] if yes, complete table below:

crop	coverage %	harvested part(s)	yield kg/ha

6. Are successional forest species being harvested or utilised? [no] [yes] if yes, complete table below:

species	coverage	harvested part(s) and value

SCETSOM I. Data Report Form VII: Recovering Fallow or Abandoned/Degraded Site.

Benchmark country _____ Transect _____ Site number _____

name _____ date _____ forest age _____ yrs

Note: to be completed for recovering fallow or abandoned/degraded site only

Pool	rep	Dry weight kg/ha	C	N	P
				%	
tree biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
understorey biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
surface fine litter	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
surface woody litter	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
coarse root biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
fine root biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
soil microbial biomass	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
particulate SOM	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
soil charcoal	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
humic SOM	1	_____	_____	_____	_____
	2	_____	_____	_____	_____
	3	_____	_____	_____	_____
Total soil C,N&P	1	na	_____	_____	_____
	2	na	_____	_____	_____
	3	na	_____	_____	_____
Extractable N&P	1	na	na	_____	_____
	2	na	na	_____	_____
	3	na	na	_____	_____

SCETSOM II. Experiment Data Report Form 1: Microbial Biomass Carbon

Institute _____

Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____

1. Data records of microbial biomass carbon in ppm. Method _____

Soil depth _____ cm. Bulk density _____ g/cm3

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 2												
wk 4												
wk 8												
wk 16												
wk 26												
wk 52												

SCETSOM II. Experiment Data Report Form 2: Microbial Biomass Nitrogen

Institute _____

Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____

2. Data records of microbial biomass nitrogen in ppm. Method _____

Soil depth _____ cm. Bulk density _____ g/cm3

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
-												
cleared												
burned												
wk 2												
wk 4												
wk 8												
wk 16												
wk 26												
wk 52												

SCETSOM II. Experiment Data Report Form 3: Carbon Fractionation

Institute _____ Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____ Soil depth _____ cm. Bulk density _____ g/cm3

3. Data records of soil carbon fractionation. Note: see Appendix 1 for procedure (litter >2mm; residue 250μm-2mm; POM 50μm-250μm).

TIME		Clear			Burn			Week 2			Week 4		
		Litter	Residue	Particulate	Litter	Residue	Particulate	Litter	Residue	Particulate	Litter	Residue	Particulate
BURNSOM block:	I												
	II												
	III												
	IV												
ASHSOM block:	I												
	II												
	III												
	IV												
ADDSOM block:	I												
	II												
	III												
	IV												

SCETSOM ii. Experiment Data Report Form 4a: Carbon Fractionation

Institute _____ Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____ Soil depth _____ cm. Bulk density _____ g/cm3

3. Data records of soil carbon fractionation. Note: see Appendix I for procedure (litter >2mm; residue 250μm-2mm; POM 50μm-250μm).

TIME		Week 8			Week 16			Week 26			Week 52		
		Litter	Residue	Particulate	Litter	Residue	Particulate	Litter	Residue	Particulate	Litter	Residue	Particulate
BURNSOM block:	I												
	II												
	III												
	IV												
ASHSOM block:	I												
	II												
	III												
	IV												
ADDSOM block:	I												
	II												
	III												
	IV												

SCETSOM II. Experiment Data Report Form 4b: Total Soil Carbon

Institute _____

Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____

4. Data records of total soil carbon (%). Method _____

Soil depth _____ cm. Bulk density _____ g/cm3

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 2												
wk 4												
wk 8												
wk 16												
wk 26												
wk 52												

SCETSOM II. Experiment Data Report Form 5: Total Soil Nitrogen

Institute _____

Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____

5. Data records of total soil nitrogen (%). Method _____

Soil depth _____ cm. Bulk density _____ g/cm^3

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 2												
wk 4												
wk 8												
wk 16												
wk 26												
wk 52												

SCETSOM II. Experiment Data Report Form 6: Total Soil Phosphorus

Institute _____

Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____

6. Data records of total soil phosphorus in ppm. Method _____

Soil depth _____ cm. Bulk density _____ g/cm^3

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 2												
wk 4												
wk 8												
wk 16												
wk 26												
wk 52												

SCETSOM II. Experiment Data Report Forms 7 and 8: Extractable Cations

Institute _____

Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____

7. Data records of extractable potassium in cmol./kg. Method _____

Soil depth _____ cm. Bulk density _____ g/cm³ Soil CEC _____ cmol./kg

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 16												
wk 52												

8. Data records of extractable calcium in cmol./kg. Method _____

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 16												
wk 52												

SCETSOM II. Experiment Data Report Form 9: Extractable Acidity

Institute _____

Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____

9. Data records of extractable acidity in cmol./kg. Method _____

Soil depth _____ cm. Bulk density _____ g/cm³ Soil CEC _____ cmol./kg

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 16												
wk 52												

SCETSOM II. Experiment Data Report Forms 10 and 11: Special Carbon Pools

Institute _____

Contributor _____ Date _____

Site name _____ Long. _____ Lat. _____

10. Data records of leachable soil carbon in ppm. Method _____

Soil depth _____ cm. Bulk density _____ g/cm^3

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 52												

11. Data records of soil charcoal in g/m^2. Method _____

Soil depth _____ cm. Bulk density _____ g/cm^3 Soil CEC _____ cmol./kg

treatment	BURNSOM				ASHSOM				ADDSOM			
block	I	II	III	IV	I	II	III	IV	I	II	III	IV
cleared												
burned												
wk 52												

SCETSOM II. Experiment Data Report Form 12: Crop Productivity WEEK 8

Institute _____ Contributor _____ Harvest date _____

Site name _____ Long. _____ Lat. _____ Crop _____ Planting date _____

12. Data records of Week 8 crop growth. Note: express dry weight as g/m^2 and nutrient contents as percent (%).

TIME		----- Dry Weight (g/m^2) ----		------- Total N (%) ----------		-------- Total P (%) --------		-------- Total K (%) ---------	
		Shoots	Roots	Shoots	Roots	Shoots	Roots	Shoots	Roots
BURNS block:	I								
	II								
	III								
	IV								
ASHSOM block:	I								
	II								
	III								
	IV								
ADDSOM block:	I								
	II								
	III								
	IV								

SCETSOM II. Experiment Data Report Form 13: Crop Productivity at Grain Maturity

Institute _____ Contributor _____ Harvest date _____

Site name _____ Long. _____ Lat. _____ Crop _____ Planting date _____

13. Data records of crop growth at harvest maturity. Note: express dry weight as g/m^2 and nutrient contents as percent (%).

TIME		Dry Weight (g/m^2)			Total N (%)			Total P (%)			Total K (%)		
		Grain	Shoots	Roots	Grain	Shoots	Roots	Grain	Shoots	Roots	Grain	Shoots	Roots
BURNSOM block:	I												
	II												
	III												
	IV												
ASHSOM block:	I												
	II												
	III												
	IV												
ADDSOM block:	I												
	II												
	III												
	IV												