### Appendix Selection of relevant parts of the household questionnaire

**Part 1 General household characteristics**

<table>
<thead>
<tr>
<th>1. List all household members.</th>
<th>2. Who is the respondent?</th>
<th>3. Is [name] male or female?</th>
<th>4. What is the relationship of [name] to the head of the household?</th>
<th>5. How old is [name]?</th>
<th>6. What is the present marital status of the head of the household?</th>
<th>7. What is the highest level of education completed by [Name]?</th>
<th>8. What is the main economic activity of your household?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start with the head of the household and his or her immediate family and then the extended family.</td>
<td>M 1  F 2</td>
<td>Head 1</td>
<td>Spouse 2</td>
<td>Child 3</td>
<td>Grandchild 4</td>
<td>Brother/sister 5</td>
<td>Niece/nephew 6</td>
</tr>
</tbody>
</table>
## Part 2 Fuel sources

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

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?

<table>
<thead>
<tr>
<th></th>
<th>always:</th>
<th>sometimes:</th>
<th>never:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (specify):</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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\(^{18}\) 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

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

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

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\(^{18}\) Ndzilo was only included in the Mozambican version of the questionnaire.
<table>
<thead>
<tr>
<th>Stove ID/name</th>
<th>Cooking</th>
<th>Warming-up</th>
<th>Water boiling</th>
<th>Other (specify)</th>
<th>Not in use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Cooking</th>
<th>Warming up</th>
<th>Water Boiling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)

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**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

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

1 2 3 4

A lot less time
A bit less time
About the same time
A bit more time
A lot more time
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  3)Dinner
2)Lunch  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

<table>
<thead>
<tr>
<th></th>
<th>Women’s health</th>
<th>Children’s health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cough</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortness of breath</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest Illness</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

156
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

<table>
<thead>
<tr>
<th>Bicycle</th>
<th>TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorbike</td>
<td>Generator</td>
</tr>
<tr>
<td>Mobile Phone</td>
<td>Fridge</td>
</tr>
<tr>
<td>Radio</td>
<td>Solar panel</td>
</tr>
<tr>
<td>Car</td>
<td>Iron</td>
</tr>
</tbody>
</table>

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

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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?19
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=Moslim 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)

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

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)

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>109. What did you do?</td>
<td></td>
</tr>
<tr>
<td>110. Who in your household was employed?</td>
<td></td>
</tr>
<tr>
<td>111. What is the income generated through this work per month?</td>
<td></td>
</tr>
<tr>
<td>112. How many months are you employed per year?</td>
<td></td>
</tr>
</tbody>
</table>

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19 Only included in the Kenyan questionnaire

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113. Does your household 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's 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:

<table>
<thead>
<tr>
<th>Choice card</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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?