

## EPPSA/PEER

# Impacts of Improved Cookstove Interventions on Human Welfare and Energy Use Patterns of Urban Households in Lusaka, Zambia

## HOUSEHOLD SURVEY (July - August 2019)

### HOUSEHOLD IDENTIFICATION (*outside household*)

A1	Compound		
A2	Date of interview		Day/month/year
A3	Interviewer ID/Name of Enumerator		1= 2= 3= 4= 5= 6= 7= 8= 9= 10= 11= 12= <b>99=Other interviewer, specify</b>
<b>A4</b>	Supervisor ID/Name of Supervisor		1= 2= 3= 4= <b>99=Other supervisor, specify</b>
A5	Household ID		
A6	Re-enter household ID		
A7	Survey round ( <i>default to 1 for baseline</i> )		1=Baseline (2019) 2=Endline (2020)
A8	Cookstove intervention and sample		1=Supamoto users 2=VITALITE users 3=Supamoto nonusers 4=VITALITE nonusers
<b>A8a</b>	<b><i>Is this a CO household?</i></b>		0=No 1=Yes
<b>A8b</b>	<b><i>Is this a PM household?</i></b>		0=No 1=Yes
A9	GPS Coordinates (Latitude, Longitude, Altitude)		

A10	<b><i>What was the phone number provided by your supervisor for this household?</i></b>		<b><i>Numbers only, no spaces or punctuation Must start with zero ('0'). If no number, enter ALL '0'.  Number must be 10 digits (including 0 as first number).</i></b>
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#### **HOUSEHOLD IDENTIFICATION (*inside household*)**

<b>Attempt #1</b>			
Ai1	Availability of main respondent and primary cook		1=Main respondent and primary cook both consented>>Ai4 2=Main respondent and primary cook did not consent>>Terminate survey 3=Main respondent and/or primary cook are ineligible to consent>>Terminate survey 4=Main respondent and /or primary cook are currently unavailable>>Ai1a 5=No one was home>>Ai1b
Ai1a	Please schedule a date and time of when you can return for follow-up		Hint: Also, please call your supervisor  Date-time
Ai1b	Please call your supervisor to reschedule		
Ai1c	Determined date and time of when you will return for follow-up		Date-time
<b>Attempt #2</b>			
Ai2o	Date of return attempt #2		Date
Ai2	Availability of main respondent and primary cook		1=Main respondent and primary cook both consented>>Ai4 2=Main respondent and primary cook did not consent>>Terminate survey 3=Main respondent and/or primary cook are ineligible to consent>>Terminate survey 4=Main respondent and /or primary cook are currently unavailable>>Ai2a 5=No one was home>>Ai2b
Ai2a	Please schedule a date and time of when you can return for follow-up		Hint: Also, please call your supervisor  Date-time
Ai2b	Please call your supervisor to reschedule		
Ai2c	Determined date and time of when you will return for follow-up		Date-time
<b>Attempt #3</b>			
Ai3o	Date of return attempt #3		Date
Ai3	Availability of main respondent and primary cook		1=Main respondent and primary cook both consented>>Ai4

			2=Main respondent and primary cook did not consent>>Terminate survey 3=Main respondent and/or primary cook are ineligible to consent>>Terminate survey 5=No one was home>>Terminate survey
Ai3a	Please call your supervisor to inform them you're unable to survey this household		
Ai4	Do the main respondent and primary cook consent to the main household survey?		0=No (Call supervisor to inform them the household did not consent)>>Terminate Survey 1=Yes
Ai5	Do you currently own a Mimimoto stove purchased from Supamoto? (only if A8=1)		0=No 1=Yes>>Ai9
Ai5a	Have you ever owned a Mimimoto stove purchased from Supamoto? (only if Ai5=0)		0=No>>Terminate survey 1=Yes
Ai6	Do you currently own an EcoZoom stove purchased from VITALITE? (only if A8=2)		0=No 1=Yes>>Ai9
Ai6a	Have you ever owned an EcoZoom stove purchased from VITALITE? (only if Ai6=0)		0=No>>Terminate survey 1=Yes
Ai7	Have you ever owned a Mimimoto stove purchased from Supamoto? (only if A8=3)		0=No 1=Yes>>Terminate survey
Ai8	Have you ever owned an EcoZoom stove purchased from VITALITE? (only if A8=4)		0=No 1=Yes>>Terminate survey
Ai9	Name of Main Respondent		First name Last name
Ai9o	Age of main respondent		Years
Ai9a	Mobile Number of Main Respondent		
Ai9b	Preferred language of Main Respondent		1=Nyanja 2=Bemba 3=English 99=Other, specify
Ai9c	Years of residence in compound for main respondent		Years
Ai9d	Was the main respondent born in Lusaka?		0=No 1=Yes
Ai9e	Was the main respondent born in the compound? (only if A10=1)		0=No 1=Yes
Ai10	Is the main respondent also the primary cook of the household?		0=No 1=Yes>>
Ai11	Name of Primary Cook		
Ai11o.	Age of primary cook		
Ai11a	Mobile Number of Primary Cook		
Ai11b	Preferred language of Primary Cook		1=Nyanja 2=Bemba 3=English

			99=Other, specify
Ai11c	Does the primary cook live in the household?		0=No 1=Yes
Ai12	Does the household consent to CO monitoring? (Ask only if they are originally a CO household, primary cook lives in the household, and primary cook is 15 years or older)		0=No 1=Yes>>Ai14
Ai13	Does the household consent to PM/SUMS monitoring? (Ask only if they are originally a PM/SUMS household, primary cook lives in the household, primary cook is 18 years or above, and consented to CO monitoring)		0=No 1=Yes>>Ai15
Ai14	Please remember to complete the CO monitoring portion of this survey.		
Ai15	Please remember to complete the PM/SUMS monitoring portion of this survey.		

# HOUSEHOLD ROSTER

B0	B1	B2	Note	B3	B3a	B4
Member ID Number (PID)	Start by listing name, age, and relationships of the head of household, the main respondent and the primary cook (regardless of whether she lives with the household). Then ask: please give me the names of all other persons who usually live with this household. Start with the head of household and include visitors who have lived with the household for six months or more. Include usual	Is [NAME] male or female?  1=Male 2=Female	<b>Are there exactly [male_count] male(s) and [female_count] female(s) in your household?</b>  0=No>> Enumerator: Please go back and add another household member. 1=Yes>> Please continue to next section of Module B.	How old is [NAME] now?  <b>Record exact age in completed years for those aged 5 years and above. For those 0 to 59 months old, record the age in months.</b>  <b>(Specify age code)</b>		What is the relationship of [NAME] to the household head?  1=Household head 2=Spouse 3=Biological child 4=Step child 5=Adopted child 6=Grandchild 7=Brother/sister 8=Cousin 9=Niece/Nephew 10=Brother/sister in-law 11=Parent 12=Parent in-law 13=Other relative/friend <b>14= Cook, maid, nanny, or other staff member</b>

	members, who are away visiting, in hospital, at boarding schools or college, university, etc. (First name Last name)					
				Age	1=Years 2=Months	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
	<b>B5</b>	B6		B7	B8	

Member ID Number (PID)	Is [NAME] currently attending school? (including those in colleges and universities)  0=No>> <b>B7</b> 1=Yes, nursery/pre-school 2=Yes, other grades full time 3=Yes, other grades part time 4=Yes, community school full time 5=Yes, correspondence 6=Yes, adult literacy class>>B8 7=Yes, tertiary school <b>99=Yes, other (specify)</b>  For those ages 3 and above	What grade/level of education is [NAME] currently attending?  0=Nursery/pre-school 1=1 2=2 3=3 4=4 5=5 6=6 7=7 8=8 9=9 10=10 11=11 12=12 13=12 GCE 14=College 15=Undergraduate university students 16=Post-graduate certificate/diploma students 17=Masters degree student 18=Doctoral and above students  For those ages 3 and above	Has [NAME] ever attended school?  0=No>> <b>B9</b> 1=Yes  For those ages 3 and above	What was the highest grade [NAME] attained?  0=Nursery/pre-school 1=1 2=2 3=3 4=4 5=5 6=6 7=7 8=8 9=9 10=10 11=11 12=12 13=12 GCE 14=College 15=Undergraduate university students 16=Post-graduate certificate/diploma students 17=Masters degree student 18=Doctoral and above students -888= Don't know  For those ages 3 and above
1				

2				
3				
4				
5				
6				
7				
8				
9				
10				

For those ages 15 and above				
Member ID Number (PID)	B9	B10	B11	B12
ID	What is the marital status of [NAME]?  1=Never married 2=Married (monogamous) 3=Married (polygamous) 4=Separated 5=Divorced 6=Widow/widower 7=Co-habiting	How long has this person lived in the CITY of Lusaka for?  Years  <i>If fewer than 12 months record as 0</i>	If in-migrant ( <b>B10&lt;B3(years)</b> ), where did [NAME] previously live?  District name  Country if not within Zambia	If in-migrant, ( <b>B10&lt;B3 (years)</b> ) what was [NAME]'s main reason for migrating to Lusaka?  1=For school 2=Back from school/studies 3=To seek work/business 4=To start work/business 5=Transfer of head of household 6=Death of parent/guardian 7=Got married 8=New household 9=Retirement 10=Retrenchment 11=Decided to resettle 12=Acquired own/different accommodation 13=Refugee/asylum seeker 14=Family move -88=Don't know





	<b>B13</b>	<b>B14</b>	<b>B15</b>	<b>B16</b>	<b>B17</b>
Member ID Number (PID)	<p>What is [NAME'S] main current economic activity status?</p> <p>1=Salary employment 2=Wage employment 3= Running a business/self-employed (non-farm) 4= Farming/fishing/forestry 5= Piecework 6= Unpaid family worker &gt;&gt;<b>B15</b> 7= Not working &gt;&gt;<b>B15</b> 8= Full time student &gt;&gt;<b>B15</b> 9= Retired &gt;&gt;<b>B15</b> <b>99= Other, specify</b></p>	<p>What is [NAME'S] employment status?</p> <p><b>Only if B13 !=8, 9</b></p> <p>1= Self employed 2= Central government employee 3= Local govt/council employee 4= Parastatal/quasi-govt employee 5= Private sector employee 6= NGO employee 7= International organization/embassy employee 8= Household employee</p> <p><b>99=Other, specify</b></p>	<p><b>Did [NAME] receive in grants and assistance (both cash and in-kind, e.g. from PWAS, NGOs, church groups, scholarships) last month?</b></p> <p><b>0=No</b> <b>1=Yes</b> <b>-888= Don't know</b></p>	<p>Is [NAME] engaged in any aspect of the charcoal business?</p> <p>0=No&gt;Next module 1=Yes</p>	<p>What aspect of the charcoal sector is [NAME] engaged in?</p> <p>1=Retail sale/vendor 2=Wholesale 3=Trader/Middleman 4=Transporter 5=Producer <b>99=Other, specify</b></p>
1					
2					
3					
4					

5					
6					
7					
8					
9					
10					

**COOK STATUS, HEALTH STATUS and TIME USE**

<b>Bi1</b>	Did [PRIM COOK] experience an illness with a <b>cough</b> at any time in the <b>last 14 days</b> ?		0=No>> <b>Bi2</b> 1=Yes
<b>Bi1a</b>	Did [PRIM COOK] <b>breathe faster than usual or have difficulty breathing</b> in the <b>last 14 days</b> ?		0=No 1=Yes
<b>Bi1b</b>	Did [PRIM COOK] experience a <b>blocked or runny nose</b> in the <b>last 14 days</b> ?		0=No 1=Yes
<b>Bi2</b>	Did [PRIM COOK] experience <b>eye irritations</b> or eye problems during the <b>last 14 days</b> ? (e.g., burning or itchy eyes; sticky eyes)		0=No 1=Yes
<b>Bi3</b>	Did [PRIM COOK] experience <b>headaches</b> during the <b>last 14 days</b> ?		0=No 1=Yes
<b>Bi4</b>	Did [PRIM COOK] experience <b>dizziness</b> during the <b>last 14 days</b> ?		0=No 1=Yes
<b>Bi5</b>	Did [PRIM COOK] experience <b>forgetfulness</b> during the <b>last 14 days</b> ?		0=No 1=Yes
<b>Bi6</b>	Did [PRIM COOK] experience <b>major burns</b> * related to cooking during the <b>last 14 days</b> ?		0=No 1=Yes  *wound or scar larger than a Fanta bottle top
<b>Bi7</b>	Other than cough, eye problems, headache/dizziness/forgetfulness or burns, has [PRIM COOK] been sick or injured in the last 14 days?		0=No>> <b>Bi9</b> 1=Yes, sick 2=Yes, injured 3=Yes, both -888=Don't know>> <b>Bi9</b>
<b>Bi7a</b>	What was [PRIM COOK] mainly suffering from?		1=Fever/malaria 3=Tuberculosis (TB) 4=Asthma 5=Bronchitis pneumonia/chest pain 6=Diarrhoea 7=Vomiting 8=Abdominal pains 9=Skin rash/skin infection 10=Paralysis of any kind 11=Hypertension 12=Diabetes/sugar disease 14=Toothache/mouth infection 16=Backache

			17=HIV/AIDS <b>99=Other, specify</b>
<b>Bi7b</b>	In the last 14 days, did [PRIM COOK] consult any health clinic, doctor, pharmacy or other persons for this illness/injury or did he/she only use self administered medicine?		1=Consulted 2=Self administered medicine 3=None of the above>> <b>Bi9</b>
<b>Bi8</b>	How much in total was spent on [PRIM COOK's] medication and consultation in the <b>last 14 days?</b> <i>(Include in cash and in kind)</i>		Kwacha  <b>Enter '0' if none</b>
<b>Bi9</b>	Did [PRIM COOK] experience <b>major burns*</b> related to cooking during the <b>last 12 months?</b>		0=No 1=Yes  *wound or scar larger than a Fanta bottle top
<b>Bi10</b>	Has [PRIM COOK] been continuously ill for at least 3 months in the last 12 months?		No=0>>Bi11 Yes=1
<b>Bi10a</b>	What was [PRIM COOK] mainly suffering from?		1=Fever/malaria 2=Cough/cold/chest infection 3=Tuberculosis (TB) 4=Asthma 5=Bronchitis pneumonia/chest pain 6=Diarrhoea 7=Vomiting 8=Abdominal pains 9=Skin rash/skin infection 10=Paralysis of any kind 11=Hypertension 12=Diabetes/sugar disease 13=Eye infection 14=Toothache/mouth infection 15=Headache/dizziness/forgetfulness 16=Backache 17=HIV/AIDS <b>99=Other, specify</b>
<b>Bi11</b>	How many hours did [PRIM COOK] spend <u>collecting water</u> in the past 24 hours?		*0-24

Bi12	How many hours did [PRIM COOK] spend <u>cooking (including meal preparation, active cooking, and serving food)</u> in the past 24 hours?		*0-24
Bi13	<p>How many hours did [PRIM COOK] spend managing <u>the stove</u> in the <u>past 24 hours</u>?</p> <p><b><i>Hint: Please explain to the respondent that “managing” refers to directly tending the stove in a manner that requires close proximity to the stove, e.g. standing over the stove or sitting near it.</i></b></p>		*0-24
Bi14	How many hours did [PRIM COOK] spend cleaning pots in the past 24 hours?		*0-24
Bi15	How many hours did [PRIM COOK] spend <u>shopping for food</u> in the <u>past 24 hours</u> ?		*0-24

# HOUSEHOLD CHARACTERISTICS AND FACILITIES

<b>C1</b>	What best describes the residential setting of this household?		1=Single household dwelling in plot 2=Single household dwelling in a plot with other household dwellings 3=Single level flat/multiple family building 4=Multiple level flat/multiple family building <b>99=Other, specify</b>
C2	How many rooms are there in the primary dwelling?		Number (excluding the toilet, bathroom, and store)
C3	<b>On what basis does your household occupy the dwelling you live in? Is it....</b>		<b>1=Owner occupied&gt;&gt;C5</b> <b>2=Rented from government&gt;&gt;C4</b> <b>3=Rented from private person&gt;&gt;C4</b> <b>4=Provided by employer</b> <b>5=Family home that you live in (at no cost)</b> <b>99=Other, specify</b>
C4	<b>How much rent do you pay per month? (Ask only if C3=2 or C3=3)</b>		<b>Kwacha (0-100,000)</b>  <b>-888= Don't know</b>
C4a	Does this rent include charges for electricity?		0=No 1=Yes
C4b	Does this rent include charges for water?		0=No 1=Yes
<b>C5</b>	<b>If owner occupied, if you were to rent out this house, how much would it fetch per month (excluding water and electricity)? (Ask only if C3=1 or 5)</b>		<b>Kwacha (0-100,000)</b>  <b>-888= Don't know</b>
<b>C6</b>	What is the roofing material of the primary dwelling made of?		1=Tiles 2=Iron sheets 3=Grass/straw/thatch 4=Concrete <b>99=Other, specify</b>
<b>C7</b>	What are the walls of the primary dwelling made of?		1=Pan brick 2=Concrete brick 3=Mud brick 4=Burnt brick 5=Pole 6=Mud 7=Grass/straw 8=Iron sheets 9=Steel 10=Hardboard <b>99=Other, specify</b>
C8	What is the floor of the primary dwelling made of?		1=Concrete

			2=Mud 3=Wood 4= Tiles 99=Other, specify
C10	What is your main drinking water source?		1=Unprotected well 2=Protected well 3=Unprotected spring 4=Protected spring 5=Public tap 6=Own tap 7=Water kiosk 8=Bought from vendor 9=Borehole 99=Other, specify
C10a	Is the drinking water source used only by members of your household or shared with other households?		1=Own household only 2=Shared with other households
<b>C10b</b>	Do you treat your drinking water? Note: Respondent should be marked as NOT treating their drinking water if they either buy treated drinking water or drink untreated water.		0=No>>C11 1=Yes
<b>C10c</b>	How do you treat your drinking water?		1=Boil 2=Add chlorine 99=Other, specify
<b>C11</b>	What type of toilet does your household use?		1=Flush toilet 2=Pit latrine with constructed floor slab 3=Pit latrine without constructed floor slab 4=Bucket/other container <b>5=Bush/don't have a toilet&gt;&gt;C12</b> <b>99=Other, specify</b>
C11a	Is the toilet only for use by members of your household or shared with another household?		1=Private 2=Shared
C12	Do you have a source of electricity in your household?		No=0>>C13 Yes=1
C12a	What was the main source of electricity in the household during the <b>past 7 days</b> ?		1=National Grid Connection (ZESCO) 2=Local Mini Grid 3=Generator (diesel) 4=Solar panel/solar home system 5=Inverter 6=Rechargeable Battery (e.g. storage or car battery) <b>99=Other, specify</b>



<b>C12b</b>	What was the secondary source of electricity in the household during the <b>past 7 days</b> ?		1=National Grid Connection (ZESCO) 2=Local Mini Grid 3=Generator (diesel) 4=Solar panel/solar home system 5=Inverter 6=Rechargeable Battery (e.g. storage or car battery) 88=No other source of electricity in household <b>99=Other, specify</b>
<b>C13</b>	During the <b>past 7 days</b> , the most hours of lighting came from which source?		1=Fuelwood 2=Charcoal mbaula (traditional) 3=Kerosene/Paraffin lantern/stove 4=Electricity (ZESCO) 5=Solar panel/solar home system 6=Candle 7=Diesel generator 8=Torch (cell phone) 9=Torch (dry cell) 10=Ethanol/methanol/alcohol lantern or stove 11=Electric inverter 12=Biogas 13=Improved charcoal stove, EcoZoom 14=Improved charcoal stove, other 15=Pellets and microgasification stove (Mimi Moto) <b>99=Other, specify</b>
<b>C13a</b>	During the <b>past 7 days</b> , the second-most hours of lighting came from which source?		1=Fuelwood 2=Charcoal mbaula (traditional) 3=Kerosene/Paraffin lantern/stove 4=Electricity (ZESCO) 5=Solar panel/solar home system 6=Candle 7=Diesel generator 8=Torch (cell phone) 9=Torch (dry cell) 10=Ethanol/methanol/alcohol lantern or stove 11=Electric inverter 12=Biogas 13=Improved charcoal stove, EcoZoom 14=Improved charcoal stove, other 15=Pellets and microgasification stove (Mimi Moto) 88=No other lighting source <b>99=Other, specify</b>

C14	Do you heat your house in the winter/cold season?		No=0>>Module D Yes=1
<b>C14a</b>	What do you use to heat your house?		1=Fuelwood 2=Charcoal brazier 3=Paraffin/kerosene lamp/heater 4=Electric cooker/hotplate 5=LPG/gas cooker 6=Improved charcoal stove, EcoZoom 7=Improved charcoal stove, other 8=Pellets and microgasification stove (Mimi Moto) 9=Electric heater 10=Diesel generator <b>99=Other, specify</b>

## HOUSEHOLD ASSETS

Does your household own any of following assets? <i>Note to enumerator: Consider all assets owned by anyone who is a member of the household, no matter whether those assets are located in the home or somewhere else. Assets that are on loan from a relative or another family do not count. Only count if the asset is working (i.e. working car, cellphone, etc.).</i>			
D1	Functioning Radio		No=0 Yes=1
D2	Functioning Television		No=0 Yes=1
D3	Functioning VCR/DVD		No=0 Yes=1
D4	Functioning Fan		No=0 Yes=1
D5	Functioning Wall Clock		No=0 Yes=1
D6	Functioning Electric Kettle		No=0 Yes=1
D7	Functioning Microwave		No=0 Yes=1
D8	Functioning Refrigerator		No=0 Yes=1
<b>D9</b>	Functioning Generator or Genset		No=0 Yes=1
D10	Bed with mattress {hint: if have mattress but no bed, should answer "No"}		No=0 Yes=1
D11	Sofa/Sofa set		No=0 Yes=1
D12	Table {Clarify that this could be any kind of table.}		No=0 Yes=1
D13	Chair		No=0 Yes=1
D14	Cupboard		No=0 Yes=1
D15	Functioning Mosquito net(s)		No=0 Yes=1

D16	Functioning telephone (other than mobile)		No=0 Yes=1
D17	Functioning Mobile telephone		No=0 Yes=1
D18	Functioning Computer		No=0 Yes=1
D19	Internet connection OTHER THAN mobile phone (e.g. dongle/Mifi)		No=0 Yes=1
D20	Functioning Sewing machine		No=0 Yes=1
D21	Functioning Cassette player		No=0 Yes=1
D22	Grain grinder		No=0 Yes=1
D23	Hammer mill		
D24	Functioning Bicycle		No=0 Yes=1
D25	Functioning Motorcycle/scooter		No=0 Yes=1
D26	Functioning Car/truck		No=0 Yes=1
D27	Borehole		No=0 Yes=1
D28	Septic tank		No=0 Yes=1
D29	Does anyone in your household rent or own any agricultural land and/or own livestock?		No=0 <i>(If No &gt;&gt; D43)</i> Yes=1
D30	Animal-drawn cart		No=0 Yes=1
D31	Plough		No=0 Yes=1
D32	Tractor		No=0 Yes=1
D33	Traditional cattle		No=0 Yes=1
D34	Dairy cattle		No=0

			Yes=1
D35	Beef cattle		No=0 Yes=1
D36	Horses/donkeys/mules		No=0 Yes=1
D37	Goats		No=0 Yes=1
D38	Sheep		No=0 Yes=1
D39	Pigs		No=0 Yes=1
D40	Chickens		No=0 Yes=1
D41	Rabbits/other poultry		No=0 Yes=1
D42	Other livestock		No=0 Yes=1
D43	<p>Proposal: Think of all of the households who live in this compound. Please note that I am going to ask about income later. Here, I am asking you about how well-off your household is compared to others in general.</p> <p>Imagine a stairway with 6 steps – on the bottom step (step 1), we have the poorest people in the compound; on the highest step we have the richest people. On which step would you say you are on now?</p>		1=1=Poorest 2=2=Almost poorest 3=3=Middle, closer to poor 4=4=Middle, closer to rich 5=5=Almost richest 6=6=Richest

	<div><h3>Steps</h3><p>A bar chart titled 'Steps' with a light gray background and horizontal grid lines. It shows six blue bars of increasing height, labeled 1 through 6 from left to right. Below the bars, the word 'POOREST' is on the left and 'RICHEST' is on the right. A legend at the bottom center shows a blue square next to the word 'Steps'.</p><table><tr><th>Step</th><th>Label</th></tr><tr><td>1</td><td>POOREST</td></tr><tr><td>2</td><td></td></tr><tr><td>3</td><td></td></tr><tr><td>4</td><td></td></tr><tr><td>5</td><td></td></tr><tr><td>6</td><td>RICHEST</td></tr></table></div>	Step	Label	1	POOREST	2		3		4		5		6	RICHEST		
Step	Label																
1	POOREST																
2																	
3																	
4																	
5																	
6	RICHEST																
D44	<div><p>Which step do you think you will be on in 5 years?</p><h3>Steps</h3><p>A bar chart titled 'Steps' with a light gray background and horizontal grid lines. It shows six blue bars of increasing height, labeled 1 through 6 from left to right. Below the bars, the word 'POOREST' is on the left and 'RICHEST' is on the right. A legend at the bottom center shows a blue square next to the word 'Steps'.</p><table><tr><th>Step</th><th>Label</th></tr><tr><td>1</td><td>POOREST</td></tr><tr><td>2</td><td></td></tr><tr><td>3</td><td></td></tr><tr><td>4</td><td></td></tr><tr><td>5</td><td></td></tr><tr><td>6</td><td>RICHEST</td></tr></table></div>	Step	Label	1	POOREST	2		3		4		5		6	RICHEST		<p>1=Poorest 2=Almost poorest 3=Middle, closer to poor 4=Middle, closer to rich 5=Almost richest 6=Richest</p>
Step	Label																
1	POOREST																
2																	
3																	
4																	
5																	
6	RICHEST																

**CREDIT and SAVINGS (OF ALL HOUSEHOLD MEMBERS)**

E1	How much is your household's total monthly CASH income including regular allowances such as housing and transport allowances, regular overtime, and retention allowance, from the main job?		Kwacha
E2	How much IN-KIND income does the household receive per month, EXCLUDING CHARCOAL? (e.g. bags of mealie meal, electricity credits, etc.)		Convert to kwacha equivalent (If 0 >> E4)
E3	How much IN-KIND income does the household receive per month from charcoal?		Convert to kwacha equivalent
E4	How much did the household receive in remittances last month?		Enter '0' if none Kwacha
E5	Are there members of your household who save money with a formal financial institution (e.g., bank or mobile money account)?		0=No 1=Yes -888=Don't know
E6	Are there members of your household who save money with a community-based savings group (e.g. chilimba)?		0=No 1=Yes -888=Don't know
E7	Does anyone in this household have any outstanding debt, with any people, associations, or businesses? (explain that debt means that you will be paying back someone)		0=No 1=Yes -888=Don't know
	Suppose you suddenly win the Lotto. I am going to ask you a series of questions about which way you would prefer to receive your money. Of course, this is just a game.		
E8a	So first, if you could choose to receive your lotto money as K200 today or K600 in one month from today, which would you choose?		1=K200 today 2=K600 in one month
E8b	K200 today or K150 in one month  [this is a tester question for the purposes of data analysis to see if the respondents actually understand this set of hypothetical questions]		1=K200 today 2=K150 in one month
E8c	K200 today or K450 in one month		1=K200 today 2=K450 in one month
E8d	K200 today or K350 in one month		1=K200 today 2=K350 in one month
E8e	K200 today or K250 in one month		1=K200 today 2=K250 in one month
	Now, I would like you to imagine that you could receive a voucher for any ONE of the following five items. This voucher works for your family only; you cannot sell it.		

E9	<p>Consider the choice of a television, a 25 kg bag of mealie meal, one year of school fees for one child, an improved Mbaula, or a smart phone.</p> <p><i>{In manual, explain that if asked, interviewer may specify that the fees would be for the school that their child currently attends.}</i></p> <p>If you could choose a voucher for any ONE of those items, which are you MOST likely to choose?</p>		<p>1=Television  2=25 kg bag of mealie meal  3=one year of school fees  4=Improved Mbaula  5=Smart phone</p>
E10	<p>If you could choose a voucher for any ONE of those items, which are you LEAST likely to choose?</p>		<p>1=Television  2=25 kg bag of mealie meal  3=one year of school fees  4=Improved Mbaula  5=Smart phone</p>

NOTE FROM ERIN: we were not able to identify items related to water (borehole), sanitation (septic system), or health (???) that are in the same general price range as an improved stove. So I think that we will get less out of these questions that we hoped, and in the interest of reducing the length of the interview, I am suggesting that we ask just one question about trade-off between stove, food, education, and key consumer assets (TV and phone).



# HOUSEHOLD COOKING TECHNOLOGY (Prospective Users)

**If A8=3 OR A8=4**

**Enumerator Instructions: The respondent should be the primary cook in the household.**

<b>F1</b>	Where does most household cooking take place in the cold season (May – August)?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) 4=Completely outdoors <b>99=Other, specify</b>
<b>F2</b>	Where does most household cooking take place in the hot season (September– November)?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) 4=Completely outdoors <b>99=Other, specify</b>
<b>F3</b>	Where does most household cooking take place in the rainy season? (December – April)?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) 4=Completely outdoors <b>99=Other, specify</b>
<b>F4</b>	<b>We would like a list of all the stoves you own in this household. Which of the following types of stoves do you own? [Select multiple]</b>		<b>1=Traditional three stone</b> <b>2=Traditional metal charcoal stove/brazier (mbaula)</b> <b>3=Improved metal charcoal brazier (mbaula)</b> <b>4=Improved fuelwood stove</b> <b>6= Other improved charcoal stove</b> <b>7=Paraffin/kerosene stove</b> <b>8=Pellet stove</b> <b>9=Gas cooker</b> <b>10=Electric cooker with an oven</b> <b>11= Electric cooker without an oven</b> <b>12=Ethanol/methanol stove</b> <b>99=Other, specify</b>
<b>F5a-l</b>	<b>How many of {STOVE} do you own?</b>  <b>Repeat for each stove type selected in F4</b>		<b>Number</b>

<b>F6a-l</b>	<p>How long have you had {STOVE} for?</p> <p><i>Repeat for each stove type selected in F4</i></p>		<p>Years</p> <p>If less than 1, put '0'</p> <p>If their whole life, put '99'</p>
<b>F7</b>	<p>Have you borrowed another person's stove in the past 14 days?</p>		<p>0=No&gt;&gt;F6</p> <p>1=Yes</p>
<b>F7a</b>	<p><i>Which types of stoves did you borrow in the past 14 days? [Select multiple]</i></p>		<p>1=Traditional three stone</p> <p>2=Traditional metal charcoal stove/brazier (mbaula)</p> <p>3=Improved metal charcoal brazier (mbaula)</p> <p>4=Improved fuelwood stove</p> <p>6= Other improved charcoal stove</p> <p>7=Paraffin/kerosene stove</p> <p>8=Pellet stove</p> <p>9=Gas cooker</p> <p>10=Electric cooker with an oven</p> <p>11= Electric cooker without an oven</p> <p>12=Ethanol/methanol stove</p> <p>99=Other, specify</p>
<b>F8</b>	<p>Which stove was used the most during the past 30 days?</p>		<p>1=Traditional three stone</p> <p>2=Traditional metal charcoal stove/brazier (mbaula)</p> <p>3=Improved metal charcoal brazier (mbaula)</p> <p>4=Improved fuelwood stove</p> <p>6= Other improved charcoal stove</p> <p>7=Paraffin/kerosene stove</p> <p>8=Pellet stove</p> <p>9=Gas cooker</p> <p>10=Electric cooker with an oven</p> <p>11= Electric cooker without an oven</p> <p>12=Ethanol/methanol stove</p> <p>99=Other, specify</p>
<b>F9</b>	<p>Which stove was used the second most during the past 30 days?</p>		<p>1=Traditional three stone</p> <p>2=Traditional metal charcoal stove/brazier (mbaula)</p> <p>3=Improved metal charcoal brazier (mbaula)</p> <p>4=Improved fuelwood stove</p> <p>6= Other improved charcoal stove</p>

			<b>7=Paraffin/kerosene stove</b> <b>8=Pellet stove</b> <b>9=Gas cooker</b> <b>10=Electric cooker with an oven</b> <b>11= Electric cooker without an oven</b> <b>12=Ethanol/methanol stove</b> 77=No other stove used in household>>Next module <b>99=Other, specify</b>
<b>F10</b>	Which stove was used the third most during the past 30 days?		<b>1=Traditional three stone</b> <b>2=Traditional metal charcoal stove/brazier (mbaula)</b> <b>3=Improved metal charcoal brazier (mbaula)</b> <b>4=Improved fuelwood stove</b> <b>6= Other improved charcoal stove</b> <b>7=Paraffin/kerosene stove</b> <b>8=Pellet stove</b> <b>9=Gas cooker</b> <b>10=Electric cooker with an oven</b> <b>11= Electric cooker without an oven</b> <b>12=Ethanol/methanol stove</b> 77=No other stove used in household>>Next module <b>99=Other, specify</b>
<b>Questions about PRIMARY stove (F6)</b>			
<b>F1a</b>	<b>How long have you had your current [STOVE] for?</b>		months
<b>F1b</b>	How long have you been using this <b>TYPE</b> of stove for?		<b>years</b>
<b>F1c</b>	How did you obtain your current [STOVE]?		1=Purchased >> <b>F1d</b> 2=Received for free>> <b>F1e</b> 3=Made myself/self-collected stones <b>99=Other, specify</b>
<b>F1d</b>	How much did you pay for the stove?		ZMK
<b>F1e</b>	Who gave the stove to you?		1=NGO 2=Government of Zambia 3=Friend/relative 4= Workplace gift <b>99=Other, specify</b>
<b>F1f</b>	What do you use this stove for? [Select multiple]		1=Heating/boiling water for drinking (includes coffee/tea) 2=Heating water for cleaning or washing 3=Cooking light foods (e.g. rice, greens) 4=Cooking heavy meals (e.g. dry fish, beans) 5=Cooking nshima 6=Space heating 7=Baking 8=Grilling/Braai 99=Other, specify
<b>F1g</b>	How long does it take to cook nshima on this stove? [ <i>If F1f=5</i> ]		minutes
<b>F1ga</b>	<b>How long does it take to boil a medium-sized pot of water (about 2-3</b>		<b>minutes</b>

	<i>litres, or 10 cups) on this stove? [If F1f=1]</i>		
<b>F1gb</b>	<b>How long does it take to cook rice on this stove? [If F1f=3]</b>		<b>minutes</b>
<b>F1gc</b>	<b>How long does it take to cook beans on this stove? [If F1f=4]</b>		<b>minutes</b>
<b>F1h</b>	Where do you usually use this cookstove?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde)>> <b>F1j</b> 4=Completely outdoors>> <b>F1j</b> <b>99=Other, specify</b>
<b>F1i</b>	Do you use a chimney, hood or other exhaust system while using this stove?		0=No 1=Yes
<b>F1j</b>	During seasons where load shedding is a problem, is this stove still your primary stove type?		0=No 1=Yes

Questions about SECONDARY stove (F7)			
F2a	How long have you had your current [STOVE] for? ( <i>this is the stove the household currently owns</i> )		months
F2b	How long have you been using this <b>TYPE</b> of stove for?		years
F2c	How did you obtain your current [STOVE]?		1=Purchased >>F2d 2=Receive for free>>F2e 3=Made myself/self-collected stones <b>99=Other, specify</b>
F2d	How much did you pay for the stove?		ZMK
F2e	Who gave the stove to you?		1=NGO 2=Government of Zambia 3=Friend/relative 4= Workplace gift <b>99=Other, specify</b>
F2f	What do you use this stove for? [Select multiple]		1=Heating/boiling water for drinking (includes coffee/tea) 2=Heating water for cleaning or washing 3=Cooking light foods (e.g. rice, greens) 4=Cooking heavy meals (e.g. dry fish, beans) 5=Cooking nshima 6=Space heating 7=Baking 8=Grilling/Braai 99=Other, specify
F2g	How long does it take to cook nshima on this stove? [If F2f=5]		minutes
F2ga	<b>How long does it take to boil a medium-sized pot of water (about 2-3 litres, or 10 cups) on this stove? [If F2f=1]</b>		minutes
F2gb	<b>How long does it take to cook rice on this stove? [If F2f=3]</b>		minutes
F2gc	<b>How long does it take to cook beans on this stove? [If F2f=4]</b>		minutes
F2h	Where do you usually use this cookstove?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) >>F2j 4=Completely outdoors >>F2j <b>99=Other, specify</b>
F2i	Do you use a chimney, hood or other exhaust system while using this stove?		0=No 1=Yes
F2j	During seasons where load shedding is a problem, do you use this \${stove2a_label} less often than usual, the same, or more often than usual? [If F9=10 or 11]		1=Less often 2=The same 3=More often

Questions about TERTIARY stove (F8)			
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F3a	How long have you had your current [STOVE] for? ( <i>this is the stove the household currently owns</i> )		Months
F3b	How long have you been using this <b>TYPE</b> of stove for?		Years
F3c	How did you obtain your current [STOVE]?		1=Purchased >>F3d 2=Receive for free>>F3e 3=Made myself/self-collected stones <b>99=Other, specify</b>
F3d	How much did you pay for the stove?		ZMK
F3e	Who gave the stove to you?		1=NGO 2=Government of Zambia 3=Friend/relative 4= Workplace gift <b>99=Other, specify</b>
F3f	What do you use this stove for? [Select multiple]		1=Heating/boiling water for drinking (includes coffee/tea) 2=Heating water for cleaning or washing 3=Cooking light foods (e.g. rice, greens) 4=Cooking heavy meals (e.g. dry fish, beans) 5=Cooking nshima 6=Space heating 7=Baking 8=Grilling/Braai 99=Other, specify
F3g	How long does it take to cook nshima on this stove? [If F3f=5]		minutes
F3ga	<i>How long does it take to boil a medium-sized pot of water (about 2-3 litres, or 10 cups) on this stove? [If F3f=1]</i>		<b>minutes</b>
F3gb	<i>How long does it take to cook rice on this stove? [If F13=3]</i>		<b>minutes</b>
F3gc	<i>How long does it take to cook beans on this stove? [If F13=4]</i>		<b>minutes</b>
F3h	Where do you usually use this cookstove?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) >> F3j 4=Completely outdoors >>F3j <b>99=Other, specify</b>
F3i	<b>Do you use a chimney, hood or other exhaust system while using this stove?</b>		0=No 1=Yes
F3j	During seasons where load shedding is a problem, do you use this \${stove2a_label} less often than usual, the same, or more often than usual? [If F10=10 or 11]		1=Less often 2=The same 3=More often

## HOUSEHOLD COOKING TECHNOLOGY (USERS)

**If A8=1 OR A8=2 (Already users of Supamoto or VITALITE)**

**Enumerator Instructions: The respondent should be the primary cook in the household.**

<b>F1</b>	Where does most household cooking take place in the cold season (May – August)?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) 4=Completely outdoors <b>99=Other, specify</b>
<b>F2</b>	Where does most household cooking take place in the hot season (September– November)?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) 4=Completely outdoors <b>99=Other, specify</b>
<b>F3</b>	Where does most household cooking take place in the rainy season? (December – April)?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) 4=Completely outdoors <b>99=Other, specify</b>
<b>F4</b>	<b>We would like a list of all the stoves you own in this household. Which of the following types of stoves do you own? [Select multiple]</b>		<b>1=Traditional three stone</b> <b>2= Improved fuelwood stove</b> <b>3=Traditional metal charcoal stove/brazier (mbaula)</b> <b>4=VITALITE/EcoZoom improved charcoal stove</b> <b>5=Improved metal charcoal brazier (mbaula)</b> <b>6= Paraffin/kerosene stove</b> <b>7= Mimi Moto/Pellet stove</b> <b>8= Gas cooker</b> <b>9=Electric cooker with an oven</b> <b>10=Electric cooker without an oven</b> <b>11=Ethanol/methanol stove</b> <b>99=Other, specify</b>
<b>F5a-m</b>	<b>How many {STOVE} do you own?</b>  <b>Repeat for each stove type selected in F4</b>		<b>Number</b>

<b>F6a-m</b>	<p>How long have you had {STOVE} for?</p> <p><i>Repeat for each stove type selected in F4</i></p>		<p>Years</p> <p>If less than 1, put '0'</p> <p>If their whole life, put '99'</p>
<b>F7</b>	<p>Have you borrowed another person's stove in the past 14 days?</p>		<p>0=No&gt;&gt;F8</p> <p>1=Yes</p>
<b>F7a</b>	<p><i>Which types of stoves did you borrow in the past 14 days? [Select multiple]</i></p>		<p>1=Traditional three stone</p> <p>2=Traditional metal charcoal stove/brazier (mbaula)</p> <p>3=Improved metal charcoal brazier (mbaula)</p> <p>4=Improved fuelwood stove</p> <p>5= VITALITE/EcoZoom improved charcoal stove</p> <p>6= Other improved charcoal stove</p> <p>7=Paraffin/kerosene stove</p> <p>8=Mimi Moto/Pellet stove</p> <p>9=Gas cooker</p> <p>10=Electric cooker with an oven</p> <p>11=Electric cooker without an oven</p> <p>12=Ethanol/methanol stove</p> <p>99=Other, specify</p>
<b>F8</b>	<p>Which stove was used the most during the past 30 days?</p>		<p>1=Traditional three stone</p> <p>2=Traditional metal charcoal stove/brazier (mbaula)</p> <p>3=Improved metal charcoal brazier (mbaula)</p> <p>4=Improved fuelwood stove</p> <p>5= VITALITE/EcoZoom improved charcoal stove</p> <p>6= Other improved charcoal stove</p> <p>7=Paraffin/kerosene stove</p> <p>8=Mimi Moto/Pellet stove</p> <p>9=Gas cooker</p> <p>10=Electric cooker with an oven</p> <p>11=Electric cooker without an oven</p> <p>12=Ethanol/methanol stove</p> <p>99=Other, specify</p>
<b>F9</b>	<p>Which stove was used the second most during the past 30 days?</p>		<p>1=Traditional three stone</p> <p>2=Traditional metal charcoal stove/brazier (mbaula)</p>



			<b>3=Improved metal charcoal brazier (mbaula)</b> <b>4=Improved fuelwood stove</b> <b>5= VITALITE/EcoZoom improved charcoal stove</b> <b>6= Other improved charcoal stove</b> <b>7=Paraffin/kerosene stove</b> <b>8=Mimi Moto/Pellet stove</b> <b>9=Gas cooker</b> <b>10=Electric cooker with an oven</b> <b>11=Electric cooker without an oven</b> <b>12=Ethanol/methanol stove</b> <b>77=No other stove used in household&gt;&gt;Next module</b> <b>99=Other, specify</b>
<b>F10</b>	Which stove was used the third most during the past 30 days?		<b>1=Traditional three stone</b> <b>2=Traditional metal charcoal stove/brazier (mbaula)</b> <b>3=Improved metal charcoal brazier (mbaula)</b> <b>4=Improved fuelwood stove</b> <b>5= VITALITE/EcoZoom improved charcoal stove</b> <b>6= Other improved charcoal stove</b> <b>7=Paraffin/kerosene stove</b> <b>8=Pellet stove</b> <b>9=Gas cooker</b> <b>10=Electric cooker with an oven</b> <b>11=Electric cooker without an oven</b> <b>12=Ethanol/methanol stove</b> <b>77=No other stove used in household&gt;&gt;Next module</b> <b>99=Other, specify</b>
<b>Questions about PRIMARY stove (F6)</b>			
<b>F1a</b>	<b>How long have you had your current [STOVE] for? (this is the stove the household currently owns)</b>		months
<b>F1c</b>	How did you obtain your current [STOVE]?		<b>1=Purchased &gt;&gt;F1d</b> <b>2=Received for free&gt;&gt;F1e</b> <b>3=Made myself/self-collected stones</b> <b>99=Other, specify</b>
<b>F1d</b>	How much did you pay for the stove?		ZMK
<b>F1e</b>	Who gave the stove to you?		<b>1=NGO</b> <b>2=Government of Zambia</b> <b>3=Friend/relative</b> <b>4=Workplace gift</b> <b>99=Other, specify</b>
<b>F1f</b>	What do you use this stove for? [Select multiple]		<b>1=Heating/boiling water for drinking (includes coffee/tea)</b> <b>2=Heating water for cleaning or washing</b> <b>3=Cooking light foods (e.g. rice, greens)</b> <b>4=Cooking heavy meals (e.g. dry fish, beans)</b> <b>5=Cooking nshima</b> <b>6=Space heating</b>

			7=Baking 8=Grilling/Braai 99=Other, specify
F1g	How long does it take to cook nshima on this stove? <i>[If F1f=5]</i>		minutes
<b>F1ga</b>	<b>How long does it take to boil a medium-sized pot of water (about 2-3 litres, or 10 cups) on this stove? <i>[If F1f=1]</i></b>		<b>minutes</b>
<b>F1gb</b>	<b>How long does it take to cook rice on this stove? <i>[If F1f=3]</i></b>		<b>minutes</b>
<b>F1gc</b>	<b>How long does it take to cook beans on this stove? <i>[If F1f=4]</i></b>		<b>minutes</b>
<b>F1h</b>	Where do you usually use this cookstove?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde)>> <b>F1j</b> 4=Completely outdoors>> <b>F1j</b> <b>99=Other, specify</b>
F1i	Do you use a chimney, hood or other exhaust system while using this stove?		0=No 1=Yes
F1j	During seasons where load shedding is a problem, is this stove still your primary stove type?		0=No 1=Yes

Questions about SECONDARY stove (F7)			
F2a	How long have you had your current [STOVE] for? <i>(this is the stove the household currently owns)</i>		months
F2c	How did you obtain your current [STOVE]?		1=Purchased >>F2d 2=Receive for free>>F2e 3=Made myself/self-collected stones 99=Other, specify
F2d	How much did you pay for the stove?		ZMK
F2e	Who gave the stove to you?		1=NGO 2=Government of Zambia 3=Friend/relative 4=Workplace gift 99=Other, specify
F2f	What do you use this stove for? [Select multiple]		1=Heating/boiling water for drinking (includes coffee/tea) 2=Heating water for cleaning or washing 3=Cooking light foods (e.g. rice, greens) 4=Cooking heavy meals (e.g. dry fish, beans) 5=Cooking nshima 6=Space heating 7=Baking 8=Grilling/Braai 99=Other, specify
F2g	How long does it take to cook nshima on this stove? [If F2f=5]		minutes
F2ga	How long does it take to boil a medium-sized pot of water (about 2-3 litres, or 10 cups) on this stove?? [If F2f=1]		minutes
F2gb	How long does it take to cook rice on this stove? [If F2f=3]		minutes
F2gc	How long does it take to cook beans on this stove? [If F2f=4]		minutes
F2h	Where do you usually use this cookstove?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) >>third stove 4=Completely outdoors >>third stove 99=Other, specify
F2i	Do you use a chimney, hood or other exhaust system while using this stove?		0=No 1=Yes
F2j	During seasons where load shedding is a problem, do you use this stove more often than usual? [If F7=10]		0=No 1=Yes

Questions about TERTIARY stove (F8)			
F3a	How long have you had your current [STOVE] for? <i>(this is the stove the household currently owns)</i>		Months

<b>F3c</b>	How did you obtain your current [STOVE]?		1=Purchased >> <b>F3d</b> 2=Receive for free>> <b>F3e</b> 3=Made myself/self-collected stones <b>99=Other, specify</b>
F3d	How much did you pay for the stove?		ZMK
<b>F3e</b>	Who gave the stove to you?		1=NGO 2=Government of Zambia 3=Friend/relative 4=Workplace gift <b>99=Other, specify</b>
F3f	What do you use this stove for? [Select multiple]		1=Heating/boiling water for drinking (includes coffee/tea) 2=Heating water for cleaning or washing 3=Cooking light foods (e.g. rice, greens) 4=Cooking heavy meals (e.g. dry fish, beans) 5=Cooking nshima 6=Space heating 7=Baking 8=Grilling/Braai 99=Other, specify
F3g	How long does it take to cook nshima on this stove? [If F3f=5]		minutes
<b>F3ga</b>	<b>How long does it take to boil a medium-sized pot of water (about 2-3 litres, or 10 cups) on this stove? [If F3f=1]</b>		<b>minutes</b>
<b>F3gb</b>	<b>How long does it take to cook rice on this stove? [If F13=3]</b>		<b>minutes</b>
<b>F3gc</b>	<b>How long does it take to cook beans on this stove? [If F13=4]</b>		<b>minutes</b>
<b>F3h</b>	Where do you usually use this cookstove?		1=In the house/primary dwelling 2=In a separate building/standalone kitchen 3=Sheltered outdoor space (e.g., khonde) >> <b>Next section</b> 4=Completely outdoors >> <b>Next section</b> <b>99=Other, specify</b>
F3i	<b>Do you use a chimney, hood or other exhaust system while using this stove?</b>		0=No 1=Yes
F3i	During seasons where load shedding is a problem, do you use this stove more often than usual? [If F8=10]		0=No 1=Yes

### SHORT RECALL USE OF STOVES

**Enumerator script:** "Now I am going to ask you some questions about which stoves you have used during **the past 3 days**"

**CODE:** 1<sup>st</sup> = Primary cookstove used; 2<sup>nd</sup> = Secondary cookstove used

[illegible]

For Mimi Moto/Supamoto Users *If A8=1*

<b>Fii1</b>	<p><b><i>Is the Mimi Moto stove your primary, secondary, or third most used stove?</i></b></p> <p><b><i>Only if Mimi Moto IS one of top 3 used stoves as indicated in F</i></b></p> <p><b><i>(Should prepopulate from section F if primary, secondary or tertiary; if not then only codes 4 and 5 should be shown to enumerator)</i></b></p>		<p>1=Primary 2=Secondary 3=Third</p>
Fii1a	<p>Do you use the Mimi Moto stove rarely, or not at all?</p> <p><b><i>Only if Mimi Moto not primary, secondary, or tertiary in F</i></b></p>		<p>4= Rarely/ranks after third 5= I don't use it</p>
Fii2	<p>How long have you had your current Mimi Moto stove for? <b><i>(Ask only if Fii1=4 or Fii1=5)</i></b></p>		<p>Months</p>
<b>Fii3</b>	<p>What is the main reason you do not use your Mimi Moto stove? <b><i>(Ask only if Fii1=5)</i></b></p>		<p>1=Never tried it 2=Broken/no longer working 3=I don't know how to use it 4=I tried it and I don't like it 5=I prefer another stove 6=Gave it away 7=Sold it <b><i>99=Other, specify</i></b></p>
<b>Fii4</b>	<p><b><i>How many Mimi Moto stoves do you have?</i></b></p>		<p><b><i>Number</i></b></p> <p><b><i>You indicated that you have more than 1 Mimi Moto stove. Please refer to your most recent stove to answer the following questions.</i></b></p>
Fii5	<p>When did you sign your contract with Supamoto?</p>		<p>Month/year</p>
<b>Fii6</b>	<p><b><i>How long after signing your contract did you receive your Mimi Moto stove?</i></b></p>		<p>1=Less than 7 days 2=1-2 weeks 3=3-4 weeks 4=More than a month</p>
Fii7	<p>Did you pay upfront for the stove or sign up for an installment plan?</p>		<p>1=Upfront payment&gt;&gt;Fii10 2=Instalment plan</p>
Fii8	<p>What is the duration of your payment plan?</p>		<p>Months</p>
<b>Fii9</b>	<p><b><i>How many bags of pellets do you receive as part of your payment plan?</i></b></p>		<p><b><i>Number</i></b></p>

Fii12	Are the pellets you purchase from Supamoto on a monthly basis enough to do all of your cooking with?		0=No 1=Yes
Fii13	Do you ever purchase extra pellets?		0=No 1=Yes
Fii14	How many days does it typically take to finish a bag of pellets?		Days
Fii15	<b><i>Are you satisfied with the quality of your current bag of pellets?</i></b>		<b><i>0=No 1=Yes</i></b>
Fii16	<b><i>Have you ever repaired your Mimi Moto stove?</i></b>		<b><i>0=No&gt;&gt;Fii22 1=Yes</i></b>
Fii17	<b><i>When was the last repair done?</i></b>		<b><i>MM/YEAR</i></b>
Fii18	<b><i>Did the warranty cover your repair?</i></b>		<b><i>0=No 1=Yes&gt;&gt;Fii20</i></b>
Fii19	<b><i>How much did it cost?</i></b>		<b><i>Kwacha</i></b>
Fii20	<b><i>Did Supamoto provide a replacement while they were repairing your stove?</i></b>		<b><i>0=No 1=Yes</i></b>
Fii21	<b><i>How long did it take for them to repair your stove?</i></b>		<b><i>Days</i></b>
<b><i>Fii22</i></b>	What do/did you like about the Mimi Moto stove? <b><i>[Do not prompt]</i></b>  <b><i>(Allow multiple selections)</i></b>		0=Nothing to like 1=Reduces my use of charcoal 2=Reduces my use of electricity 3=Less smoke 4=Safer/less burns 5=Stove is easy to use 6=Easy to maintain 7=Portability 8=Durability 9=Status/design/appeal/beauty 10=Faster cooking 11=Ability to cook all foods 12=Food tastes good 13=Ability to cook with large pots and large quantity of foods 14=Better regulation of cooking fire 15=Stove is clean (no getting dirty from ash or fuel) 16=Easy to light 17=More modern/advanced <b><i>18=More control over cooking temperature than with charcoal</i></b> <b><i>19=Ability to cook inside</i></b> <b><i>99= Other, specify</i></b>
<b><i>Fii23</i></b>	What do/did you <i>dislike</i> about the Mimi Moto stove? <b><i>[Do not prompt]</i></b>		0=Nothing to dislike

	<i>(Allow multiple selections)</i>	1=I'm still using same amount of charcoal 2=I'm still using same amount of electricity 3=Too smoky 4=Too hot/cause burns 5=Difficult to use 6=Too much maintenance required 7=Takes up too bit/takes up too much space 8=Poor quality 9=Stove is too high/uncomfortable position while cooking 10=Takes longer to cook 11=Difficult to make food/Nsima 12=Food tastes different 13=Not able to cook with large pots/large quantity of food 14=Does not provide lighting/sufficient light 15=Does not provide for sufficient space heating 16=Lets in too many mosquitoes/vermin 17=Difficult to light 18=Difficult to top up when pellets running low 19=Can't always find pellets when I need to <b>20=Can't cook certain foods that spill over</b> <b>99=Other, specify</b>
Fii24	<b><i>What do you like about cooking with Supamoto pellets?</i></b>	<b><i>1=Easy to use</i></b> <b><i>2=Less expensive than charcoal</i></b> <b><i>3=Less expensive than electricity</i></b> <b><i>4=Less smoky than cooking with charcoal</i></b> <b><i>5=Cooks faster than charcoal</i></b> <b><i>6=Cooks faster than electricity</i></b> <b><i>8=Gives good flavour to food</i></b>



			<b>9=Pellets don't dirty my hands</b> <b>99=Other, specify</b>
Fii25	<b>What do you dislike about cooking with Supamoto pellets?</b>		<b>1=Hard to use</b> <b>2=More expensive than charcoal</b> <b>3=More expensive than electricity</b> <b>4=Smokier than cooking with charcoal or electricity</b> <b>5=Cooks slower than with charcoal</b> <b>6=Cooks slower than with electricity</b> <b>7=Less control over cooking temperature than with charcoal/electricity</b> <b>8=Does not give good flavour to food</b> <b>9=Have to let all pellets burn out of the chamber once they are lit</b> <b>99=Other, specify</b>
<b>Fii26</b>	Is it easier or harder to clean pots after cooking with the Mimi Moto stove and pellets <b>than with your other stoves?</b>		1=Easier 2=Harder <b>3=Neither</b>
Fii27	How do you charge the fan?		1=Solar panel 2=Cable/ZESCO 3=Solar panel and cable/ZESCO
Fii28	How long does it typically take to boil water on the Mimi Moto stove?		Minutes
Fii29	How long does it typically take to cook beans on the Mimi Moto stove?		Minutes
Fii30	How long does it typically take to cook nshima on the Mimi Moto stove?		Minutes
Fii31	How long does it typically take to cook rice on the Mimi Moto stove?		Minutes
<b>Fii32</b>	<b>To be assessed by the enumerator:</b>  Assess the 'usage' of the Mimi Moto stove		1=Stove looks brand new and unused 2=Stove looks used (stove walls are darkened, ash inside the stove, etc.) 3=Stove looks extremely well used

			4=Stove is used for something else other than cooking
<b>Fii33</b>	<b>To be assessed by the enumerator:</b>  Assess the condition of the Mimi Moto stove		1=Stove in good condition 2=Parts of the stove are missing or damaged but still works (i.e. pot rest) 3=Stove broken to the point where it is no longer functional

**For EcoZoom/VITALITE Users *If A8=2***

<b>Fii34</b>	<b>Is the EcoZoom/VITALITE stove your primary, secondary, or third most used stove?</b> <b>(Should prepopulate from section F if primary, secondary or tertiary; if not then only codes 4 and 5 should be shown to enumerator)</b>		1=Primary 2=Secondary 3=Third 4=Ranks after third 5=I don't use it
Fii34a	Do you use the EcoZoom/VITALITE stove rarely, or not at all?  <b>Only if EcoZoom not primary, secondary, or tertiary in F</b>		4= Rarely/ranks after third 5= I don't use it
Fii35	How long have you had your current EcoZoom/VITALITE stove for? <b>(Ask only if Fii34=4 or Fii34=5)</b>		Months
<b>Fii36</b>	What is the main reason you do not use your EcoZoom/VITALITE stove? <b>(Ask only if Fii34=5)</b>		1=Never tried it 2=Broken/no longer working 3=I don't know how to use it 4=I tried it and I don't like it 5=I prefer another stove 6=Gave it away 7=Sold it <b>99=Other, specify</b>
Fii37	How many EcoZoom/VITALITE stoves do you have?		Number  <b>If greater than 2, please refer to your most recent stove to answer all questions.</b>
<b>Fii38</b>	<b>Have you ever repaired your EcoZoom/VITALITE stove?</b>		0=No>>Fii44 1=Yes
<b>Fii39</b>	<b>When was the last repair done?</b>		<b>MM/Year</b>

<b>Fii40</b>	Did the warranty cover your repair?	0=No 1=Yes>>Fii42
<b>Fii41</b>	<b>How much did it cost?</b>	<b>Kwacha</b>
<b>Fii42</b>	<b>Did VITALITE provide a replacement while they were repairing your stove?</b>	<b>0=No 1=Yes</b>
<b>Fii43</b>	<b>How long did it take for them to repair your stove?</b>	<b>Days</b>
<b>Fii44</b>	What do/did you like about the EcoZoom/VITALITE stove? <b>[Do not prompt]</b>  <b>(Allow multiple selections)</b>	0=Nothing to like 1=Reduces my use of charcoal 2=Reduces my use of electricity 3=Less smoke 4=Safer/less burns 5=Stove is easy to use 6=Easy to maintain 7=Portability 8=Durability 9=Status/design/appeal/beauty 10=Faster cooking 11=Ability to cook all foods 12=Food tastes good 13=Ability to cook with large pots and large quantity of foods 14=Better regulation of cooking fire 15=Stove is clean (no getting dirty from ash or fuel) 16=Easy to light 17=More modern/advanced <b>18=More control over cooking temperature than with charcoal</b> <b>19=Ability to cook inside</b> 99=Other, specify
<b>Fii45</b>	What do/did you <i>dislike</i> about the EcoZoom/VITALITE stove? <b>[Do not prompt]</b>  <b>(Allow multiple selections)</b>	0=Nothing to dislike 1=I'm still using same amount of charcoal 2=I'm still using same amount of electricity 3=Too smoky 4=Too hot/cause burns 5=Difficult to use 6=Too much maintenance required 7=Takes up too bit/takes up too much space 8=Poor quality

		9=Stove is too high/uncomfortable position while cooking 10=Takes longer to cook 11=Difficult to make food/Nsima 12=Food tastes different 13=Not able to cook with large pots/large quantity of food 14=Does not provide lighting/sufficient light 15=Does not provide for sufficient space heating 16=Lets in too many mosquitoes/vermin 17=Difficult to light 18=Difficult to top up when pellets running low <b>19=Can't cook certain foods that spill over</b> 99=Other, specify
<b>Fii46</b>	<b><i>Does the EcoZoom/VITALITE stove use less charcoal than the traditional brazier?</i></b>	0=No 1=Yes
Fii47	<b><i>Is it easier or harder to clean pots after cooking with the EcoZoom/VITALITE stove than with your other stoves?</i></b>	1=Easier 2=Harder <b>3=Neither</b>
Fii48	How long does it typically take to boil water on the EcoZoom/VITALITE stove?	Minutes
Fii49	How long does it typically take to cook beans on the EcoZoom/VITALITE stove?	Minutes
Fii50	How long does it typically take to cook nshima on the EcoZoom/VITALITE stove?	Minutes
Fii51	How long does it typically take to cook rice on the EcoZoom/VITALITE stove?	Minutes
<b>Fii52</b>	<b><i>To be assessed by the enumerator.</i></b>  Assess the 'usage' of the EcoZoom/VITALITE stove	1= Stove looks brand new and unused 2= Stove looks used (stove walls are darkened, ash inside the stove, etc.) 3=Stove looks extremely well used 4= Stove is used for something else other than cooking

<b><i>Fii53</i></b>	<p><b><i>To be assessed by the enumerator:</i></b></p> <p>Assess the condition of the EcoZoom/VITALITE stove</p>	<p>1=Stove in good condition  2=Parts of the stove are missing or damaged but still works (i.e. internal chamber is burned out)  3=Stove broken to the point where it is no longer functional</p>
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## **WILLINGNESS TO PAY FOR IMPROVED COOKSTOVES**

**(Ask either Script A or B only if A8=3 OR A8=4)**

**Enumerator Instruction: The respondent should be a household member who most frequently cooks food for the household or who makes purchases for household fuels. Each person is asked a question about each stove but the order in which the questions are asked is randomly generated.**

**A1prevented, A2, A3  
B1, B2, B3**

### **PART A—Willingness to Pay**

We will now have a different type of exercise. I will describe a stove to you and I would like you to think about how you would respond if you saw this stove in the market. This stove may be similar to ones you have seen before, but it may not be the same. Please listen carefully.

While you are familiar with the traditional mbaula, I first want to talk about some of the problems with this stove. As you know when you cook with mbaulas the charcoal produces smoke that is harmful for your health. Mbaulas also use a lot of charcoal and cook some foods slowly. Recently people have developed stoves that are better for your health, cook faster, and use less fuel. I am interested in learning what you think you would do if these new stoves were available locally. Do you have any questions about anything I just said?

*This is one of the new stoves [Mimi Moto point to first image]. This stove does not use charcoal, but instead uses wood pellets [point to wood pellets]. The wood pellets are small compressed bits made from discarded wood from local mills and will be available in a store near your home. To use the stove, you pour pellets into the chamber [point to the chamber]. The stove is lit using paraffin and a match. As you can see there is a knob that [point to the knob] that lets you control the heat. The knob uses a fan that is on the bottom of the stove to control the heat. Since the stove uses the wood pellets it produces little to no smoke, which means you can cook inside your home. In order for the stove to work it requires that the fan be charged. You can charge the fan with electricity or it comes with a solar charger that can be used. If the stove is not charged it will not work.*

This stove is paid for in monthly installments over two years. It also comes with a 2-year warranty, which covers servicing and repairs of any defects. The expected lifetime of the stove is 5 years if you service it properly. Do you have any questions about how this stove works?

Two advantages of this stove are that it cooks food faster and that it uses less fuel. Typically, if you cook Kabulangeti beans it takes around 3 to 4 hours. However, with this stove it takes only 1 to 2 hours to cook Kabulangeti beans. The producers of the stove also say that a 20kg bag of pellets should last a family of four an entire month. If you have more people you will need more than 20kg. The 20kg bag costs K. 50.

Now I want to talk about the health benefits of this stove. Since it produces little to no smoke it is better for your health. Assume that using this stove for all your cooking needs would reduce your risk of getting a respiratory infection [show health picture]. Respiratory infections have

many different causes, including smoke in the home, so reducing the smoke in the home will reduce respiratory infections. We will use this picture to demonstrate the size of this impact. Therefore, if 10 people normally use a traditional stove, we think that 4 will get sick in one year, these are the green people, while 6 will not get sick, they are the grey people.

If all 10 people adopt this new improved stove, 1 person is prevented from getting sick, this is the blue person. If all 10 people had used the traditional stove this person would still have gotten sick. Even though everyone uses the improved stove 3 people will still get sick, these are the green people.

If all 10 people adopt this new improved stove, 2 people are prevented from getting sick, these are the blue people. If all 10 people had used the traditional stove these people would still have gotten sick. Even though everyone uses the improved stove 2 people will still get sick, these are the green people.

If all 10 people adopt this new improved stove, 3 people are prevented from getting sick, these are the blue people. If all 10 people had used the traditional stove these people would still have gotten sick. Even though everyone uses the improved stove 1 person will still get sick, this is the green person.]

Finally, the other 6 of the people will not get sick, and these are the grey people. If you purchase and use this stove it is possible that you could be one of the people that doesn't get a respiratory infection, or you could be one of the people that still gets an infection. Do you have any questions?

To get one of these stoves you need to pay for it with your own money in installments over two years. Remember if you choose to purchase and use this stove it will (1) decrease your risk of respiratory infections, (2) it will cook beans faster, and (3) if you cook the same amount of food you would spend less on fuel.

G1	Now I would like to ask you whether you would choose to buy this improved stove for your household if the price were [25,50,80,100,150] per month for two years. After you complete the 24 payments the stove is yours. Would you purchase this stove for [AMOUNT] per month for 24 months?	0=No 1=Yes
G2a >>> IF G1=1	How certain are you that you would be willing to pay [AMOUNT] for the improved stove?	1=Very Certain 2=Mostly Certain 3=Certain 4=Somewhat certain 5=Not Very Certain

G2a1 >>> IF G1=1	How many of the improved stoves would you purchase for your household if it cost [AMOUNT]?	[NUMBER]
G2b >>> IF G2=0	How certain are you that you would not be willing to pay [AMOUNT] for the stove?	1=Very Certain 2=Mostly Certain 3=Certain 4=Somewhat certain 5=Not Very Certain
G3a >>> IF G1=1	You just said you would pay [AMOUNT] per month for 24 months to purchase this stove. What is the maximum monthly price you would pay over 24 months to purchase this improved stove?	Kwacha
G3b >>> IF G1=0	You just said you would not pay [AMOUNT] per month for 24 months to purchase this stove. What is the maximum monthly price you would pay over 24 months to purchase this improved stove?	Kwacha
G4 >>> IF G1=1	Would you be able to purchase this stove at this price without consulting other members of your household?	0=No 1=Yes
G5a >>> IF G1=1	I described a number of advantages of this improved stove. Which one makes you most interested in buying this stove?	1= Good for your health 2=Cooks faster 3= Reduces expenditures on charcoal or fuel 4= Produces little to no smoke 5=Its appearance 99= Other, specify
G5b >>> IF G1=0	What would you say is the main reason you would not purchase the stove?	1= Price 2= Installment payments over 2 years 3= Don't need a new stove 4=The stove uses pellets 5= The need to charge the stove 6= Don't think it can cook well 99= Other, specify



## PART B

We will now have a different type of exercise. I will describe a stove to you and I would like you to think about how you would respond if you saw this stove in the market. This stove may be similar to ones you have seen before, but it may not be the same. Please listen carefully.

While you are familiar with the traditional mbaula, I first want to talk about some of the problems with this stove. As you know when you cook with mbaulas the charcoal produces smoke that is harmful for your health. Mbaulas also use a lot of charcoal and cook some foods slowly. Recently people have developed stoves that are better for your health, cook faster, and use less fuel. I am interested in learning what you think you would do if these new stoves were available locally. Do you have any questions about anything I just said?

This is one of the new stoves [*show picture of the stove of similar to VITALITE*]. While this stove still uses charcoal, it uses much less charcoal and burns it more efficiently. This improved stove also cooks food much faster than the traditional mbaula. It has a metallic casing with a clay portion inside. The stove has one chamber that you can use for cooking different items and can hold many sized pots [*point to chamber*]. You can control the heat for this stove by moving the ventilation door [*point to vent*]. If you open the door wider the fire will be stronger. The stove is easy to clean and has rubber feet on the bottom to make the stove stable.

This stove is sold for an up-front cash payment. When you purchase, you get a 1-year warranty that covers servicing and repairs of any defects. The expected lifetime of the stove is 5 years if you service it properly. Do you have any questions about how this stove works?

Two advantages of this stove are that it cooks food faster and that it uses less fuel. Typically, if you cook Kabulangeti beans it takes around 3 to 4 hours. However, with this stove it takes only 1 to 2 hours to cook Kabulangeti beans. The producers of this stove say that if you usually use 25kg of charcoal per week you will now use 15kg of charcoal per week instead.

Now I want to talk about the health benefits of this stove. Since the stove uses less charcoal it produces less smoke when you use it, which will improve your health. Assume that using this stove for all your cooking needs would reduce your risk of getting a respiratory infection [*show health picture*]. Respiratory infections have many different causes, including smoke in the home, so reducing the smoke in the home will reduce respiratory infections. We will use this picture to demonstrate the size of this impact. Therefore, if 10 people normally use a traditional stove, we think that 4 will get sick in one year, these are the green people, while 6 will not get sick, they are the grey people.

If all 10 people adopt this new improved stove, 1 person is prevented from getting sick, this is the blue person. If all 10 people had used the traditional stove this person would still have gotten sick. Even though everyone uses the improved stove 3 people will still get sick, these are the green people

If all 10 people adopt this new improved stove, 2 people are prevented from getting sick, these are the blue people. If all 10 people had used the traditional stove these people would still have gotten sick. Even though everyone uses the improved stove 2 people will still get sick, these are the green people.

If all 10 people adopt this new improved stove, 3 people are prevented from getting sick, these are the blue people. If all 10 people had used the traditional stove these people would still have gotten sick. Even though everyone uses the improved stove 1 person will still get sick, this is the green person.

Finally, the other 6 people will not get sick, and these are the grey people. If you purchase and use this stove it is possible that you could be one of the people that doesn't get a respiratory infection, or you could be one of the people that still gets an infection. Do you have any questions?

To get one of these stoves you need to pay for it with your own money in cash. Remember if you choose to purchase and use this stove (1) it will decrease your risk of respiratory infections, (2) it will cook beans faster, and (3) if you cook the same amount of food you will spend less on fuel.

G6	Now I would like to ask whether you would choose to buy this improved stove for your household if the price was [100,150,200,250,400]. You would need to pay this amount up-front in order to purchase this stove. Would you purchase this stove for [AMOUNT]?	0=No 1=Yes
G7a >>> IF G6=1	How certain are you that you would be willing to pay that [AMOUNT] for the improved stove?	1=Very Certain 2=Mostly Certain 3=Certain 4=Somewhat certain 5=Not Very Certain
G7a1 >>> IF G6=1	How many of the improved stoves would you purchase for your household if it cost [AMOUNT]?	[NUMBER]
G7b >>> IF G6=0	How certain are you that you would not be willing to pay [AMOUNT] for the stove?	1=Very Certain 2=Mostly Certain 3=Certain 4=Somewhat certain 5=Not Very Certain
G8a >>> IF G6=1	You just said you would pay [AMOUNT] upfront to purchase this stove. What is the maximum amount you would pay in cash for this improved stove?	Kwacha
G8b >>> IF G6=0	You just said you would not pay [AMOUNT] upfront to purchase this stove. What is the maximum amount you would pay to purchase this improved stove?	Kwacha
G9 >>> IF G6=1	Would you be able to purchase this stove at this price without consulting with other members of your household?	0=No 1=Yes

G10a >>> IF G6=1	I described a number of advantages of this improved stove. Which one makes you most interested in buying this stove?	1= Good for your health 2=Cooks faster 3= Reduces expenditures on charcoal or fuel 4= Produces less smoke than charcoal 5 = Its appearance 99= Other, specify
G10b >>> IF G6=0	What would you say is the main reason you would not purchase the stove?	1= Price 2= Don't need a new stove 3= Don't think it can cook well 99= Other, specify

## PART C—Willingness to Accept

We will now have a different type of exercise. I will describe a situation and I would like you to think about how you would respond if you were presented with this offer.

There are organizations in other countries that are concerned about the impact of burning charcoal on the environment. One idea that some people support is paying people to not use their traditional mbaulas, since those stoves use more fuel and produce more smoke than your other stoves such as your improved [mimimoto, ecozoom] or electric stoves. These organizations would pay people to handover all of the mbaulas and sign a contract agreeing not to cook with mbaulas. These organizations would send people to monitor the households at random times during the day or evening to make sure that the household is not using an mbaula. If they find that a household is using an mbaula, the household would not receive payment for that month and could not continue in the program.

We understand that sometimes improved stoves may break. During those times someone would need to call the stove company that sold the stove and let them know that the stove is broken. While they are repairing you're your improved stove, the company would provide you with a replacement stove. During this year that the household agrees to not use the traditional mbaula, all repairs for the improved would be covered by the company. Additionally, the company would also sign a contract that they would guarantee all participating households could use a replacement stove while their stove was being repaired. Households are also allowed to purchase additional improved stoves from the company at the market price.

Finally, each participating household would receive a monthly payment for each month they did not use their mbaulas. If a household was found to be using an mbaula they would not receive the payment for that month and they would not be allowed to continue in this program.

After successfully completing the contract, households will be offered the opportunity to continue in the program

Do you have any questions?

G11	If someone came to your house and offered a monthly payment of [100, 300,500,700,900] to handover all your traditional mbaulas and promise to not use any traditional mbaulas for one year and only cook with your improved mbaula or electric cookers, would you accept?	0=No 1=Yes
G12	How certain of your answer are you?	1=Very Certain 2=Mostly Certain 3=Certain 4=Somewhat Certain 5=Not Very Certain
G13a >>> IF G11=1	You just said you would accept [AMOUNT] per month to give up your mbaulas and only use your improved stoves and electric cookers. What is the least amount you would accept per month for giving up the use of your mbaula for one year?	Kwacha
G13b >>> IF G11=0	You just said you would not accept [AMOUNT] per month to give up your mbaulas and only use your improved stoves and electric cookers. What is the least amount you would accept per month for giving up the use of your mbaula for one year?	Kwacha
G14 >>> IF G11=1	Would you sign this contract but still try to use the mbaula and hope they did not find out?	0=No 1=Yes
G15 >>> IF G11=1	How certain are you that if you used your mbaula they would find out?	1=Very Certain 2=Mostly Certain 3=Certain 4=Somewhat Certain 5=Not Very Certain
G16 >>> IF G11=1	Do you think you would be able to keep this contract for the entire year?	0=No 1=Yes

**H. BEST-WORST QUESTIONS (ONLY FOR SAMPLE OF HOUSEHOLDS THAT HAVE ALREADY PURCHASED A MIMIMOTO OR VITALITE STOVE (i.e., A8=1 OR A8=2))**

Please listen to this scenario, let's say you want to buy a new table for your home. I would like to ask about the features of a table that you would like to buy if you had an opportunity to do so. I will present a list of features that you may need to consider when looking for a new table to purchase.

Please tell me which feature of a table is most likely to encourage you to buy the table and which feature is least likely to encourage you from buying it. You will notice that I am not asking about the price of the table because I already know that is an important feature. I am now going to ask you about 5 features.

Please consider only these 5 features:

- a. The table is made of Mukwa wood
- b. The table seats 8 people
- c. The table is 1 metre tall
- d. The shape of the table is a square
- e. The table has a glass top

Consider only these 5 features, please tell me which one most encourages you to buy the table and which one least encourages you to buy the table (*Do not take more than 5 mins on the example question*).

I would now like to ask you about the characteristics of versions of improved mbaulas that would most encourage you to buy an improved mbaula and those characteristics that would least encourage you from buying an improved mbaula.

That is, I would like to ask about the characteristics of versions of improved mbaulas that could be developed and sold. I am going to present some examples of possible features of improved mbaulas. Some of these examples might seem like improved mbaulas already on the market such as the Mimimoto or Ecozoom, while others will seem completely new. Regardless, in each case, please tell me which characteristic of the improved mbaula would most encourage you to buy it and which characteristic would least encourage you to buy it. You will notice that I am not asking about the price of the stoves because I already know that is important. You will probably also notice that none of the stoves have ALL of the features that you would like, because there are always trade-offs. (*Please hand over the correct BWS image set to respondent at this point in time and remember to guide the respondent as you move from one question to another*).

This question represents a type of improved mbaula with 5 features specified and should be answered independent of the other questions in this section. Consider only these 5 features, please tell me which one most encourages you to buy the improved mbaula and which one least encourages you to buy it. Be quick in your judgment, do not think too hard. I will give you 30 seconds in which to respond (*Please proceed to read out each feature with respect to its accompanying image*)

Most Encouraging  
Least Encouraging

	Attributes	Characteristics	Enumerators description of the characteristic:
1	Stability (stable with what size pot)	1=Stable with small pot 2=Stable with medium or small pot 3=Stable with large, medium, or small pot	1.This stove can only balance a small pot whilst you are stirring food in it and not a medium or large pot.  2. This stove can balance either a small or medium pot whilst you are stirring food in it but not a large pot  3. This stove can balance a small, medium or large pot whilst you are stirring food in it.
2	Energy source	1=This stove uses charcoal  2=This stove uses electricity.  3=This stove uses wood pellets and ZESCO power.	1. To run this stove charcoal is needed  2. To run this stove electricity is needed  3.To run this stove wood pellets and electricity are needed.

		4=This stove uses wood pellets and Solar power.	4. To run this stove uses wood pellets and solar power are needed.
3	Heat control	<p>1=This stove has a knob that can be adjusted to control the amount of heat produced.</p> <p>2= This stove has a vent that can be adjusted to control the amount of heat produced.</p> <p>3=This stove does not have a mechanism that can be adjusted to control the amount of heat produced.</p>	<p>1.To adjust the heat produced by this stove, you use a knob.</p> <p>2.To adjust the heat produced by this stove, you use a vent.</p> <p>3. To adjust the heat produced by this stove, you fan a flame or control the amount of fuel.</p>

4	Time taken to cook beans	<p>1=Takes 2 hours to cook beans</p> <p>2=Takes 3 hours to cook beans</p> <p>3=Takes 5 hours to cook beans</p>	<p>1. This stove takes 2 hours to cook beans.</p> <p>2. This stove takes 3 hours to cook beans.</p> <p>3. This stove takes 5 hours to cook beans.</p>
5	Financial Model	<p>1=Purchase stove up-front and fuel as needed</p> <p>2=Purchase stove on installments and fuel as needed</p> <p>3=Purchase stove on installments and fuel on monthly payment plan</p>	<p>1.You make one up-front cash payment for the stove, while the fuel is purchased separately as needed.</p> <p>2.You make monthly payments that cover installments for the stove, while the fuel is purchased separately as needed</p> <p>3.You make monthly payments that cover installments for the stove and a fee for a set quantity of fuel.</p>



6	Amount of smoke produced	<p>1=Zero to low amount of smoke produced</p> <p>2=Medium amount of smoke produced</p> <p>3=High amount of smoke produced</p>	<p>1. This stove produces little or no smoke.</p> <p>2. This stove produces a medium amount of smoke.</p> <p>3. This stove produces a lot of smoke.</p>
7	Instructions	<p>1. Instructions on how to use this stove are provided at time of purchase</p> <p>2. Instructions on how to use this stove are provided at time of purchase and in one more in-home demonstration</p> <p>3. Instructions on how to use this stove are provided at time of purchase and in two more in-home demonstrations</p>	<p>1. Instructions on how to use this stove are provided at time of purchase.</p> <p>2. Instructions on how to use this stove are provided at time of purchase and in one more in-home demonstration.</p> <p>3. Instructions on how to use this stove are provided at time of purchase and in two more in-home demonstrations.</p>
8	Servicing	<p>1=Four times a year</p> <p>2=Every year</p>	<p>1. It is recommended to take this stove in for servicing four times a year.</p>

		3=Every five years	<p>2.It is recommended to take this stove in for servicing every year.</p> <p>3.It is recommended to take this stove in for servicing every five years.</p>
9	Expected life of stove	<p>1=Expected life of stove is 2 years</p> <p>2= Expected life of stove is 5 years</p> <p>3= Expected life of stove is 10 years</p>	<p>1.This stove is expected to last 2 years.</p> <p>2.This stove is expected to last 5 years.</p> <p>3.This stove is expected to last 10 years</p>

### Restrictions

- To run this stove electricity is needed & To adjust the heat produced by this stove, you use a vent
- This stove produces a medium amount of smoke & To run this stove electricity is needed
- This stove produces a lot of smoke & To run this stove electricity is needed

## HOUSEHOLD CASH EXPENDITURES AND PURCHASES ON ENERGY IN LAST 4 WEEKS

**Respondent should be a household member who most frequently cooks food for the household or who makes purchases for household fuels.**

	Did your household purchase [ITEM] during the <b>last four weeks</b> ?	Did your household purchase [ITEM] during the <b>last four weeks</b> ?	During the <b>last four weeks</b> how much did your household spend on [ITEM]? <i>[Ask only if purchased]</i>
J1	Charcoal	0=No 1=Yes -888=Don't know	Kwacha *0-100,000
J2	Firewood		
J3	Electricity		
J4	Paraffin/Kerosene		
J5	Diesel fuels FOR GENSET (for lighting and cooking only)		
J6	Gas (LPG)		
J7	Any of the following: Batteries, light bulbs, lighters, matches, candles		
J8	Pellets from Supamoto (list total payment to Supamoto for last month, which should have covered both instalment payment for stove and pellets)  <b>Only if A8= '1'</b>		
J9	Pellets/briquettes  <b>Hint: for current Mimi Moto users, this question is asking about pellets OTHER than those they receive from Supamoto.</b>		
J10	Other, specify (e.g. ethanol, methanol, etc.)		

**For charcoal, electricity and pellet (Supamoto) purchases**

	<b>Charcoal (If J1=1)</b>	
J11	How many kgs of charcoal did you use in the last 4 weeks?	kgs
J12	How many times did you purchase charcoal in the last 4 weeks?	Number
J13	What size bag of charcoal do you typically purchase?	1=Under 5 kgs 2=Between 5 and 20 kgs 3=Between 20 and 50 kgs 4=Larger than 50 kgs 99=Other, specify
J14	Where do you typically purchase charcoal from?	1=Neighbour selling 2=Small retailer/shop 3=Charcoal market in compound 4=Charcoal market outside compound but in Lusaka 5=Charcoal market outside Lusaka 6=Produced on own farm 99=Other, specify
<b>J15</b>	Do you think in one year from now that charcoal will be more or less expensive than it is today?	1=More expensive 2= Stay the same 3=Less expensive -888= Don't know
	<b>Electricity (If J3=1)</b>	
J16	How many units of electricity did you use in the last 4 weeks?	Units -888= Don't know
J17	How many times did you purchase electricity in the last 4 weeks?	Number
J18	Do you use electricity for cooking?	0=No 1=Yes
J19	How many hours of load shedding did you typically experience per day in the last 4 weeks?	Hours

	<b>Pellets</b> (If J8= '1')	
J20	How many kgs of pellets did you use in the last 4 weeks?	kgs
J21	How many times did you purchase pellets in the last 4 weeks?	Number
J22	What size bag of pellets do you typically purchase?	1=Under 5 kgs 2=Between 5 and 20 kgs 3=Between 20 and 50 kgs 4=Larger than 50 kgs 99=Other, specify
J23	How do you typically obtain your pellets?	1=They are delivered>>End Module 2=I pick them up
J23	Where did you purchase pellets from?	1=Supamoto Kiosk 2=Small shop/retailer in compound 3=Petrol station 4=Supamoto office 5=Friend <b>99=Other, specify</b>

### HOUSEHOLD CASH EXPENDITURES AND PURCHASES IN LAST 2 WEEKS

		Did your household purchase [ITEM] during the <b>last two weeks</b> ?	<b>During the last 2 weeks</b> how much did your household spend on [ITEM]? <i>[Ask only if purchased]</i>
K0	<i><b>You said that your rent was [INSERT AMOUNT]. Now we are going to ask you about your other household expenditures.</b></i>		
	<i><b>Frequent Foods</b></i>		
K1	Maize meals (breakfast mealie meal, roller meal, hammer mealie meal, pounded mealie meal)	0=No 1=Yes 2=Don't know	Kwacha *0-500
K2	Other grains (millet, sorghum, rice, wheat, other)		*0-500
K3	Bakery goods (bread/bread rolls, buns/scones, fritters, other)		*0-500
K4	Roots and tubers (sweet potatoes, potatoes, cassava, other)		*0-500
K5	Pulses and legumes (fresh beans, sunflower, soya beans, dried beans, groundnuts, Bambara, cowpeas, peas, other)		*0-500
K6	Vegetables (onions, tomatoes, cabbages, rape, okra, pumpkin leaves, cassava leaves, kalembula, bondwe, impwa, cucumber, green beans, carrots, pumpkin, green maize, other vegetables)		*0-500
K7	Fruits (oranges, apples, mangoes, bananas, pawpaws, watermelons, lemons, pineapples, pears, guavas, avocados, other)		*0-500
K8	Fish (Kapenta, bream, buka buka, other fish either fresh, frozen, dried or smoked)		*0-500
K9	Meat and poultry (chicken, beef, port, goat, sheep, game meat either fresh, frozen, dried or smoked)		*0-500
K10	Dairy products and eggs (milk fresh and powdered, eggs, cheese, other)		*0-500

K11	Fats (butter, margarine, peanut butter)		*0-500
K12	Sugar and sweets (sugar, honey, jam, cocoa and chocolate, cremora, other)		*0-500
K13	Non-alcoholic beverages (tea, coffee, drinking chocolate, Milo, juice, soft drinks, mineral water, munkoyo, maheu, other)		*0-500
K14	Alcoholic beverages (spirits, wines, ciders, beer, traditional brews, other)		*0-500
K15	Baby foods (Cerelac, Vitasoy, baby milk, etc.)		*0-500
K16	Foods from kiosks, cafes, and restaurants		*0-500
K17	Cigarettes and tobacco		*0-500

#### HOUSEHOLD CASH EXPENDITURES AND PURCHASES IN LAST 4 WEEKS

	Did your household purchase [ITEM] during the <b>last four weeks</b> ?	Did your household purchase [ITEM] during the <b>last four weeks</b> ?	<b>During the <i>last four weeks</i></b> how much did your household spend on [ITEM]? <i>[Ask only if purchased/]</i>
	<b><i>Housing Expenses</i></b>		
K18	Salt, spices and cooking oil	0=No 1=Yes 2=Don't know	Kwacha *0-2,000
K19	Water and sewage charges (Did your household pay for)		*0-2,000
K20	Home repairs (Did your household pay for)		*0-2,000
K21	Cable/pay TV (DSTV, My TV, Satellite, ZNBC etc.)		*0-2,000
K22	Garbage collection (solid waste) (Did your household pay for)		*0-2,000
K23	<b><i>Other housing expenses (this includes all other expenses not covered by the items above)</i></b>		*0-2,000

	<b>Hygiene</b>		*0-2,000
K24	Bath and handwashing soap, toothpaste		*0-2,000
K25	Laundry detergent		*0-2,000
K26	Toilet paper, sanitary towels, and other tissues		*0-2,000
K27	Cosmetics (lotions, creams, glycerin, make-up, petroleum jellies)		*0-2,000
K28	Hair care (perming, braiding, conditioning, shampooing, haircuts) (Did your household pay for)		*0-2,000
K29	Laundry services (dry cleaning and washing) (Did your household pay for)		*0-2,000
K30	Cleaning agents		*0-2,000
K31	Insecticides		*0-2,000

#### HOUSEHOLD CASH EXPENDITURES AND PURCHASES IN LAST 4 WEEKS

	Did your household purchase [ITEM] during the <b>last four weeks</b> ?	Did your household purchase [ITEM] during the <b>last four weeks</b> ?	<b>During the <i>last four weeks</i></b> how much did your household spend on [ITEM]? <i>[Ask only if purchased]</i>
K32	Public transportation (to and from work, to and from school, other places) (Did your household pay for)	0=No 1=Yes 2=Don't know	Kwacha  *0-5,000
K33	Private transportation (petrol/diesel/oil, vehicle or motorbike maintenance and repairs, bicycle repairs, other) (Did your household pay for)		*0-5,000
K34	Mobile phones (connection fees, air time, etc.)		*0-5,000



K35	Land line phones (connection fees, prepaid and postpaid)		*0-5,000
K36	Internet (connection and subscription fees for Internet connection not connected to mobile phones)		*0-5,000
K37	Postal expenses		*0-5,000
K38	Stationery		*0-5,000
K39	Typing services		*0-5,000
K40	Entertainment (cinema, disco, watching soccer/boxing, video hire, visits to entertainment centers)		*0-5,000
K41	Household employees (Did your household pay wages of)		*0-5,000

#### HOUSEHOLD CASH EXPENDITURES AND PURCHASES IN LAST 12 MONTHS

	Did your household purchase [ITEM] during the <b>last 12 months</b> ?	Did your household purchase [ITEM] during the <b>last 12 months</b> ?	<b>During the last 12 months,</b> how much did your household spend on [ITEM]? <i>[Ask only if purchased]</i>
	<b>Health</b>		
K42	Medicines (Any type. May include pharmacy, traditional, Chinese, etc.)	0=No 1=Yes 2=Don't know	Kwacha *0-100,000
K43	Fees for doctors, nurses, midwives, health assistants (Did your household pay)		*0-100,000
K44	Fees for dentists (Did your household pay)		*0-100,000
K45	Fees for hospital stays (Did your household pay)		*0-100,000
K46	Fees for traditional healers (Did your household pay)		*0-100,000

K47	Payments to hospital health center, surgery (Did your household make)		*0-100,000
K48	Water treatment tablets, chemicals, etc.		*0-100,000
K49	Other water treatment		*0-100,000
	<b><i>Clothing and Shoes</i></b>		*0-100,000
K50	Clothing (chitenges, children's clothing, men's and women's clothing)		*0-100,000
K51	Fabric and tailoring charges		*0-100,000
K52	Footwear		*0-100,000
	<b><i>Financial</i></b>		*0-100,000
K53	Loan repayment (Did your household pay)		*0-100,000
K54	Contributions (church, mosque, etc.) (Did your household give)		*0-100,000
K55	Land rent (Did your household pay)		*0-100,000
K56	Insurance (car, life, health)		*0-100,000
K57	Funerals, weddings, dowries, gifts (Did your household make purchases related to)		*0-100,000
K58	Remittances to rural Zambia (Did your household send)		*0-100,000
K59	Remittances to urban Zambia (Did your household send)		*0-100,000
K60	Remittances outside of Zambia (Did your household send)		*0-100,000

#### K. HOUSEHOLD CASH EXPENDITURES AND PURCHASES RELATED TO EDUCATION IN 2018

	Did your household purchase [ITEM] during <b>the last year, 2018?</b>	During 2018 how much did your household spend on [ITEM] during the <b>first term?</b>	During 2018 how much did your household spend on	During 2018 how much did your household spend on
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			[ITEM] during the <b>second term?</b>	[ITEM] during the <b>third term?</b>
K61	School fees	Kwacha *0-100,000	Kwacha *0-100,000	Kwacha *0-100,000
K62	Contribution to school/PTA (Did your household give)	*0-100,000	*0-100,000	*0-100,000
K63	Private tuition (Did your household pay)	*0-100,000	*0-100,000	*0-100,000
K64	Textbooks	*0-100,000	*0-100,000	*0-100,000
K65	School stationery (exercise books, paper, pens, pencils, etc)	*0-100,000	*0-100,000	*0-100,000
K66	Other school requisites	*0-100,000	*0-100,000	*0-100,000
K67	School uniforms (including shoes, socks, ties, materials, and tailoring)  <i><b>If school uniforms were included in school fees, say that spent '0'</b></i>	*0-100,000	*0-100,000	*0-100,000
K68	Other educational expenses (Did your household pay)	*0-100,000	*0-100,000	*0-100,000

**Awareness of Clean Cooking Firms in Lusaka (ask only if A8=3 or A8=4)**

L1	Have you ever heard of Supamoto, a company that sells biomass pellets and Mimi Moto gasifier cookstoves?		0=No>> <b>L4</b> 1=Yes
<b>L2</b>	How did you hear about Supamoto? <i>[select all that apply]</i>		1=Radio 2=Billboard 3=Demonstration in compound 4=In home visit from customer service rep 5=Phone call 6=Friend or relative 7=Brochures and flyers 8=Cooking club <b>99=Other, specify</b>
<b>L3</b>	<b>Which products are you aware of Supamoto offering? <i>[select all that apply]</i></b>		1=Solar systems 2=Water filters 3=Fertilizer/pesticides 4=Improved charcoal cookstoves 5=Pellets 6= Mimi Moto cookstoves 7=Cell phones <b>99=Other, specify</b>
L4	Have you ever heard of VITALITE, a company that sells EcoZoom improved charcoal cookstoves?		0=No >> <b>next section</b> 1=Yes
<b>L5</b>	How did you hear about VITALITE ? <i>[select all that apply]</i>		1=Radio 2=Billboard 3=Demonstration in compound 4=In home visit from customer service rep 5=Phone call 6=Friend or relative 7=Brochures and flyers <b>99=Other, specify</b>
<b>L6</b>	<b>Which products are you aware of VITALITE offering? <i>[select all that apply]</i></b>		1=Solar systems 2=Water filters 3=Fertilizer/pesticides 4=Improved charcoal cookstoves 5=Pellets 6= Mimi Moto cookstoves 7=Cell phones <b>99=Other, specify</b>



**M. KNOWLEDGE AND PERCEPTIONS ABOUT STOVES AND COOKING**

	<b>Statement</b> <b>Read the following statement and ask respondent</b> <b>whether he or she agrees, disagrees, or has no</b> <b>opinion.</b>		0=Disagree 1=Yes 2=No Opinion
M1	Smoke from cookstoves is good at chasing mosquitoes away.		
M2	Smoke from cooking with charcoal is a big health problem in my family.		
M3	Modern or wealthy families use electricity to cook.		
M4	Charcoal is convenient to use for cooking.		
M5	Electricity is expensive for cooking.		
M6	Firewood is hard to obtain		
M7	Cooking with charcoal decreases diarrhea		
M8	Certain food tastes better when cooked with firewood/charcoal compared to electricity.		
M9	Charcoal is hard to obtain in the market.		
M10	The brazier is the best charcoal stove to use at home.		
M11	Men usually make decisions on the distribution of the family budget		
M12	Men usually make decisions on purchasing of fuel for cooking in my household		
M13	Men usually make decisions on purchasing of cooking devices in my household (i.e. cookstoves; hot plates)		
M14	Men usually make decisions on purchasing of lighting related devices in my household (i.e. solar panels, batteries, cell phone, torches)		
M15	My household would consider using biomass pellets and an improved cookstove for cooking		
M16	Cooking with charcoal contributes to deforestation in Zambia		
M17	Two plate electric cookers can be used to roast meat		

**N. SOCIAL CAPITAL and TRUST/COMMUNITY COHESION**

Among your current acquaintances and relatives, are there any who....			
N1	Are doctors/nurses, or who work in hospitals and clinics?		No=0 Yes=1
N2	Are teachers, school officials, or anybody who works in a school?		No=0 Yes=1
N3	Are in government service? [other than doctors, teachers, above]		No=0 Yes=1
N4	Works for an improved stove and/or fuel company		No=0 Yes=1

**Enumerator script:** "I now want to ask if you agree or disagree with each of the following statements, and to what extent".

N5	I have confidence (or faith) in most people.		Strongly Disagree=1 Disagree=2 Agree=3 Strongly Agree=4
N6	I can count on my neighbour to send an important letter/message.		
N7	My life is determined by my own actions.		
N8	I can make important decisions that can change my life.		
N9	I participate in decision making in my community.		
N10	I feel part of the community.		
N11	I have close friends or relatives I can talk to.		
N12	I participate in financial decisions within my own household		

## FUEL WEIGHING

Ask the primary cook to set aside the quantity of fuelwood, charcoal and/or pellets they plan to use in the upcoming 24-hour period for cooking (if the household uses multiple fuels, weigh all types they plan to use in the next 24 hours)

O0	Is there enough fuel <b>in the household</b> to cook with for the <b>upcoming 24 hours</b> ?		0=No >> Skip to Final Main Survey Questions 1=Yes
O1	Weight of fuelwood set aside		kgs
O2	Weight of charcoal set aside		kgs
O3	Weight of pellets set aside		kgs
O4	Weight of <b>any other solid fuel</b> set aside		kgs
O5	Is the fuel weighed enough to cook meals for a typical 24-hour period in this household (breakfast, lunch, dinner)?		1=Yes 2=More than typically used 3=Less than typically used
O6	How many meals can be cooked with this quantity of fuel?		Number ( <i>should be 4 or fewer</i> )

## Final Main Survey Questions

	Please proceed to the exposure monitoring and Cognitive modules with {Primary cook name}. (Ai7=1 or Ai71=1)		
	Make sure to complete CO monitoring (Ai7=1 and Bi0=1)		
	Make sure to complete PM monitoring (Ai7a=1 and Bi0a>=18)		



**Cognitive function** (*Only for primary cooks selected for CO monitoring*)

**Enumerator Script:** “I am going to ask some simple questions. Some may be easy and some may be hard to answer.”

P1	Please tell me today's date	MM/DD/YYYY	1= Date is correct 2= Date is incorrect 3= Does not know
P2	Please tell me what day of the week today is	Sunday; Monday; Tuesday; Wednesday; Thursday; Friday; Saturday	1= Day is correct 2= Day is incorrect 3= Does not know
P3	How would you rate your memory at the present time? Would you say it is excellent, very good, good, fair or poor?		1= Excellent 2= Very good 3= Good 4= Fair 5= Poor

**WORD RECALL**

**Enumerator Script:** “Now I will read a list consisting of 10 words and I would like you to memorize as many as you can. We made the list long to make it difficult for anyone to memorize all of the words. Most people will only remember a few of them. Please listen carefully as I read the list, because I cannot repeat it. When I finish reading the list, I will ask you to recall and tell us as many words as you can remember, and they don't have to be in order. Is this explanation clear?”

*Probe whether respondent needs more explanation. If so, read the instructions again. Once understood, read the list slowly, with an interval of approximately 2 seconds between each word.*

Autorecord start time

<b>[One of 2 lists of words (e.g., A or B will be randomly selected by ODK)]</b>			
P4	Which list is being used?		
	1= A 2= B		
A	B		
A1 Hotel (hotel) A2 Madzi (water) A3 Mtengo (tree) A4 Chalichi (church) A5 Msikana (girl) A6 Maliketi (market) A7 Pepala (paper) A8 Mwana (child) A9 Mfumu (king) A10 Bukhu (book)	B1 Mlengalenga (sky) B2 Munyanja (ocean) B3 Mwala (stone) B4 Nsapato (shoes) B5 Mkazi (woman) B6 Makina (machine) B7 Nyumba (house) B8 Phiri (mountain) B9 Kalata (letter) B10 Moto (fire)		
O5	Now please let us know the words you are able to recall.	<b>[Checklist should prepopulate based upon whether A or B were</b>	1 (prepop from A or B) 2 3 4 5

		<b>selected (select many)]</b>	6 7 8 9 10 11 None recalled 12 Refused to recall
<i>Give the respondent enough time to recall, approximately up to two minutes Select all the words mentioned by the respondent</i>			

Autorecord end time

**Enumerator Script:** *We will ask you to recall the words again later. Now we will go on with the next section.*

## DIGIT SPAN TEST

### **Instructions for enumerator:**

- *After giving instructions to the respondent, administer the digit spans in order*
- *Do not repeat a span once read*
- *Administer both spans of the same length, regardless of how the participant performs*
- *Say the digits at a rate of approximately 1 digit per second*
- *Use a monotonic voice without inflections on the end*
- *Discontinue after failure on both trials of any item*

### **Instructions for respondent for forward test:**

**Enumerator Script:** *I am going to say some numbers. Listen carefully, and when I am through say them right after me. For example, if I say 6-2-7, you would say 6-2-7. If I say 7-1-9, what would you say?*

*If the participant responds correctly (7-1-9), say: "That's right," and proceed to Item 1.*

*If the participant fails the example, say: "No, you would say 7-1-9, so to say it forwards you would say 7-1-9. Now try these numbers. Remember, you are to say them forwards, 3-4-8.*

*Whether the participant succeeds or fails with the second example, (3-4-8), proceed to Item 1. Give no help on this second example or any of the items that follow.*

**Scoring:** *Each span is scored 1= Pass or 0= Fail. Only discontinue the test when the respondent has failed both trials of the same length.*

Item	Digit Span	
P6	Tablet should auto record current time	(HH:MM)
P7	1-7	0= Fail 1= Pass
P8	6-3	0= Fail 1= Pass
P9	5-8-2	0= Fail 1= Pass

P10	6-9-4	0= Fail 1= Pass
P11	6-4-3-9	0= Fail 1= Pass
P12	7-2-8-6	0= Fail 1= Pass
P13	4-2-7-3-1	0= Fail 1= Pass
P14	7-5-8-3-6	0= Fail 1= Pass
P15	6-1-9-4-7-3	0= Fail 1= Pass
P16	3-9-2-4-8-7	0= Fail 1= Pass
P17	5-9-1-7-4-2-8	0= Fail 1= Pass
P18	4-1-7-9-3-8-6	0= Fail 1= Pass
P19	5-8-1-9-2-6-4-7	0= Fail 1= Pass
P20	3-8-2-9-5-1-7-4	0= Fail 1= Pass
P21	2-7-5-8-6-2-5-8-4	0= Fail 1= Pass
P22	7-1-3-9-4-2-5-6-8	0= Fail 1= Pass

**Instructions for respondent for backward test:**

**Enumerator script:** *Now I am going to say some numbers. Listen carefully, and when I am through say them backwards right after me. For example, if I say 6-2-7, you would say 7-2-6. If I say 7-1-9, what would you say?*

**If the participant responds correctly (9-1-7), say: "That's right," and proceed to Item 1**

**If the participant fails the example, say: "No, you would say 9-1-7. I said 7-1-9, so to say it backwards you would say 9-1-7. Now try these numbers. Remember, you are to say them backwards, 3-4-8.**

**Whether the participant succeeds or fails with the second example, (3-4-8), proceed to Item 1. Give no help on this second example or any of the items that follow.**

**Scoring: Each span is scored 1= Pass or 0= Fail. Only discontinue the test when the respondent has failed both trials of the same length.**

Item	Digit Span	
P23	2-4	0= Fail 1= Pass
P24	5-7	0= Fail 1= Pass
P25	6-2-9	0= Fail 1= Pass
P26	4-1-5	0= Fail 1= Pass

P27	3-2-7-9	0= Fail 1= Pass
P28	4-9-6-8	0= Fail 1= Pass
P29	1-5-2-8-6	0= Fail 1= Pass
P30	6-1-8-4-3	0= Fail 1= Pass
P31	5-3-9-4-1-8	0= Fail 1= Pass
P32	7-2-4-8-5-6	0= Fail 1= Pass
P33	8-1-2-9-3-6-5	0= Fail 1= Pass
P34	4-7-3-9-1-2-8	0= Fail 1= Pass
P35	9-4-3-7-6-2-5-8	0= Fail 1= Pass
P36	7-2-8-1-9-6-5-3	0= Fail 1= Pass
P37	Tablet should auto record current time	(HH:MM)

## REVISIT WORD RECALL

**Enumerator Script:** *A short while ago, we read a list of words to you and you tried to recall some of the words you heard. Please let us know the words you are able to recall now*

**Give the respondent enough time to recall, approximately up to two minutes**

**Select all the words mentioned by the respondent:**

**Auto record start time**

**Do not ask if said “refused to recall” previously**

P38	Now please let us know the words you are able to recall.	<b>[Checklist should prepopulate based upon whether A or B were selected (select many)]</b>	<b>1 (prepop from A or B)</b> 2 3 4 5 6 7 8 9 10 11 None recalled 12 Refused to recall
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Auto-record end time

## CO MONITOR DEPLOYMENT- MAIN COOK

HHID |\_\_|\_\_|\_\_|\_\_|\_\_|\_\_|

ENUMERATOR NAME: \_\_\_\_\_

### 1. Pre-Deployment Questions: Primary Cook Blood Pressure (after 20 minutes of rest on deployment of CO monitor)

Q1	Q2	Q3	Q4a	Q4b	Q5a	Q5b	Q6a	Q6b	Q7	Q8
Time	Blood Pressure Monitor ID	Pulse	Systolic blood pressure No. 1	Diastolic blood pressure No. 1	Systolic blood pressure No. 2	Diastolic blood pressure No. 2	Systolic blood pressure No. 3	Diastolic blood pressure No. 3	[Women only] Are you pregnant?	Do you smoke?
(hh:mm)	ID Number *1-25	#BPM *20-200	mm Hg *40-300	mm Hg *20-200	mm Hg *40-300	mm Hg *20-200	mm Hg *40-300	mm Hg *20-200	0=No 1=Yes 2=Unsure	0=No 1=Yes

### 2. Deployment (at HOUSEHOLD)

Q9	CO data logger number	[Re-enter number from device]	
Q10	Date of deployment	Date: DD/MM/YY	_ _ _ _ _ _ _
Q11	Time cook started wearing	Hour: min (24-hour clock)	_ _ _ : _ _ _

### 3. Post-Deployment (at HOUSEHOLD) \*Should be a minimum of 24 hours later

Q12	CO data logger number	[Re-enter number from device]	
Q13	Date of retrieval	Date: DD/MM/YY	_ _ _ _ _ _ _

Q14	Time picked up (when did you collect it from the cook?)	Hour: min (24 hour clock)	_ _ _ : _ _ _
<b>4. Post-Deployment Questions: Ask the main cook the following questions when you pick up the CO monitor</b>			
Q15	<i>How many times did you cook in the first 24 hours that you had the monitor?</i>	Number -888=Don't know	
Q16	<i>Approximately how many hours did you spend cooking in the first 24 hours that you had the monitor?</i>	Hours -888=Don't know	
Q17	<i>Was the CO monitor removed for any reason other than bathing or sleeping in the first 24 hours that you had the monitor?</i>	0=No>>Q19 1=Yes	
Q18	<i>Where did you place the CO monitor during these times?</i>	1=In the same room 2=In the same household but a different room 3=In a different building 4=Outdoors 99=Other, specify	
Q19	<i>In the first 24 hours that you had the monitor, where did you do the majority of the cooking?</i>	1= Kitchen outside primary dwelling 2=Kitchen inside primary dwelling 3=Veranda 4=Outside (unsheltered) 5=Outside (sheltered) 6=Bedroom 7=Sitting room 8=There was no cooking 99=Other, specify	
Q20	<i>In the first 24 hours that you had the monitor, did you burn garbage or unwanted waste (e.g. overgrown grass in your yard)?</i>	0=No 1=Yes	

Q21	<i>In the first 24 hours that you had the monitor, did you smoke cigarettes or were you around anyone smoking cigarettes?</i>	0=No 1=Yes	
Q22	<i>Which source(s) of lighting was used in your living space in the first 24 hours that you had the monitor (circle all that apply)?</i>	1=Fuelwood 2=Charcoal mbaula (traditional) 3=Kerosene/Paraffin lantern/stove 4=Electricity (ZESCO) 5=Solar panel/solar home system 6=Candle 7=Diesel generator 8=Torch (cell phone) 9=Torch (dry cell) 10=Ethanol/methanol/alcohol lantern or stove 11=Electric inverter 12=Biogas 13=Improved charcoal stove, EcoZoom/VITALITE 14=Improved charcoal stove, other 15=Pellets and microgasification stove (Mimi Moto) 88= No lighting source 99=Other, specify	
Q23	<i>In the first 24 hours that you had the monitor, have you been around fires for any reason other than cooking for your own household? (e.g., restaurant; neighbor's kitchen while fire was on etc.)</i>	0=No 1=Yes	
Q24	<i>If the cooking area is indoors, is there a gap between the walls and the roof of the cooking area? (Only ask if Q19=1, 2, 6, 7, or 99)</i>	0=No 1=Yes	
Q25	<i>If the cooking area is indoors, how many windows does the</i>	<i>Number</i>	

	<i>cooking area have? [Window area larger than size of a brick]</i>	<i>If '0' &gt;&gt; End module If &gt;0, → Q26</i>	
<b>Q26</b>	<i>How many windows were open during the first 24 hours that you had the monitor?</i>	<i>Number</i>	