Appendixes:

Appendix A: Questionnaire Kaingin

University van Hall larenstein, The Netherlands—Centre For Sustainability, The Philippines

Questionnaire Land Grabbing:
Name Interviewer:_____
Name Respondent:_____

Gender:_____
Age:_____
Occupation:_____
Profession:_____

No. of years in the Area:_____
Monthly income:
0-1000 ☐
1000-3000 ☐
3000-5000 ☐
>5000 ☐

Interview Reason:
We are researchers who work for the NGO 'Centre for Sustainability' to help mapping the forest areas, agricultural areas and residential places in the Municipality of Puerto Princesa, in particular the Baranguays; Cabayugan and Tagabinet. We are very interested in your view on the land cover change since the last decade (2002-2012), what kind of problems you encounter and what solutions you think would be good to solve the problem.
Down below is a list of pre-arranged questions which we would like to ask you to answer the subject that we are doing research on. Your answers will be appreciated and would be very helpful to gain a better insight in the Kaingin situation in Cabayugan and Tagabinet. The information which is collected during the interview will be dealt confidential and is only used for this research.

1) What is the main reason that you are applying forest conversion?
____lack of income
____I have no land
____annual yield is too low
____I want to have more land
____swidden cultivation/slash and burn
____other

2) How do you converse the forest?
____ swidden cultivation
____cut all the trees
____ slash and burn/permanent settlement
____other

3) About how much land have you converted?
____0-1 hectare
____1-5 hectares
____5-10 hectares
____10-20 hectares
____20-50 hectares
____> 50 hectares

4) Where do you use the land for after forest conversion?
____agriculture
____farm animals
____other
____residential area/farmhouse
____establishment of a store for tourism

5) In the case of agriculture, what do you plant?

____rice ____banana
____mais ____coconut
____other

6) In the case of farm animals, which animals do you have?

____chickens ____dugs
____water buffels ____goats
____other

6) In the case of tourism, what kind of shop do you want to build?

____restaurant ____hotel/pension
____fast food ____bar
____other

8) What effects do you notice in your local environment because of Land Grabbing?

____loss of forests/vegetation ____loss of water
____There is a loss of wildlife ____increase in (soil) erosion
____decrease in water quality ____increase in competition for natural resources
____other

10) What kind of solutions do you use to resolve the negative effects?

____ Legitimate Ownership ____Higher yield with better technology
____Alternative job (tourist guide) ____Other
____Alternative Agricultural use (Agroforestry)

11) Did you have any problems with the government or other people in relation to Kaingin or forest conversion?

12) What type of ownership do you have on your land?

13) How many additional hectares of land would you like in the future?

14) What kind of crops would you like to plant on this additional land?

Appendix B: Questionnaire Charcoal Production

University van Hall larenstein, The Netherlands—Centre For Sustainability, The Philippines

Questionnaire Charcoal-Maker:
Name Interviewer:_____
Name Respondent:_____

Gender:_____
Age:_____
Occupation:_____
Profession:_____

No. of years in the Area:_____
Monthly income:
0-1000 ☐
1000-3000 ☐
3000-5000 ☐
>5000 ☐

Research Reason:
We are researchers who work for the NGO 'Centre for Sustainability' to identifying how much charcoal is collected in the Municipality of Puerto Princesa, in particular the Baranguays; Cabayugan and Tagabinet. We are very interested in your view on the Charcoal Production since the last decade (2002-2012), what kind of problems you encounter and what solutions you think would be good to solve the problem.
Down below is a list of pre-arranged questions which we would like to ask you to answer the subject that we are doing research on. Your answers will be appreciated and would be very helpful to gain a better insight in the Charcoal Production situation in Cabayugan and Tagabinet. The information which is collected during the interview will be dealt confidential and is only used for this research.

1) What is the main reason why you produce charcoal?

2) Which are the best tree species for charcoal-making, why are they good?
Give a list of 5-10 tree species which are commonly used

3) What part of a tree is used for charcoal making?
____Whole tree ____Branches
____Stem ____Other
____Roots

4) How big are the trees that you use for charcoal-making?
____0-10 cm ____30-40 cm
____10-20 cm ____>40 cm

5) How often do you produce charcoal?
____1x a week ____3x a week
____2x a week ____>4 a week
____other

6) How many trees do you need for 1 burning or one sack of charcoal?

7) What time of year do you produce charcoal?

8) How far do you need to travel to gather enough firewood for a burning?
____0-500 meter ____1000-2000 meter
____500-1000 meter ____>2000 meter

9) Are there any changes in comparison with 5 years ago how far you have to walk for enough firewood?

10) How many bags of charcoal are made per burning?

____0-5 ____10-15
____5-10 ____20 or more

11) Is the charcoal you make sold or is all the charcoal used for home consumption?

____partly sold ____completely sold
____partly for home consumption ____completely for home consumption
____other

12) In the case of selling, where do sell the charcoal then?

____Local market ____To a local buyer
____Local Sari-Sari Store ____Other

13) How much Pesos is payed for one bag of charcoal?

____0-20 ____40-50
____20-30 ____50-60
____30-40 ____>60

14) How much money do you generate per month with charcoal-making?

____0-500 pesos ____1500-2000 Pesos
____500-1000 pesos ____2000-3000 Pesos
____1000-1500 Pesos ____>3000 Pesos

16) Have you got other activities to generate income?

____Yes
____No

17) Are you familiar with the effects of charcoal-making on the environment?

____Yes ____Other
____No

18) What effects do you notice in your local environment because of charcoal-making?

____loss of forests/vegetation ____loss of water
____It is harder to find charcoal species ____decrease in water quality
____There is a loss of Wildlife ____increase in (soil) erosion
____increase in competition for natural resources

20) What kind of solutions would you be interested in to solve the negative effects?

____alternative fuel (Biogas, Kerosene) ____alternative energy sources (hydropower)
____more efficient stoves ____other

Additional Questions Charcoal-Buying:

Firewood use:

1) Which species of firewood do you use?

2) Where do you get the firewood from?

3) What part of a tree do you use for firewood?

4) How many parts of a tree do you use per week?

Charcoal-Buying Sari Sari Store:

1) Where do you buy the charcoal?

2) How much do you pay for 1 sack?

3) How many sacks do you sell?

4) How much do you ask for 1 sack?

5) Where do you sell the sacks?

6) To whom do you sell the sacks?

7) What is you additional monthly income for selling charcoal?

Appendix C: Questionnaire Charcoal Consumption

University van Hall larenstein, The Netherlands—Centre For Sustainability, The Philippines

Questionnaire Charcoal-Buyer:
Name Interviewer:_____
Name Respondent:_____

Gender:_____
Age:_____
Occupation:_____
Profession:_____

No. of years in the Area:_____
Monthly income:
0-1000 ☐
1000-3000 ☐
3000-5000 ☐
>5000 ☐

Research Reason:
We are researchers who work for the NGO 'Centre for Sustainability' to help identify how much charcoal is collected in the Municipality of Puerto Princesa, in particular the Baranguays; Cabayugan and Tagabinet. We are very interested in your view on Charcoal Consumption since the last decade (2002-2012), what kind of problems you encounter and what solutions you think would be good to solve the problem.
Down below is a list of pre-arranged questions which we would like to ask you to answer the subject that we are doing research on. Your answers will be appreciated and would be very helpful to gain a better insight in the Charcoal Consumption situation in Cabayugan and Tagabinet. The information which is collected during the interview will be dealt confidential and is only used for this research.

1)Do you use charcoal?

2) Why do you use charcoal?
____Affordable
____Convenient
____only fuel source
____other

3) Which species are used to make charcoal?
Mention the list of 5-10 species

4) How frequently do you buy charcoal?
____1x a week
____2x a week
____3x a week
___>4x a week
___other

5) How heavy is one sack of charcoal?

6) How much do you pay for one bag of charcoal?
____0-40 Pesos
____40-60 Pesos
____60-80 Pesos
____<80 Pesos

7) Where do you buy the charcoal?
____Straight from the burning site
____At the local Sari-Sari Store
____At the local market
____Other, Please specify

8) How much bags of charcoal do you consume per week?

____0-5 bags ____10-15 bags
____5-10 bags ____>20 bags

9) Can you buy charcoal year-round?

10) Is there more or less charcoal supply during the rainy season in comparison with the dry season?

11) What effects do you notice in your local environment because of charcoal-making?

____loss of forests/vegetation ____loss of water
____It is harder to find charcoal species ____decrease in water quality
____There is a loss of Wildlife ____increase in (soil) erosion
____increase in competition for natural resources

12) What kind of solutions would you be interested in to solve the negative effects?

____alternative fuel (Biogas, Kerosene) ____alternative energy sources (hydropower)
____more efficient stoves ____other

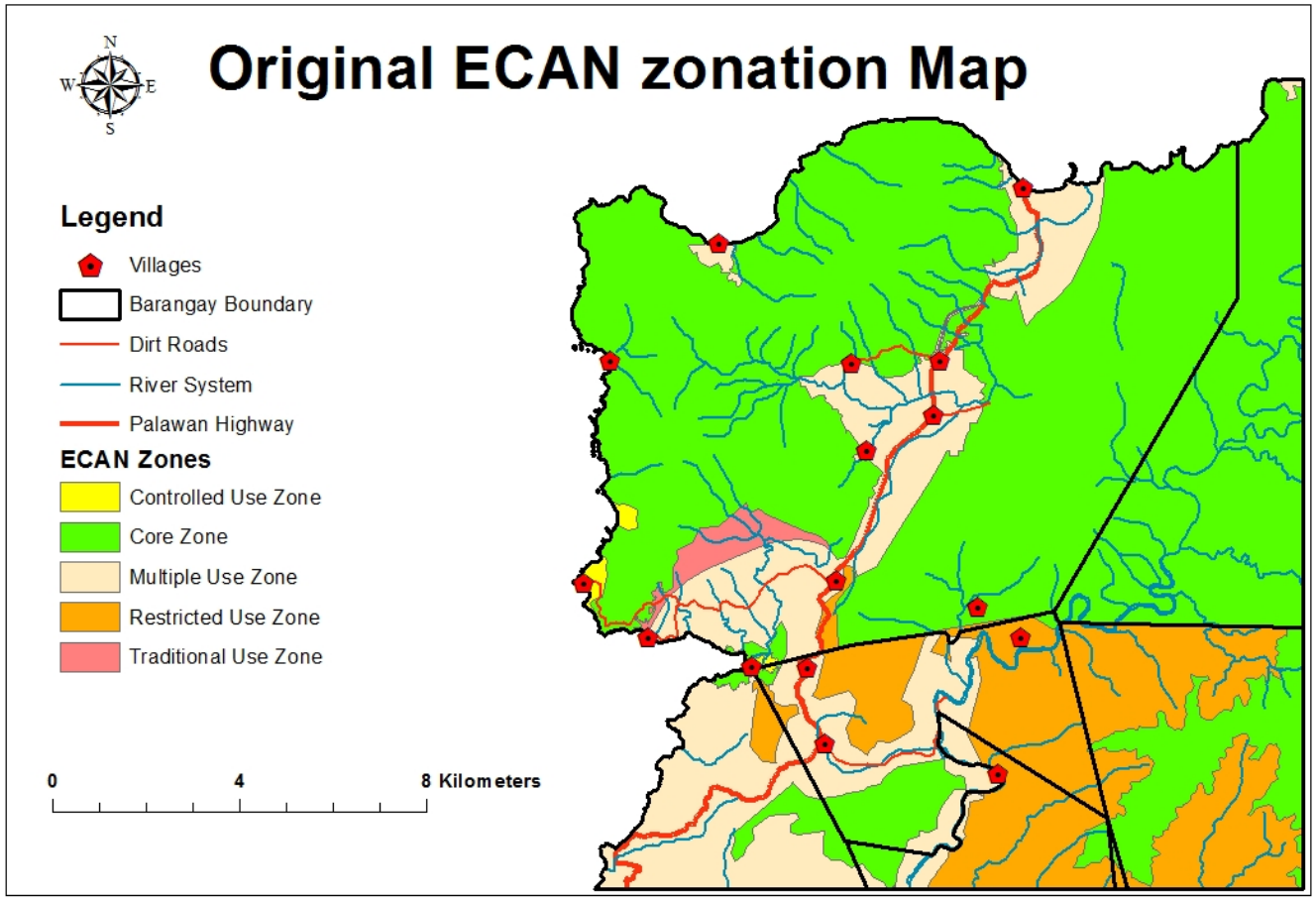
13) Can we weigh one of your charcoal sacks?

14) How many trees are necessary for 1 charcoal sack?

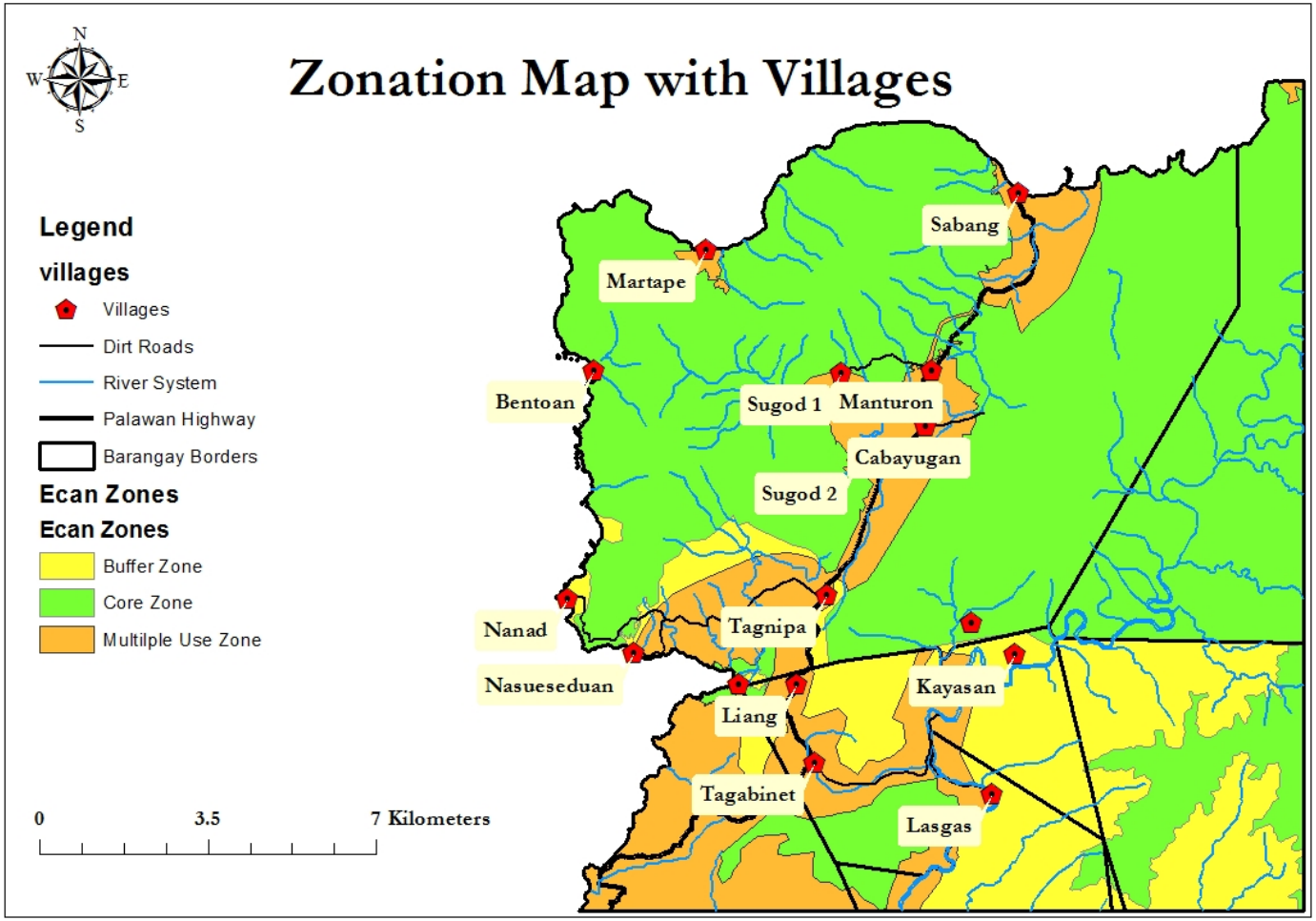
Appendix D: Field Form Burning Sites

Field Form Charcoal Piles/Sacks Counts						
Method Description: The method will be performed by consultation of local residents in combination with transect lines in the adjacent forest area						
Names survey Team				**Date**		
			Average Dm of the Burning Sites	**N charcoal Piles**	**Dm Charcoal Piles**	**N Charcoal Sacks (if Present)**
			The different Burning Sites are measured in height, length and width	Number of charcoal Piles which is encountered on the site	The lowest and the highest DBH is measured of the logs	N of charcoal Sacks that is encountered on the site
Waypoints	x coordinate	y coordinate	Average dm. of burning sites	N charcoal Piles	DBH classes Charcoal Piles	N charcoal Sacks

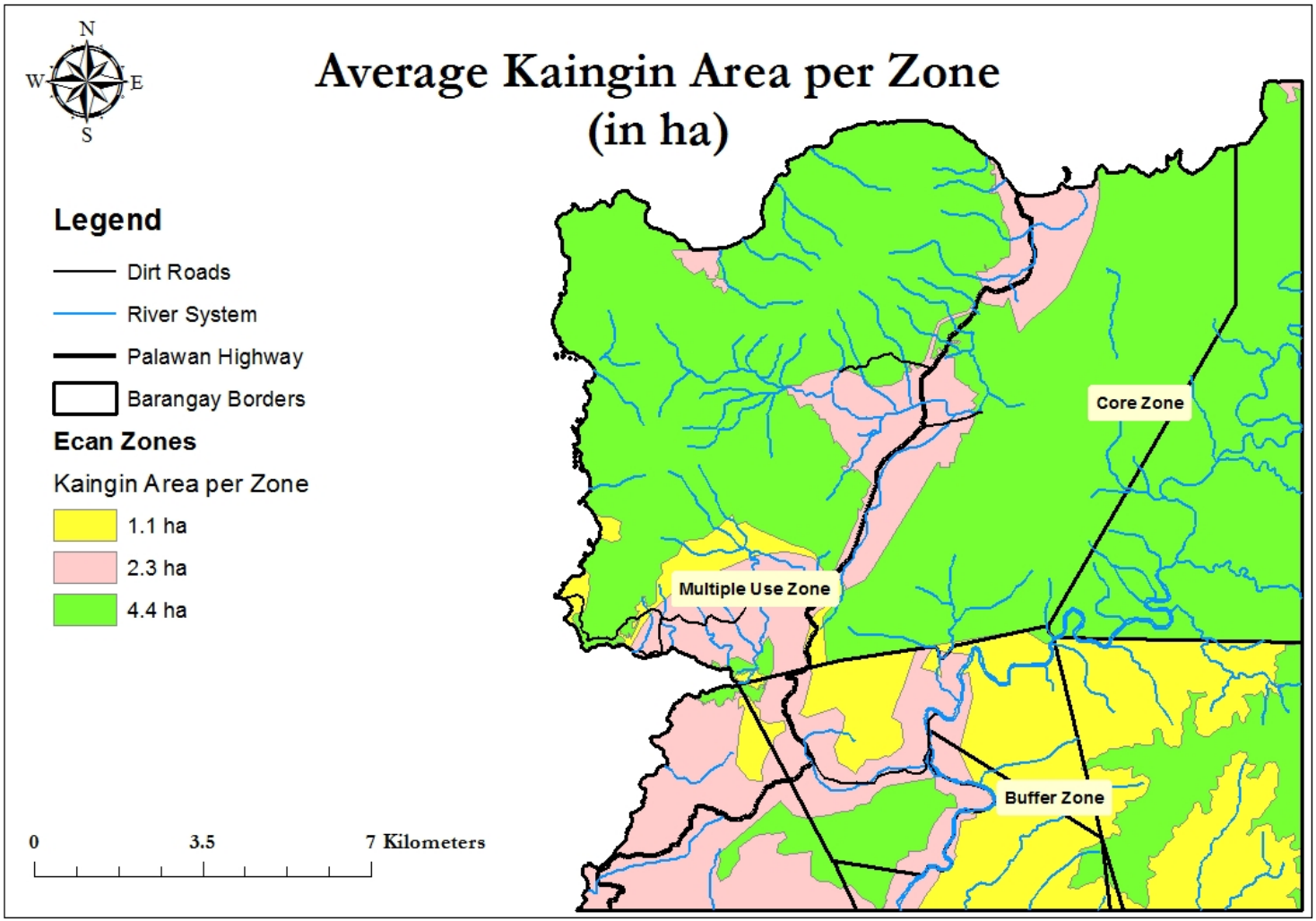
Appendix E: ECAN Zonation Map



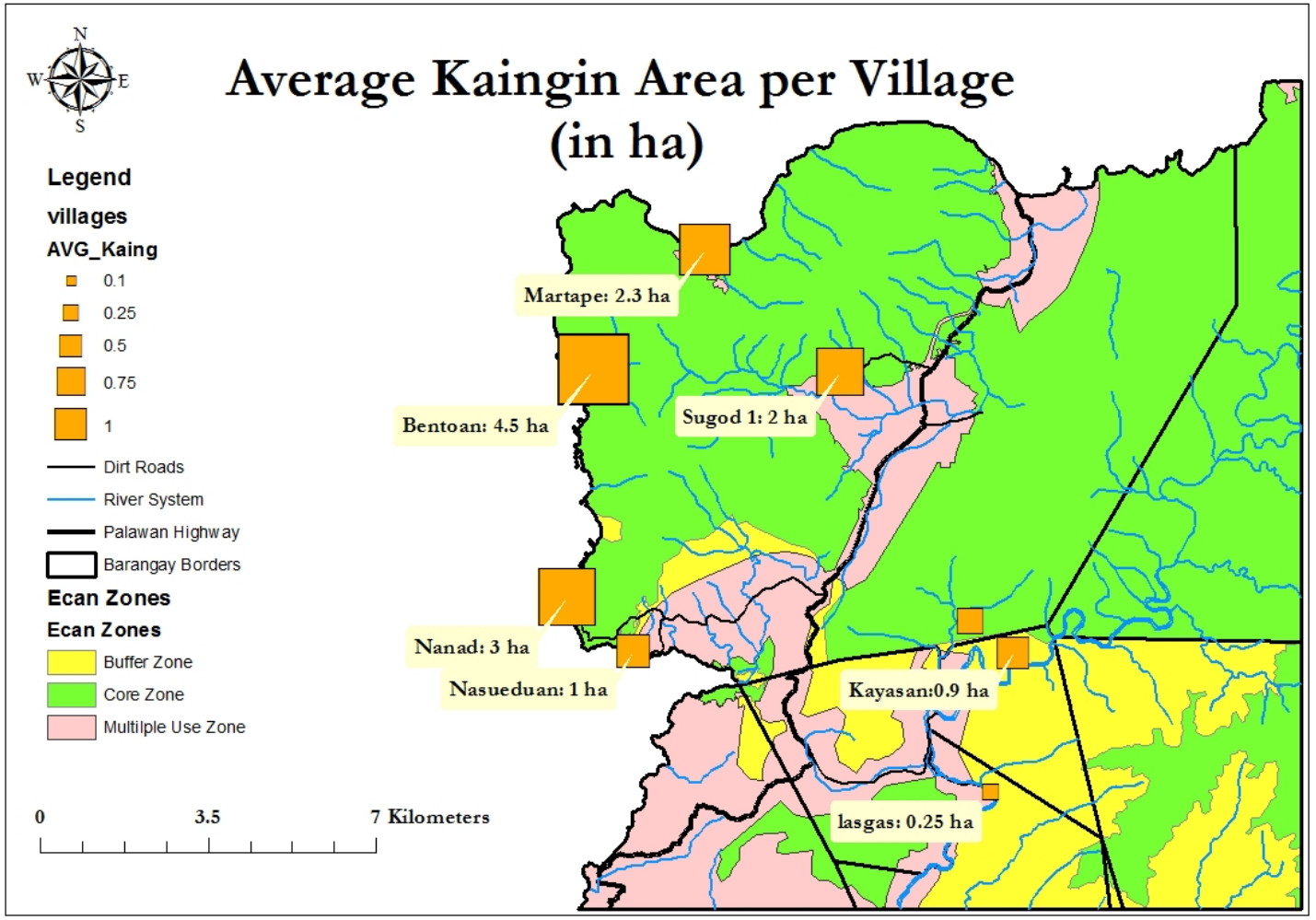
Appendix F: Study Area Map



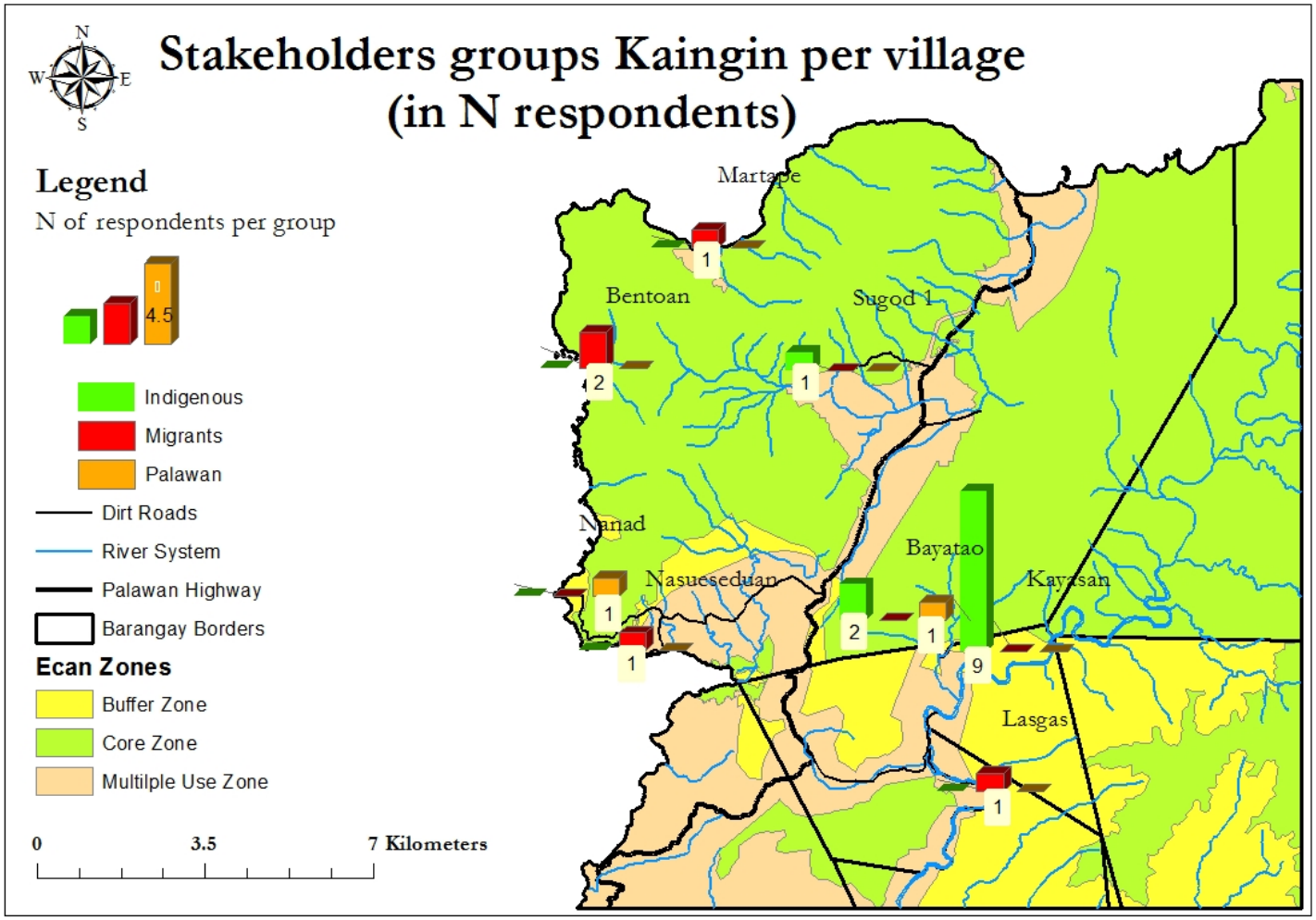
Appendix G: Average Kaingin Area per Zone



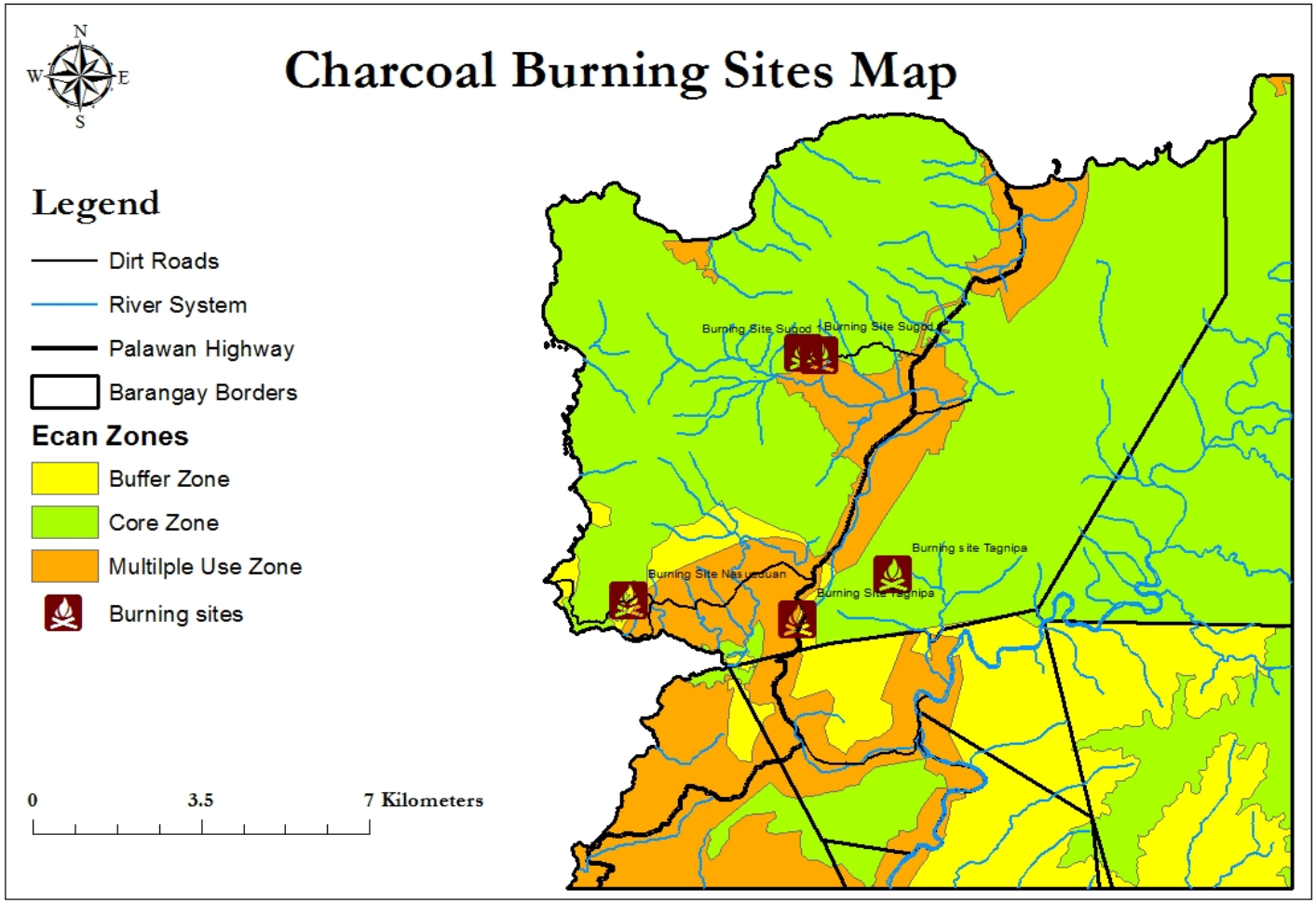
Appendix H: Kaingin Area per Village



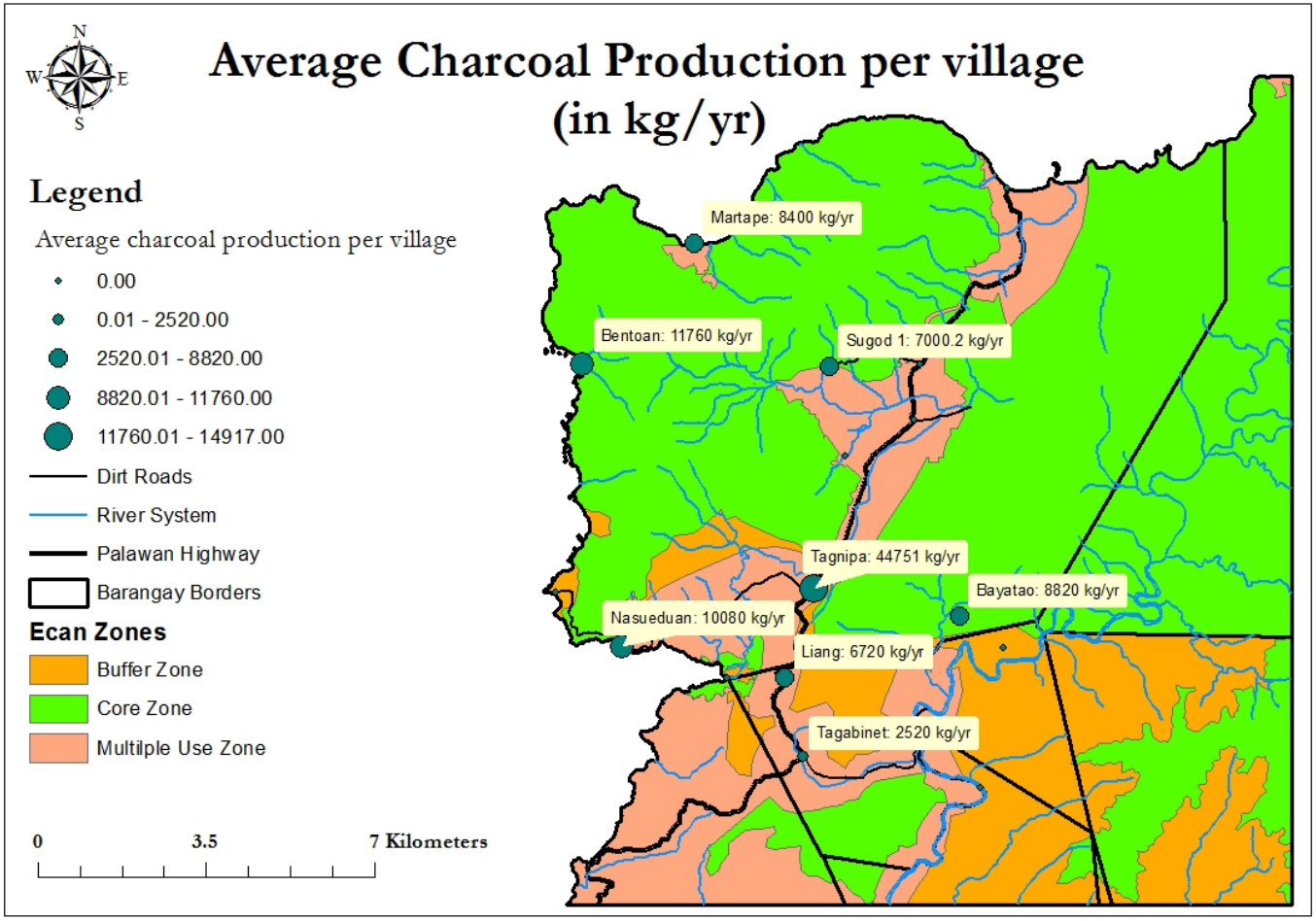
Appendix I: Stakeholders group Kaingin Practices



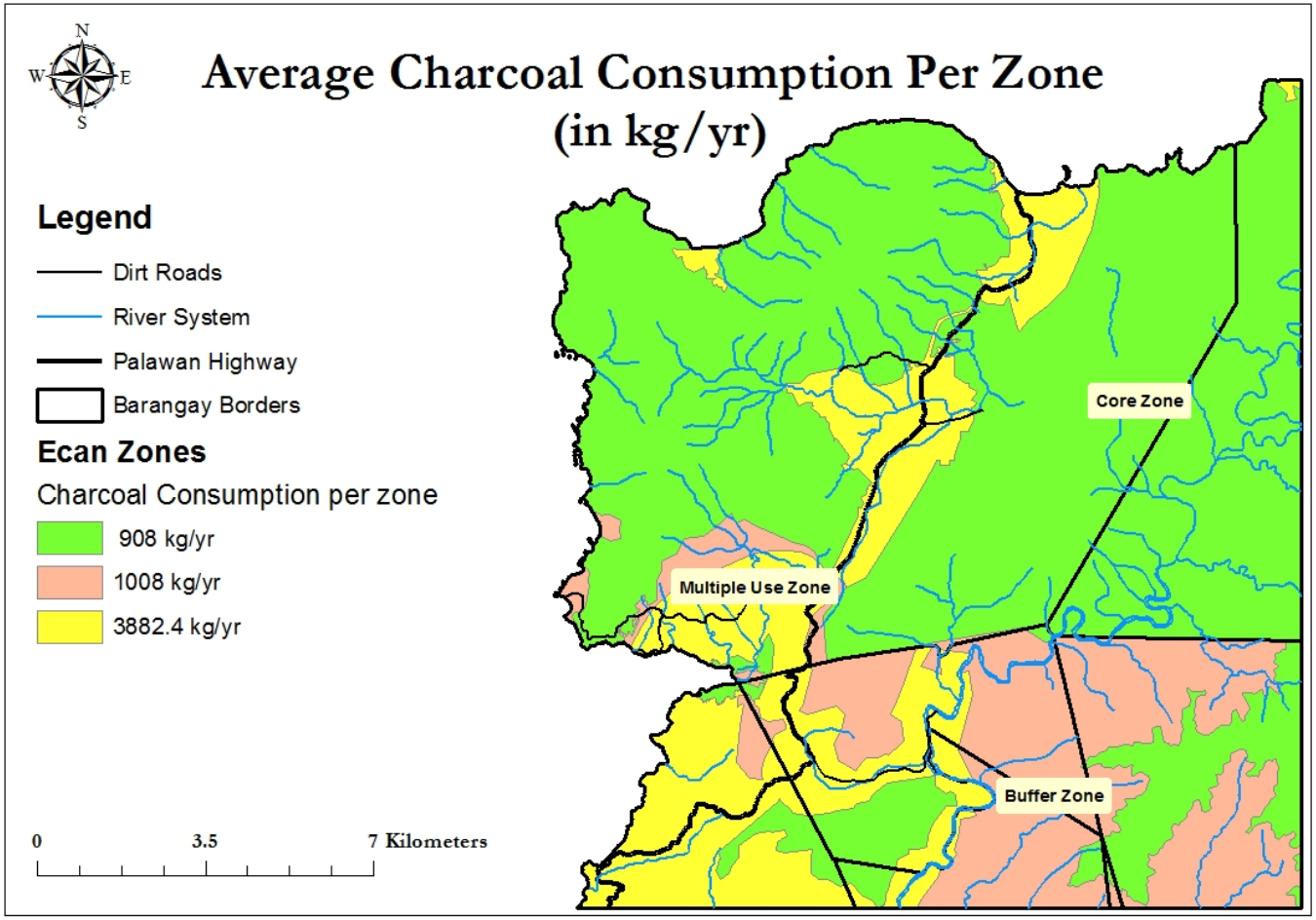
Appendix J: Burning Sites Map



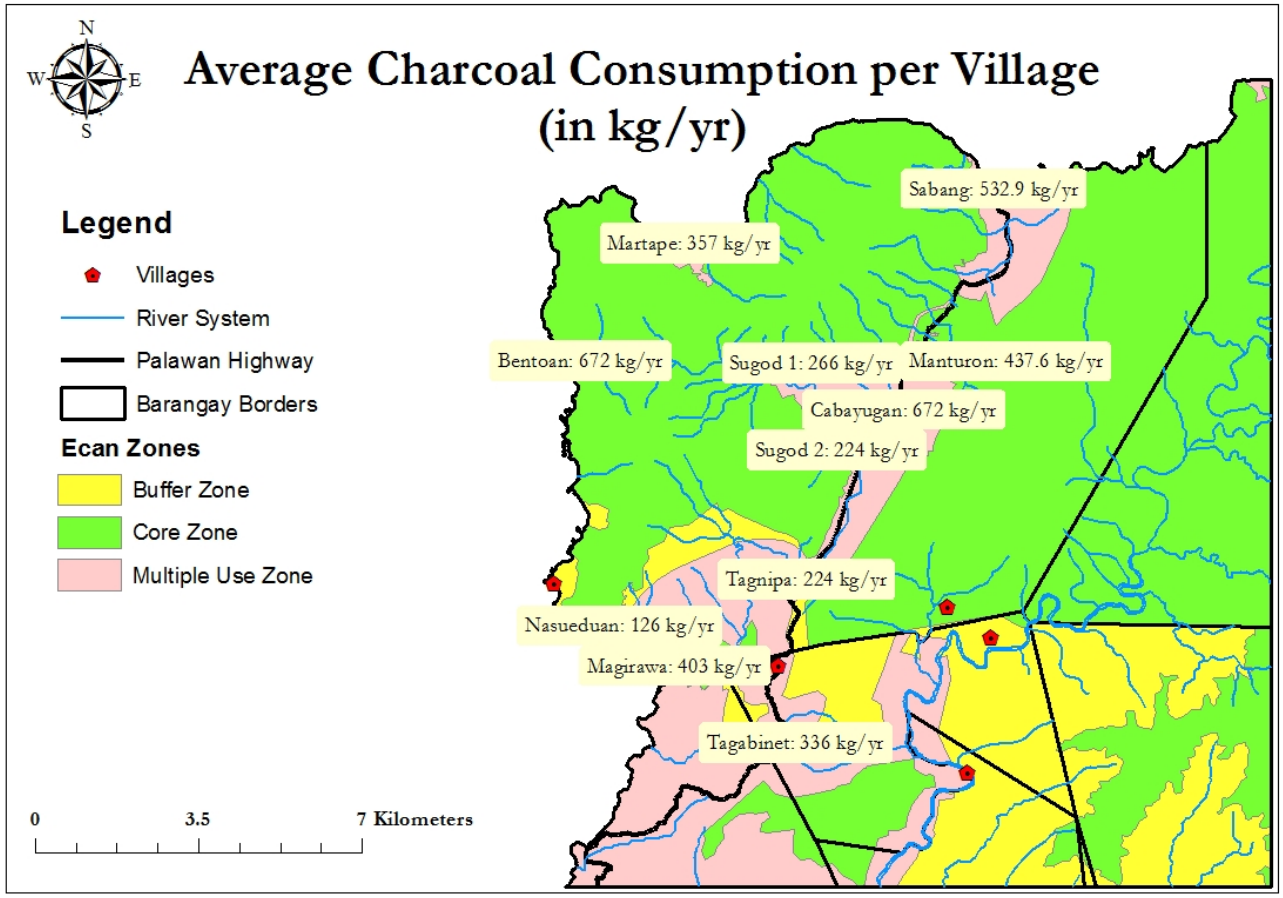
Appendix K: Charcoal-Making per village



Appendix L: Charcoal Consumption Map



Appendix N: Average Charcoal Consumption Per Village



Appendix O: Kaingin Skewness and Kurtosis Test results of the entire land owners population

Statistics

Kaingin

1	N	Valid	72
		Missing	0
	Std. Error of Mean		5.650
	Std. Deviation		47.943
	Variance		2298.513
	Skewness		5.018
	Std. Error of Skewness		.283
	Kurtosis		25.074
	Std. Error of Kurtosis		.559
2	N	Valid	24
		Missing	0
	Std. Error of Mean		14.781
	Std. Deviation		72.412
	Variance		5243.433
	Skewness		2.013
	Std. Error of Skewness		.472
	Kurtosis		5.174
	Std. Error of Kurtosis		.918
3	N	Valid	22
		Missing	0
	Std. Error of Mean		28.856
	Std. Deviation		135.346
	Variance		18318.452
	Skewness		2.560
	Std. Error of Skewness		.491
	Kurtosis		6.004
	Std. Error of Kurtosis		.953

Appendix P: Kaingin Statistics of Kruskal Wallis Test of the entire land owners population

A non-parametric Lavene's test to test Variance Homogeneity

ANOVA

abs

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10194.453	2	5097.227	110.967	.000
Within Groups	5282.500	115	45.935		
Total	15476.953	117			

Comparison between zone 1 and zone 2

Ranks

	groups	N	Mean Rank
kaingin	1	72	43.69
	2	24	62.92
	Total	96	

Test Statistics[a,b]

	kaingin
Chi-Square	22.760
df	1
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: groups

Comparison between zone 2 and zone 3

Ranks

	groups	N	Mean Rank
kaingin	2	24	24.77
	3	22	22.11
	Total	46	

Test Statistics[a,b]

	kaingin
Chi-Square	.584
df	1
Asymp. Sig.	.445

a. Kruskal Wallis Test

b. Grouping Variable: groups

Comparison between zone 1 and zone 3

Ranks

	groups	N	Mean Rank
kaingin	1	72	44.51
	3	22	57.30
	Total	94	

Test Statistics[a,b]

	kaingin
Chi-Square	12.931
df	1
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: groups

Appendix Q: Kaingin Skewness and Kurtosis test results of the Kaingin owners population

Statistics

kaingin

1	N	Valid	3
		Missing	0
	Mean		233.33
	Median		200.00
	Std. Deviation		57.735
	Variance		3333.333
	Skewness		1.732
	Std. Error of Skewness		1.225
2	N	Valid	11
		Missing	0
	Mean		106.82
	Median		100.00
	Std. Deviation		72.535
	Variance		5261.364
	Skewness		2.041
	Std. Error of Skewness		.661
	Kurtosis		5.515
	Std. Error of Kurtosis		1.279
3	N	Valid	7
		Missing	0
	Mean		196.43
	Median		100.00
	Std. Deviation		182.819
	Variance		33422.619
	Skewness		1.048
	Std. Error of Skewness		.794
	Kurtosis		-.624
	Std. Error of Kurtosis		1.587

Appendix R: Kaingin Statistics of Kruskal Wallis test of the Kaingin owners population

A non-parametric Lavene's test to test Variance Homogeneity

ANOVA

abs

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	59053.983	2	29526.991	4392.445	.000
Within Groups	121.000	18	6.722		
Total	59174.983	20			

Comparison between Zone 1 and 2

Ranks

	groups	N	Mean Rank
kaingin	1	3	12.17
	2	11	6.23
	Total	14	

Test Statistics[a,b]

	kaingin
Chi-Square	5.185
df	1
Asymp. Sig.	.023

a. Kruskal Wallis Test

b. Grouping Variable:

Comparison between zone 2 and 3

Ranks

	groups	N	Mean Rank
kaingin	2	11	8.91
	3	7	10.43
	Total	18	

Test Statistics[a,b]

	kaingin
Chi-Square	.372
df	1
Asymp. Sig.	.542

a. Kruskal Wallis Test

b. Grouping Variable: groups

Comparison between zone 1 and 3

Ranks

	groups	N	Mean Rank
kaingin	1	3	6.67
	3	7	5.00
	Total	10	

Test Statistics[a,b]

	kaingin
Chi-Square	.656
df	1
Asymp. Sig.	.418

a. Kruskal Wallis Test

b. Grouping Variable: groups

Appendix S: Charcoal consumption Skewness and Kurtosis test results of the entire village population

Statistics

Appendix

charcoal

1	N	Valid	72
		Missing	0
	Std. Error of Mean		.42530
	Std. Deviation		3.60875
	Variance		13.023
	Skewness		2.382
	Std. Error of Skewness		.283
	Kurtosis		7.652
	Std. Error of Kurtosis		.559
2	N	Valid	20
		Missing	0
	Std. Error of Mean		.48990
	Std. Deviation		2.19089
	Variance		4.800
	Skewness		1.986
	Std. Error of Skewness		.512
	Kurtosis		3.836
	Std. Error of Kurtosis		.992
3	N	Valid	20
		Missing	0
	Std. Error of Mean		.48297
	Std. Deviation		2.15989
	Variance		4.665
	Skewness		2.054
	Std. Error of Skewness		.512
	Kurtosis		4.274
	Std. Error of Kurtosis		.992

Appendix T: Charcoal Consumption Statistics of Kruskal Wallis Test of the entire village population

A non-parametric Lavene's test to test Variance Homogeneity

ANOVA

abs

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16060.008	2	8030.004	32.041	.000
Within Groups	27317.500	109	250.619		
Total	43377.508	111			

Comparison between zone 1 and zone 2

Ranks

	zones	N	Mean Rank
charcoal	1	72	48.23
	2	20	40.28
	Total	92	

Test Statistics[a,b]

	charcoal
Chi-Square	1.701
df	1
Asymp. Sig.	.192

a. Kruskal Wallis Test

b. Grouping Variable:

Comparison between zone 2 and zone

Ranks

	zones	N	Mean Rank
charcoal	2	20	20.58
	3	20	20.43
	Total	40	

Test Statistics[a,b]

	charcoal
Chi-Square	.003
df	1
Asymp. Sig.	.960

a. Kruskal Wallis Test

b. Grouping Variable:

zones

Comparison between zone 1 and zone 3

Ranks

	zones	N	Mean Rank
charcoal	1	72	48.29
	3	20	40.05
	Total	92	

Test Statistics[a,b]

	charcoal
Chi-Square	1.825
df	1
Asymp. Sig.	.177

a. Kruskal Wallis Test

b. Grouping Variable:

zones

Appendix U: Charcoal consumption Skewness and Kurtosis test results of the Charcoal Consumers population

Statistics

charcoal

1	N	Valid	34
		Missing	0
	Mean		4.6512
	Median		4.0000
	Std. Deviation		4.03183
	Variance		16.256
	Skewness		1.807
	Std. Error of Skewness		.403
	Kurtosis		5.193
	Std. Error of Kurtosis		.788
2	N	Valid	6
		Missing	0
	Mean		4.0000
	Median		4.0000
	Std. Deviation		2.19089
	Variance		4.800
	Skewness		1.369
	Std. Error of Skewness		.845
	Kurtosis		2.500
	Std. Error of Kurtosis		1.741
3	N	Valid	6
		Missing	0
	Mean		3.9167
	Median		3.7500
	Std. Deviation		2.20038
	Variance		4.842
	Skewness		1.519
	Std. Error of Skewness		.845
	Kurtosis		2.859
	Std. Error of Kurtosis		1.741

Appendix V: Charcoal Consumption Statistics of Kruskal Wallis Test of of the Charcoal Consumers population

A non-parametric Lavene's test to test Variance Homogeneity

ANOVA

abs

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1282.163	2	641.082	10.019	.000
Within Groups	2751.423	43	63.987		
Total	4033.586	45			

Comparison between Zone 1 and Zone 2

Ranks

	zones	N	Mean Rank
charcoal	1	34	20.51
	2	6	20.42
	Total	40	

Test Statistics[a,b]

	charcoal
Chi-Square	.000
df	1
Asymp. Sig.	.985

a. Kruskal Wallis Test

b. Grouping Variable: zones

Comparison between Zone 2 and Zone 3

Ranks

	zones	N	Mean Rank
charcoal	2	6	6.75
	3	6	6.25
	Total	12	

Test Statistics[a,b]

	charcoal
Chi-Square	.065
df	1
Asymp. Sig.	.799

a. Kruskal Wallis Test

b. Grouping Variable: zones

Comparison between Zone 1 and Zone 3

Ranks

	zones	N	Mean Rank
charcoal	1	34	20.65
	3	6	19.67
	Total	40	

Test Statistics[a,b]

	charcoal
Chi-Square	.037
df	1
Asymp. Sig.	.848

a. Kruskal Wallis Test

b. Grouping Variable: zones

Appendix W: Budget Plan

Budget Plan Fieldwork North West Puerto Princesa				
Staff	Assistant	3	10,000	30,000
	GPS expert	3	2,500	7,500
Equipment	GPS	2	5,000	10,000
	Camera	1	8,000	8,000
	Binoculars	1	4,000	4,000
	Desktop	1	15,000	15,000
	Tent	1	5,000	5,000
	Other	1	20,000	20,000
Fieldwork	Travel	1	6,000	6,000
	Motorbike rental	1	10,000	10,000
	Gasoline	1	6,000	6,000
	food	1	15,000	15,000
	Other	1	10,000	10,000
	Subtotal			***146,500***

Appendix X: Time schedule

Date	Activity	Description	Duration
January/February	Thesis Application	To sent an application letter towards host companies which are concerned with subject	1 week
February/ March 2011	Literature Research	Formation of study subject, research on relevant reports	1 week
March 2011	Preparation Proposal	Defining Objectives, Research Questions, Methods, Expected Results	2 weeks
March 2011	Preparation for the field-work	Preparing travel equipment, adjusting contacts with host company, arrangement of necessary field equipment, look for possible funding schemes e.g.	4 weeks
April-July 2012	Implementation Research	Collection of data, Data entry, monitoring of the project, feedback to the Larenstein/Supervisor	3 months
July-August 2012	Data analysis	Analyze the data with statistics, present the results, formulate conclusions & discussions with additional recommendations	2 months
September 2012	Research presentation	Construct a sufficient report, Prepare a presentation with the research process, elevate the research with Larenstein	2 months