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## **Climbing the African energy ladder:**

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## Part 2 Fuel sources

	1. Can you tell me which fuels your household used for <b>cooking</b> over the last month?	2. Can you rank the importance of the fuels used for cooking? (Start with the fuel you use as your main cooking fuel and rank that with a 1, the 2 <sup>nd</sup> most important source 2 etc.)	3. How often does your household use [fuel]  Daily 1 Twice a week 2 Weekly 3 Seasonal 4 Other 5	4. What is the quantity of [fuel] used per week for cooking? (Find LPG usage per month all other fuels per week)  quantity unit	5. What is the estimated weight of a typical unit of [item] <b>(ask for fuel units 2,3,4,5,6)</b>	6. What is the average estimated amount of [fuel] used to cook 1 dinner?  quantity Unit
Fuelwood						
Charcoal						
Kerosene						
LPG						
Ethanol						
Electricity						
Other (specify)						

Unit: 1= litre, 2=Bunch, 3=bundle, 4=Piece, 5=Sack, 6=Tin, 7=Kilogram, 8=3kg cylinder,9= 6kg cylinder, 10=12.5 kg cylinder, 11=other (specify)

7. Why did your household choose [fuel] as your main cooking fuel? (refers to the fuel ranked nr 1 in question 2)  
 1=Affordability 2=Availability 3=Ease of use 4=Safety 5=No smoke 6=Taste of food 7=Other  
 (Specify)\_\_\_\_\_

**WOOD:** (Ask only if the respondent indicated the household uses wood as a fuel)

1. How do you obtain your firewood?  
 1=Fetch (question 2-6) 2=Purchase (question 7-11) 3= Fetch and purchase (2-11)

2. Who collects wood for use as a fuel in your household?

Women:	always:	sometimes:	never:
Girls:	always:	sometimes:	never:
Boys:	always:	sometimes:	never:
Men:	always:	sometimes:	never:
Others (specify):			

3.a Where do you fetch your firewood?  
 1=Boundary fences 2=Cropland 3=Woodlot 4=Roadside 5=Neighbour 6=Trustland 7=Gazetted forest

3.b What is the main source from which you fetch your firewood?\_\_\_\_\_

4. How far away from your house do members of your household usually have to go to gather fuel wood?  
 One way distance in km\_\_\_\_\_

5. How often does your household gather wood per week for cooking?  
 1=Every day 2=Every two days 3=Bi-weekly 4=Weekly 5=Other (specify)\_\_\_\_\_

6. How much time does your household spend each week collecting fuel wood?  
 \_\_\_\_\_Hours per week

7. What are the reasons for buying fuel wood? (more than one reason can be selected)  
 1=Lack of availability 2=Faster than gathering it 3=Better quality 4=Other(please specify)\_\_\_\_\_

8. Who in your household is responsible for purchasing fuel wood?  
 1= Adult males 2=Adult females 3= Both 4=Other (specify)\_\_\_\_\_

9. What share of fuel wood used for cooking is purchased?\_\_\_\_\_

10a. What price did your household pay on average for fuelwood per unit?  
 Price \_\_\_\_\_  
 Unit (Bundle / Bunch / Stick)

10b. How much does your household spend in total on firewood per week? \_\_\_\_\_

11. Where does your household go to purchase fuel wood?  
 1=Vendor delivers to house 2=At the road side 3=Local market 4=Market in the district capital  
 5=Other (specify)\_\_\_\_\_

**CHARCOAL/KEROSENE/LPG/Ndzilo** (Ask only if the respondent indicated the household uses charcoal/ kerosene/ Ndzilo<sup>18</sup> or LPG)

12. What is the main reason for buying [charcoal/kerosene/Ndzilo/LPG]?

1=Replace firewood 2= availability 3= saves time 4=Cleaner 5=Ease of use 6=Price 7=Other (specify)\_\_\_\_\_

13. Who in your household is responsible for purchasing [charcoal/kerosene/Ndzilo/LPG]?

1=Adult male 2=Adult female 3=Other (specify)\_\_\_\_\_

14. What price does your household on average pay for a unit of [charcoal/kerosene/Ndzilo/LPG]? \_\_\_\_\_ [Liter, Kilogram, Sack, 3kg cylinder, Tin, 6kg cylinder, 12.5kg cylinder, Other (Specify)

15. Where does your household buy [charcoal/kerosene/LPG]?

1=Vendor delivers to the house 2=At the road side 3=Local market 4=Market in division capital 5=Other (specify)\_\_\_\_\_

16a. Is [charcoal/kerosene/LPG] always available when you want to buy it?

1=Yes 2= No

16b. If it is not available how do you respond?

1=Try other markets 2=Use other fuel 3=Other (specify)\_\_\_\_\_

### Part 3 Stove Information

42. What types of stoves are present in the household? (Please also list stoves that you own but are not using)	43. How old is the stove? (indicate in years)	44. How much did you pay for this stove (Ksh)?  (when received free of cost, indicate 0)	45. What feature if any of the [stove] do you like most?	46. What feature of the [stove] do you like least?
			Use less fuel 1	Unsafe 1
			Cooks quick 2	Smoke 2
			Low levels of smoke 3	Taste of the food 3
			Ease of use 4	Cooks slow 4
			Keeps the house warm 5	Costly 5
			Good taste of food 6	Uses a lot of fuel (inefficient) 6
			Can use many sizes of pots 7	Doesn't heat the house 7
			Control heat easily 8	Low quality (easily breaks down) 8
			Ignite easily 9	Complicated to use 9
			Nothing 10	Difficult to control heat 10
Other (specify) 11	Nothing 11			
			Other (specify) 12	

47. Which of your stoves do you use for ..... (list **all** the stoves present in the household)

\_\_\_\_\_

<sup>18</sup> Ndzilo was only included in the Mozambican version of the questionnaire.

Stove ID/name	Cooking	Warming-up food	Water boiling	Other (specify)	Not in use

a. If more than one stove per task, which stove do you use as main stove for the individual tasks?

Cooking		Warming up		Water Boiling	
---------	--	------------	--	---------------	--

48. If an ICS is present but not in use, why is the Improved Cookstove not in use?

**3 stone (Ask only if the respondent indicated that the household uses a 3 stone stove)**

49. How do you tend your cooking fire?

- 1 =Make one large fire every morning and leave it burn until extinguished
- 2 =Maintain a constant fire all day
- 3 =Douse embers after every meal is cooked and prepare new fire as needed
- 4 =Other (explain)

50. When you cook, do you do other things at the same time or do you focus only on cooking?

- 1=Only cook
- 2=Talk with friends/family
- 3=Clean or do other housework
- 4=Go to the market
- 5=Tend children
- 6=Do income-generating work
- 7=Other

**If no ICS is present,**

51. DO you know improved cookstoves? Which ones? \_\_\_\_\_

52. How have you heard about the ICS or where have you seen it

- 1= Radio
- 2=Brochure, leaflet
- 3=NGO or Ministry of Agriculture
- 4=Producers, installers, marketing group
- 5=TV
- 6=Friends, family, neighbours
- 7=Market
- 8=Other

53. Why don't you have an improved cookstove

- 1=High costs
- 2=Lack of information
- 3=No availability
- 4=Satisfied with my stove
- 5=Other (specify)

54. Do you think an improved cookstove could replace your traditional woodstove?  
(Please explain why)

**Improved cook stoves + modern cook stoves** (Ask only if the respondent indicated that the household owns an improved cook stove + modern cook stoves), Make sure you ask for each stove belonging to this category)

S T O V E	55. Who in your household made the decision to buy [stove]	56. How have you heard about the ICS or where have you seen it?	57. Do you maintain your ICS ?	59. Could you indicate how the cook stove has affected your health	60. If you think about the time you spend in cooking as a result of the new cookstove do you need	61. Does the stove meet your prior expectations before you bought it?
	Husband 1 Wife 2 Together 3 Other 4	Radio 1 Brochure 2 NGO/Ministry of agriculture 3 Producers, installers 4 TV 5 Friends/family 6 Market 7 Other 8	Yes 1 No 2  <b>If yes please indicate how</b>	Don't know 1 Worse than before 2 No changes 3 Better than before 4	A lot less time 1 A bit less time 2 About the same time 3 A bit more time 4 A lot more time 5	Yes 1 No(explain) 2

## Part 4 Cooking information

65. During dry season where do you cook usually?

- 1=In a room used for living/sleeping
- 2=In a separate room used as kitchen
- 3=In a separate building used as kitchen
- 4=Outdoors
- 5=Other (specify)

66. During rainy season where do you cook usually?

- 1=In a room used for living/sleeping
- 2=In a separate room used as kitchen
- 3=In a separate building used as kitchen
- 4=Outdoors
- 5=Other (specify)

67. What type of ventilation is present where the stove is used?

- 1=Closed room / no ventilation
- 2=Room with eave spaces
- 3=Room with permanent ventilation in the roof
- 4=Room with open windows
- 5=Room with three or fewer walls
- 6=Chimney
- 7=Other (specify)

68. What time is spent on cooking per day in your household?

- 1)breakfast
- 2)Lunch
- 3)Dinner
- 4)Other

69. Is there anything you do to speed up cooking time or reduce the amount of fuel used to cook?

## Part 5 Awareness (individual question men and women) (Kenya only)

70. How do you rate the level of smoke from burning firewood in a 3 stone cook stove (1 is very low and 5 is very high)    1    2    3    4    5

71.a Do you think cooking smoke affects the health of women or children?

- 1=Yes 2=No 3=Don't know

71.b If yes, how does smoke affect health?

72. Do you think cooking smoke causes:

- 1= Yes definitely 2=Maybe 3=No definitely not 4=Don't know

	Women's health	Children's health
Cough		
Headache		
Shortness of breath		
Chest Illness		



73. How concerned are you about the effects of cooking smoke on:  
a. Yourself: Very concerned/somewhat concerned/not concerned at all  
b. Your partner: Very concerned/somewhat concerned/not concerned at all  
c. Your children: Very concerned/somewhat concerned/not concerned at all

74. Did your household receive information on the health impact of smoke from firewood and/or charcoal? 1=Yes 2=No

If yes, from whom? \_\_\_\_\_

75. Have you witnessed any changes in the availability of fuelwood over the last 10 years in the area where your household is residing? 1=Yes 2=No (>>78)

76. Could you indicate which changes you have witnessed?

77. How does your household respond to these changes?

1=Does not respond to these changes 2=Responds in the following way(s):

78. Does your household plant trees on your land for later use as fuel?

1=Yes 2=No

79. What is the most important reason for your household not to plant trees on your land for the provision of fuel wood?

1=Lack of space 2=Land is not owned 3=fuel wood is plenty in the surrounding 4=Didn't consider  
5=Can't afford seedling 6=Do not use wood 7=Other(specify)

## **Part 5 Awareness and health (Mozambique only)**

70. How is the air quality in your house?

1=good 2=bad

71. Do you think the smoke from the stove is in any way beneficial?

1= Yes 2=No

72. Why do you think the smoke from the stove is in any way beneficial?

73. How do you rate the level of smoke from burning fire wood in a 3 stone cook stove (1 is very low and 5 is very high)

74. How do you rate the level of smoke from burning charcoal (1 is very low and 5 is very high)

75. Are you bothered by smoke emitted when you cook?

1= yes 2=No 3=Do not know

76. Do you think the smoke from the stove has an effect on primary cook's health?

1=Yes 2=No 3=Don't know

77. What type of health problems may occur? **(Multiple answer)**

1= Eye problem 2=Cough 3=Chest illness 4=Shortness of breath 5=Headache 6=Backache  
7= Other \_\_\_\_\_

78. Did your household receive information on the health impact of smoke from firewood and/or charcoal?

1= Yes 2=No

If yes, from whom? \_\_\_\_\_

**Only for respondents who do not use LPG**

79. Why don't you use LPG?

80. Can you name the benefits of using LPG

81. Do you know where you can buy LPG?

82. How do you rate the safety level of using LPG (1 is low and 5 is high)

**Only for respondents who do not use Ndzilo**

83a. Do you know Ndzilo?

83b. How were you informed about Ndzilo

84. Why don't you use Ndzilo

85. How do you rate the safety level of using NDZILO (1 is low and 5 is high)

**Part 6: Household characteristics**

1. What was the total income of the household during the last 12 months? \_\_\_\_\_

2. Does the Household own any of the following assets? Yes=1 No=2

Bicycle		TV	
Motorbike		Generator	
Mobile Phone		Fridge	
Radio		Solar panel	
Car		Iron	

Before asking question 4, observe and note the following.

4. What type of dwelling does the household reside in?

1=Detached house 2=Multi-family house 3=Separate apartment 4=Communal apartment

5=Improvised housing unit 6=Room in a larger dwelling 7=Other (Specify) \_\_\_\_\_

5. What is the major material of the roof?

1=Thatch 2=Metal sheets 3=Tiles 4=Other (specify) \_\_\_\_\_

6. What is the major construction material of the external walls?

1=Mud/Animal dung 2=stone/cement 3=wood 4=Ironsheet

7. What is the tenure status of the dwelling?

1=Owned 2= Rental 3=Other (specify)

8. How many rooms does your house count? (Do not count bathrooms, balconies and corridors) \_\_\_\_\_

9. Is the house connected to the electricity grid?

1=Yes 2=No

10. What is the main source of lighting in your dwelling?

1=Electricity 2=Kerosene/oil/gas lamps 3=Candles 4=Battery flashlight 5=no lighting 6=Solar lamp

11. Main source of drinking water of the household

1=Private connection to pipeline 2=Private well 3=Public well 4=Borehole 5=River/stream/lake/pond  
6=Other (specify) \_\_\_\_\_

12. What is the ethnic background of the household head?<sup>19</sup>

1=Agkuyu 2=Kalenjin 3=Jaluo 4=Luyha 5=Kissii 6=Akamba 7=Other (specify) \_\_\_\_\_

13. What is the religious affiliation of the head of the household?

1=Christian 2=Muslim 3=None 4=Other (specify) \_\_\_\_\_

14. Does your household attend community meetings on a regular basis

1=Yes 2=No

15. How long has your household lived in this location?

Number of years \_\_\_\_\_

16. Why did your household move here?

1=Natural resources 2=Look for work 3=Available land 4=Retirement 5=Born here 6=Reallocation program 7=Other (specify) \_\_\_\_\_

## Part 7 Income

104. During the past 12 months, has anyone in your household operated any non-agricultural enterprise which produces goods or services or has anyone in your household owned a shop or operated a trading business? 1=Yes 2=No (>question 108)

105. What kind of enterprise does your household operate?	106. Who is in charge of day to day operations of the enterprise?	107. What is the income generated with sales over the last <b>month</b> ?	107a. How many months did you operate this business over the last year?
	Use ID code		

108.

During the past 12 months have you worked for anyone who is not a member of your household, for example, an enterprise, company, the government or any other individual?

1= Yes 2=No (>question 113)

109. What did you do?	110. Who in your household was employed?	111. What is the income generated through this work per <b>month</b>	112. How many months are you employed per year?

<sup>19</sup> Only included in the Kenyan questionnaire

113.

Does your households have other sources of income not mentioned before such as remittances or government allowance?

Please indicate how much you received over the last 12 months \_\_\_\_\_

114. Over the past 12 months, has anyone in your household farmed on agricultural land on the household his own account?

1=Yes 2=No

115. What was the average income generated from crop production?

116. Has any member of your household raised or owned any animals over the past 12 months?

Yes.....1

No.....2 (>> next section)

117. What was the average income generated from livestock sales?

### Choice experiment answer card

Household interview number:

Type:

Version:

Choice card	1	2	3	4	5	6
Answer						

### Questions

1. Which characteristics did you consider while making your decision? (multiple answers possible)
 

1) I consider all characteristics	4) Environmental impact
2) Cost of cooking	5) Health impact
3) Reduction in cooking time	6) Cost of purchasing the stove
  
2. Was there a characteristic that you considered unimportant?
 

Yes, specify.....

No
  
3. How difficult was it for you to make the choices?
 

1)Very easy	3) Not easy/not hard Difficult
2)Easy	4)Difficult
  
4. Why was it difficult?