

5 APPENDIX

5.1 Table x. Files and archives sources used as supported material to the issue of charcoal production

Title	Author	Year	Type	Main subjects
Relatório das actividades do ano 2010	IDF/Bié	2011	Report	Records of data on charcoal production
Relatório das actividades do ano 2009	IDF/Bié	2010	Report	Records of data on charcoal production
Relatório das actividades do ano 2008	IDF/Bié	2009	Report	Records of data on charcoal production
Relatório das actividades do ano 2011	IDF/Bié	2012	Report	Records of data on charcoal production
Angola: NEPAD-CAADP Bankable Investment project profile	FAO/NEPAD	2005	Project report	Revitalization of forestry sector
Perfil Florestal de Angola	IDF/Luanda	2013	technical material	Situation of the national forest
Perfil Florestal de Angola	IDF/Luanda	2011	technical material	Jornads técnico-cienticas sobre florestas e segurança alimentar em Angola
Política nacional e estratégia de desenvolvimento de florestas e fauna selvagem e áreas de conservação	IDF/Luanda	2011	Diário da República	Jornads técnico-cienticas sobre florestas e segurança alimentar em Angola
Global forest resources assessment	FAO	2000	Report	Overview of forest in the world
Twapandula Angola	Chaloupkova et al.	2009	Publication	Experience with projects in Angola
Methodologia da criação integrada dos peixes e das aves em Angola, Província do Bié	Chaloupkova et al.	2009	Publication	Methodology

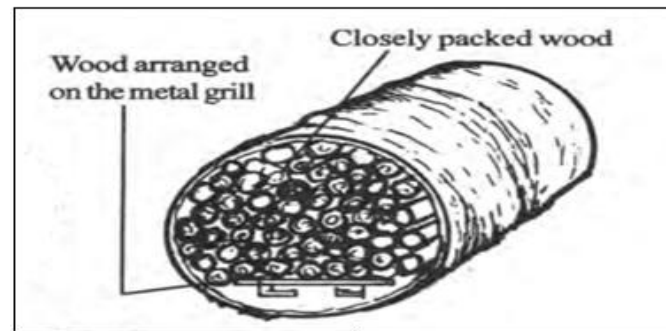
5.2 Appendix A. Types of kilns



1. Casamance kiln with chimney made of oil drums



2. Half orange kiln



3. Drum kiln system



4. Modern furnace for charcoal production with Van Marion system

5.3 Appendix B. Questionnaires

5.3.1 Questionnaires and table calculation

Table 8. Calculation of the profit for the normal producers

Nequilo (Avg.value of production)	Items	Unit (Kz)
	Charcoal: 31.7 bags/kiln; selling price at market =850 Kz	26,945
	Total value of production	26,945.00
	Packaging: 31.7 bags; packaging price = 100 Kz	3,170
	Field labour = household labour	0
	Total variable costs	3,170
	Gross margin per kiln (Kz)	23,775.00
Canjongo (Avg. Value of production)	Charcoal: 70 bags/kiln; selling price at market = 770 Kz	53,900
	Total value of production	
	Packaging: 70 bags; packaging price = 100 Kz	1,585
	Field labour = household labour	0
	Total variable costs	1,585
	Gross margin per kiln (Kz)	52,315.00
Etunda (Avg.value of production)	Charcoal: 25 bags/kiln; selling price at market = 1020 Kz	255,000
	Total value of production	25,500.00
	Packaging: 25 bags; packaging price = 100 Kz	2,500
	Field labour = household labour	0
	Total variable costs	2,500
	Gross margin per kiln (Kz)	23,000.00

Table X. parameters used to calculate deforestation in Bié

Period	Total charcoal produced (t)	Kiln efficiency (%)	Stock density of miombo	Year (2013-2014)	Month of observation	Deforestation (%)
2013	99470	19	76	12	4	10.3
2014	469	19	76	12	4	21.8

8.2.2 Questionnaire directed to producers of charcoal

Questionnaire directed to farmers who produced charcoal

General information;

Name _____

Village _____ Age _____ Male__

Female__

1. How long have been here (in this village)?

2. How many people live in your village?

3. How many children do you have?

4. How many of your children are studying?

5. What is your level of education?

- Primary school
 Secondary school
 High school
 University
 Others

6. Do you have any agriculture education?

- Yes
 Not
 Maybe
 Others

7. How far is your village from the provincial (or market) capital city?

3- 5 hours

6 -8 hours

9 - 11 hours

Other _____

8. Do you have electro domestics like;

- Radio
 Television
 Music recorder
 Other _____

9. What are the main sources of energy do you use for your electro domestics?

- Generator
 Battery
 Electricity

Other _____

House – made of wood, brick, concrete...

Agriculture

10. Are you a farmer?

Yes

Not

Other _____

11. How many hectare of agricultural land do you have?

12. How many people of your family work in work the field?

13. What are the products you cultivate?

14. What are the animals you create? How many?

- Cow
 Goat
 Chicken
 Others _____

How much land do you cultivate every year?

15. Except of you being farm do you produce or collect also charcoal and firewood?

- Yes
 Not
 Maybe
 Others _____

16. What do you do with the products you harvest from you field?

- Own consumption
 Sell
 Others _____

17. Which products do you sell annually on the market?

number	Product	Amount in kg/year	Price (per kg)	Place	Client
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

18. Do you make any processing of your agricultural products?

- Yes
 Not
 Sometime
 Others

19. What amount of the crop do you purchase (per year, per one purchase)?

Charcoal production

20. How often do you go to the forest?

21. Apart of charcoal and firewood what are other forest products you collect from forest?

22. How far is the forest from your house?

- 2 – 4 hours
 5-7 hours
 8 – 10 hours
 Others

23. How much time you spend in the forest?

24. What do you use to cock your mill?

- Firewood
 Charcoal

- Car
- Motorcycle
- Bicycle
- Others _____

35. Which season is more profitable for firewood and charcoal production?

- Rain season
- Dry season
- Both
- Others _____

36. How much of charcoal can you produce per day/week/month?

37. Do you collect also any other products from the forest?

- Yes
- Not
- What are them?
- Medicinal products....
- Fruits
- Honey
- Hunting
- Other _____

a) If yes. What are them?

38. How much do you spend on transport?

39. Is there any problem with the transportation to the market (during the year)?

- Yes
- Not
- Sometimes
- Other _____

Charcoal in the market

40. How much do you sell one bag of charcoal?

41. How many bags can you sell per day?

43. Which of these reasons led you to sell charcoal in this market? (Please consider every reason from 1 to 7. The highest value 7 is).

Reasons	1	2	3	4	5	6	7
Economic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professional career	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rentable business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

44. Who is the owner of the forest from where you get timber?

Your own forest	State	
Family forest	Village	
Company	Others _____	

45. How big is this forest?

Under 50 ha	1001 – 5000 ha	
51 – 200 ha	5001 – 10 000 ha	
201 – 500 ha	10 001 – 20 000 ha	
501 – 1000 ha	More than mentioned _____	

46. What are your plans for the future?

8.2.3 Questionnaire directed to transporters of charcoal

Questionnaire directed to transporters of charcoal

Age _____

Gender _____

Village _____

1. Are you from this village?

Yes

Not

Others _____

2. How long have been in this business (charcoal)?

3. Is it your business?

Yes

Not

Others _____

4. If not. Who is the owner? And what does he does?

5. How long does it take from this village to the market

6. How often do you transport charcoal?

7. How many bags of charcoal can you do carry?

8. How much do charge for one bag?

9. Who is the owner of this truck?

8.2.4 Traders: observation and interview

Table with records of small observation done in charcoal market 2013-2014

Week one	
Data	Activities (number of cars and charcoal bags transported
Monday 5.8.2013	5 trucks. First 150 bags, second 90 bags, third 100, fourth 58 bags, fifth 60 bags
Tuesday 6.8.2013	3 trucks. First 140 bags, second 60 bags, third 90 bags
Saturday	1 truck 200 bags
bicycles June	6 *3 =24 bags
Week two	
Data	Activities (number of cars and charcoal bags transported
Tuesday 13.8.2013	4 trucks. 1st 30 bags, 2nd 40 bags, 3rd 68 bags, 4th 150 bags
Wednesday 14.8.2013	1 truck. 30 bags
Friday	nothing
bicycles July	11*4=45
Week one 2013	
Data	Activities (number of cars and charcoal bags transported
Wednesday 24.7.2013	2 trucks. 30 bags. 80 bags. 3 bicycles. 9 bags
Friday 26.7. 2013	4 trucks. 20 bags, 15 bags, 49 bags, 50 bags
Week two 2014	
Monday 1.9.2013	2 trucks. 30 bags, 70 bags. 2 bicycles. 7 bags
Wednesday 3.9.2013	1 truck. 50 bags
Saturday 6.9.2013	3 trucks. 20 bags, 18 bags, 22 bags

2014

Week one	
Data	Activities (number of cars and charcoal bags transported
Monday 2014	5 trucks. First 150 bags, second 90 bags, third 100, fourth 58 bags, fifth 60 bags
Tuesday 2014	6 trucks. First 140 bags, second 60 bags, third 90 bags
Saturday	1 truck 200 bags
bicycles	12 *3 = 36
Week two	
Data	Activities (number of cars and charcoal bags transported
Tuesday 2014	4 trucks. 1st 40 bags, 2nd 40 bags, 3rd 68 bags, 4th 150 bags
Wednesday 2014	1 truck. 30 bags
Friday	nothing
bicycles	11*3=33
Week one 2014	
Data	Activities (number of cars and charcoal bags transported
Wednesday 2014	2 trucks. 32 bags. 10 bags. 3 bicycles. 9 bags
Friday 2014	4 trucks. 20 bags, 15 bags, 49 bags, 50 bags
Week two 2014	
	2 trucks. 36 bags, 70 bags. 2 bicycles. 7 bags
	1 truck. 51 bags
Saturday 2014	3 trucks. 20 bags, 18 bags, 22 bags

8.2.5 Questionnaire directed to consumers

Questionnaire directed to consumers of charcoal

Local _____

Gender _____

1. Do you use charcoal to cook your meals?

Yes

Not

Sometimes

Others _____

2. How often do you cook using charcoal

1 -3 times per day

2 -4 times per week

1-3 times per moth

Others _____

3. Where do purchase it?

4. How much do you buy it?

600 –1000 Kz

1100 – 1500 Kz

1600 – 2000 Kz

Others _____

5. Can you approximate how many bags of charcoal do you need per month?

Less than one bag

1-3 bags

4-7 bags

Others _____

6. How big is your household

2 – 4 people

5 – 7 people

8- 10 people

Others _____

7. Do you have any preference on the types of charcoal?

Yes

No

Others _____

8. If yes. Which types of charcoal do you prefer?

9. Do you use gas to cook you meals?

Yes

Not

Others _____

10. If yes. What for do you use charcoal?

11. Have you ever use eucalyptus charcoal?

Yes

No

Others _____

12. If yes. What is your opinion on eucalyptus charcoal?

13. What is your opinion on charcoal production related to forest degradation?

8.3 Appendix C. Illustration of the photos on charcoal value chain

Production of charcoal



Trade of charcoal



Transportation of charcoal



Consumption of charcoal



Farming activities



Data collection



Appendix D. Image of deforested area along the road side

