

Cookstove Usability Testing Protocol:

Data Collection Form

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1. Participant Identification		
1.1	Date [dd / mm / yyyy]	___ / ___ / _____
1.2	Time of visit [hr : min]	___ : ___
1.3	Study region	
1.4	Household name or ID number	
1.5	Name of main cook	
1.6	Test Administrator name(s) or ID number(s)	
1.7	Stove model(s) used during cooking evaluation	

Test Overview and Guide:

This test is designed to measure how well a cookstove meets the cooking needs of the user. Detailed instruction, explanation, and information about processing test results can be found in the "[Cookstove Usability Protocol](#)" document, which should be reviewed thoroughly before testing.

This page provides an overview of key information needed to give the test. Additional instructions for each section and question are provided throughout the data collection forms in *italics*.

Testing should be done in the kitchen with the cook during the preparation for, and cooking of, the main meal of the day. The cook should be asked to prepare the meal as they normally do. Each test may take up to 3-4 hours.

Test Sections and Requirements:

	Section Name	Tools Required	When This Section of The Test Should Be Done	Who Should Conduct This Section of The Test
1	Participant Identification	(none)	Upon arrival at the household	
2	Cookstove Characteristics Evaluation	A metric tape measure or ruler	Before cooking starts, or after it is finished	Someone familiar with common stove designs
3	User Cooking Event Observation	A metric scale and a stopwatch or clock	During preparation for cooking and throughout the cooking process	Someone familiar with common stove designs
4	User Survey	(none)	During cooking	Someone very familiar with or (ideally) belonging to the same culture as the cook
5	Semi-Structured Interview	(none)	During cooking (immediately after the user survey)	Someone very familiar with or (ideally) belonging to the same culture as the cook

Requirements of the test administrator(s):

It is critical that the user survey and interview portions of the test (sections 4 and 5) be done by a person who is:

- Proficient in a language spoken by cook,
- Familiar enough with the cook's culture to recognize subtle, culture-specific communication cues,
- Whose presence in the kitchen is as unintrusive as possible.

Past experience giving surveys or with related research may also be helpful. In many cases, the ideal tester is a local woman with relevant past experience. Similarly, in some locations it is unusual for a man to spend time in the kitchen, so a male tester may not always be as welcome or receive the same quality of responses.

The other parts of the test (sections 1-3) may be done by the same person as the survey and interview (sections 4 and 5), or by a second person. This can free the surveyor/interviewer from the distractions of taking measurements, and also allows for the added benefit of a second perspective on cooking behaviors and the cook's responses to the questions.

Data Collection and Measurement:

Record all times in 24-hour format (i.e. 13:45). Record all other measurements in metric units.

Supplemental field notes and photo, video, and audio documentation (with consent) will help to clarify any uncertainties and create the most value from the time spent in the kitchen.

Other Testing Considerations:

- **Testing multiple stoves simultaneously:** If a cook uses multiple stove models at the same time, use one testing form for each stove and conduct the survey and interview for each stove simultaneously.
- **Testing institutional stoves:** This test is also designed for use with institutional stoves. Note that many of the questions regarding personal and cultural perceptions towards the stove will have different significance (or will not be applicable).
- **Other/uncommon stove designs and cooking scenarios:** There are many different stove designs and cooking scenarios, and not all of them will not align exactly with the questions and measurements in this test. If it is necessary to deviate from the protocol, take detailed notes on what changes were made and why.

Note: If the pages of this document are separated, a "test #" may be written on each sheet to identify them later:

Test # _____

2. Cookstove Characteristics Evaluation

Instructions for tester: Circle *Yes* or *No* for each question with a “**Y/N**” option.
Take additional notes as needed in the spaces provided.

Tools required: A metric tape measure or ruler.

Note: This section is to be done either before or after cooking is completed.
The tester should be familiar with common cookstove designs.

2.1	Ease of lighting	<p style="text-align: center;">Kindling or accelerants are required: Y / N</p> <p style="text-align: center;">Fire must be lit in an enclosed space within the stove: Y / N</p>
2.2	Fuel feed entry or loading area size	<p><i>[Record the most appropriate measurement for the stove’s fuel feed entrance. Only measure areas where fuel is normally fed. Do not include air supply or other areas]</i></p> <p style="text-align: center;">Three stone fire/batch fed (TLUD) stove: Y / N</p> <p style="text-align: center;">If No: Width: ____ cm Height: ____ cm</p> <p style="text-align: center;">(OR) Diameter: ____ cm</p>

2.2 Fuel feed entry/measurement notes:

2.3	Indoor soot evaluation	<p style="text-align: center;">Gas, alcohol, or electric power: Y / N Sealed chimney: Y / N</p> <p style="text-align: center;">(A sealed chimney must vent all visible smoke outdoors)</p>
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2.4	Burner count	<p><i>[Record the number of individual spaces for separate pots, pans, etc. Write “Plancha” if the stove has a single metal cooking surface.]</i></p>
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2.4 Burner count notes:

General notes:

3. User Cooking Event Observation		
<i>Instructions for tester: This section is to be started when the cook begins to prepare for the meal and continue until it is finished. Record times in 24 hour [hr:min] format. Take additional notes as needed in the spaces provided.</i>		
3.1	Fuel preparation	Start time: ____ : ____ Completion time: ____ : ____ (Includes cutting wood, removing twigs, etc., but not building and lighting the fire.) Specialized knowledge or tools required for fuel preparation: Y / N
3.2	Lighting time required	Start time: ____ : ____ Completion time: ____ : ____ (Starts when cook begins placing fuel into the stove. Completed when the stove is lit and remains burning without constant attention.)
3.2 Lighting notes [<i>describe lighting process, difficulties, and fire starting materials used</i>]:		
3.3	Fuel consumption	Initial mass: ____ (kg) Final mass: ____ (kg)
3.4	Cooking time	Start time: ____ : ____ Completion time: ____ : ____ (Starts when food, water, etc. is first heated on the fire. Completed when the last dish is removed from the fire.)
3.5	Tending and refueling frequency <i>[Record the hour and minute of each tending event. Draw a circle around each fuel refueling event, including when the fire is first built.]</i>	1. ____ : ____ 8. ____ : ____ 15. ____ : ____ 22. ____ : ____ 2. ____ : ____ 9. ____ : ____ 16. ____ : ____ 23. ____ : ____ 3. ____ : ____ 10. ____ : ____ 17. ____ : ____ 24. ____ : ____ 4. ____ : ____ 11. ____ : ____ 18. ____ : ____ 25. ____ : ____ 5. ____ : ____ 12. ____ : ____ 19. ____ : ____ 26. ____ : ____ 6. ____ : ____ 13. ____ : ____ 20. ____ : ____ 27. ____ : ____ 7. ____ : ____ 14. ____ : ____ 21. ____ : ____ 28. ____ : ____
3.6	User error <i>[Make a tally mark for each occurrence]</i>	Fire went out: _____ Cook removed functional part(s) of stove: _____ Cook fed too much fuel: _____ Incorrect refueling practices: _____ Incorrect ash cleanout: _____ Other: _____ : _____

3.6 User error notes:		
3.7	Visibility of fire <i>[Circle the most appropriate option, 0-3]</i>	(3) Best: Highly visible (combustion zone can be seen from a distance from anywhere within the cooking area) (2) Good: Moderately visible (combustion zone can be seen from a distance, from a limited angle or direction, only) (1) Fair: Minimally visible (cook must bend down within reach of the stove to see combustion zone) (0) Poor: Combustion zone is never visible while stove is in operation
3.8	Soot deposited on pot <i>[Circle the most appropriate option, 0-3]</i>	(3) Best: No soot on pot after cooking (2) Good: Soot covers bottom of pot, only, after cooking (1) Fair: Soot covers bottom and less than 1/2 of sides of pot after cooking (0) Poor: Soot covers bottom and more than 1/2 of sides of pot after cooking
3.9	Other people present during testing	<i>[List all people present during testing. Note their level of involvement in cooking, responding to survey questions, etc.]</i>
3.10	Other stove model(s) present in household	<i>[List and describe all other stoves present in household, but not used during testing.]</i>
General notes:		

4. User Survey							
<p>Instructions for tester: This section is to be done while the meal is being cooked.</p> <p>Ask the participant each of the following questions. If the question includes boxes with answers to the right of the question text, select the option that best fits the participant's response. If no option is clearly the best fit, read aloud the closest options and ask the participant to select one. Circle only one response, unless instructed otherwise.</p> <p>If no pre-determined answer options are provided, follow the instructions included with each question. Please use additional space to make comments about unclear or unexpected responses.</p> <p>Note: The tester should be very familiar with or (ideally) belong to the same culture as the cook.</p>							
4.1	"How many times do you cook on your stove each day?"	[Record response as a number. Include other relevant notes.]					
4.2	"How often do you buy cooking fuel?"	[Enter period as a number of days, weeks, months, or "never". Be sure to include units. Include other relevant notes.]					
4.3	"How much cooking fuel do you buy at once? Do you know about how many kilograms it weighs?"	[Record response as described. Indicate if the participant is uncertain about the weight of the fuel they purchase.]					
4.4	"How much do you pay each time you buy cooking fuel?"	[Record currency value. Include other relevant notes.]					
4.5 A	"How much time do you or someone who lives in your home spend collecting or buying fuel on average, per day or per week?"	[Record number of minutes or hours per day or per week. Be sure to include units. Include other relevant notes.]					
4.5 B	"How do you feel about time spent collecting or buying stove fuel?"	"It is a serious burden"	"It is a nuisance"	"I am neutral"	"I enjoy it a little"	"I enjoy it a lot"	
4.6	"How enjoyable is spending time cooking, collecting, or buying fuel with other people?"	"Not at all"	"Not very"	"I am neutral"	"Somewhat"	"Very"	"I don't do these things with other people" (N/A)
4.6 Notes:							
4.7 A	"About how much time do you or someone who lives in your home spend cutting, drying, or otherwise preparing fuel each day for your stove?"	[Record number of minutes or hours. Be sure to include units. Include other relevant notes.]					
4.7 B	"How do you feel about time spent preparing stove fuel?"	"It is a serious burden"	"It is a nuisance"	"I am neutral"	"I enjoy it a little"	"I enjoy it a lot"	

4.8 A	“Is it hard or easy to keep the fire small and cook at a low heat on your stove?”	“Very hard”	“Hard”	“Neither easy nor hard”	“Easy”	“Very easy”
4.8 B	“How important is it that a stove can easily cook with a small fire or at a low heat?”	“Very unimportant”	“Unimportant”	“Somewhat important”	“Important”	“Very important”
4.8 Notes:						
4.9 A	“Is it hard or easy to control the size of the fire in your stove?”	“Very hard”	“Hard”	“Neither easy nor hard”	“Easy”	“Very easy”
4.9 B	“How important is it that the size of the fire can be adjusted easily?”	“Very unimportant”	“Unimportant”	“Somewhat important”	“Important”	“Very important”
4.9 Notes:						
4.10 A	“How do you feel about the frequency with which your stove needs to be tended?”	“I dislike it so much that I don’t like to cook with it.”	“I don’t like how much tending it needs”	“I am neutral”	“I like how little tending it needs, but wish it needed less”	“I really like how little tending it needs. I wouldn’t change it.”
4.10 B	“How important is it that your stove can be left without being tended for a long time?”	“Very unimportant”	“Unimportant”	“Somewhat important”	“Important”	“Very important”
4.10 Notes:						
4.11 A	“Does your stove cook quickly or slowly?”	“Very slowly”	“Slowly”	“Neither quickly nor slowly”	“Quickly”	“Very quickly”
4.11 B	“How important is it that a stove cook quickly?”	“Very unimportant”	“Unimportant”	“Somewhat important”	“Important”	“Very important”
4.11 Notes:						
4.12 A	“How many of the different sizes of pots and pans you cook with fit on your stove?”	“None”	“Less than half”	“About half”	“More than half”	“All”
4.12 B	“How important is it that a stove can cook with all of the sizes of pots and pans you normally use?”	“Very unimportant”	“Unimportant”	“Somewhat important”	“Important”	“Very important”
4.12 Notes:						

4.13	"How many different dishes do you usually cook at the same time during the main meal of the day?"	<i>[Record response as a number]</i>				
4.13 Notes:						
4.14 A	"Are any of the following true for you when you reload fuel or tend the fire in your stove?"	<i>[Circle all that apply]</i>				
		"I have to remove the pot"	"I am exposed to a lot of heat or sometimes burn myself"	"I am exposed to a lot of smoke"		
4.14 B	"How important is it that it is easy to reload and tend a stove?"	"Very unimportant"	"Unimportant"	"Somewhat important"	"Important"	"Very important"
4.14 Notes:						
4.15 A	"About how many minutes does it take for the fire to get hot enough to start cooking after you light it?"	<i>[Record response as a number of minutes]</i>				
4.15 B	"How important is it that a stove gets hot enough to cook on quickly?"	"Very unimportant"	"Unimportant"	"Somewhat important"	"Important"	"Very important"
4.15 Notes:						
4.16 A	"Do you routinely fix or maintain your stove? If so, how often?"	<i>[Enter interval as a number of days, weeks, months, or "never"]</i>				
4.16 B	"Do you agree or disagree that the routine maintenance of a stove is an important concern?"	"Very unimportant"	"Unimportant"	"Somewhat important"	"Important"	"Very important"
4.16 Notes:						
4.17 A	"Are any of the following true about the maintenance requirements of your stove?"	"It requires purchased replacement parts once a year or more"	"Necessary replacement parts are not available or hard to find"	"Necessary replacement parts are too expensive" <i>[If yes, ask and record how much money per year is needed for parts]: _____</i>		
4.17 B	"Do you agree or disagree that the long-term maintenance of a stove is a significant concern?"	"I strongly disagree"	"I disagree"	"I neither agree nor disagree"	"I agree"	"I strongly agree"
4.17 Notes:						

4.18 A	"Which of the following best describes how you feel about the safety of your stove?"	"It is so unsafe that I do not want to use it"	"It is not very safe to use"	"It is neither safe nor unsafe"	"It generally feels safe to use, but sometimes feels unsafe"	"It stove feels very safe to use"
4.18 B	"How important is the safety of a stove?"	"Very unimportant"	"Unimportant"	"Somewhat important"	"Important"	"Very important"
4.18 Notes:						
4.19 A	"Which of the following best describes the amount of smoke your stove creates in the area where you cook?"	"There is so much smoke that I don't like to use this stove"	"I don't like the amount of smoke "	"I am neutral"	"I like how little smoke there is"	"The stove produces no smoke"
4.19 B	"Is smoke in the cooking area an important concern to you?"	"Very unimportant"	"Unimportant"	"Somewhat important"	"Important"	"Very important"
4.19 Notes:						
4.20 A	"Which of the following best describes how you feel about the height of this stove above the ground?"	"The height makes it is so uncomfortable that I don't like using it"	"The height makes it somewhat uncomfortable to use"	"I am neutral"	"The height is comfortable, but not perfect"	"The height is perfect. I wouldn't change it"
4.20 B	"How important is the height of a stove?"	"Very unimportant"	"Unimportant"	"Somewhat important"	"Important"	"Very important"
4.20 Notes:						
4.21 A	"Which of the following best describes how you feel about the appearance of this stove?"	"It is so ugly that I do not like having it in my house"	"It does not look very attractive. I wish it was different"	"I am neutral"	"It looks good, but could look better"	"I really like the way it looks. I would not change it"
4.21 B	"How important is the appearance of a stove?"	"Very unimportant"	"Unimportant"	"Somewhat important"	"Important"	"Very important"
4.21 Notes:						

4.22 A	"Which of the following best describes how you feel about the durability of this stove?"	"The durability is so poor that it is not worth using"	"It is not very durable"	"I am neutral"	"It is somewhat durable"	"It is very durable"
4.22 B	"How important is the durability of a stove?"	"Very unimportant"	"Un-important"	"Somewhat important"	"Important"	"Very important"
4.22 Notes:						
4.23 A	"Which of the following best describes how you feel about the value of this stove?"	"It is a bad value for the cost"	"It is not a very good value for the cost"	"I am neutral"	"It is a good value for the cost"	"It is a very good value for the cost"
4.23 B	"How important is the value of a stove in your decision to use it?"	"Very unimportant"	"Un-important"	"Neither important nor unimportant"	"Important"	"Very important"
4.23 Notes:						
4.24	<p><i>Ask the following question for each of the needs listed below. Circle "yes" or "no" for each.</i></p> <p><i>Add additional needs in the "other" categories if you know or suspect that there are other local needs not included in these questions.</i></p>					
	<p>"Is (this need) an important feature of a cookstove to you?"</p> <p>"If so, does this stove meet that need?"</p>					
		Important feature?		Need met by stove?		
1	Space heating	Yes	No	Yes	No	
2	Insect repellent	Yes	No	Yes	No	
3	Lighting	Yes	No	Yes	No	
4	Portability	Yes	No	Yes	No	
5	Water heating	Yes	No	Yes	No	
6	Food drying or smoking	Yes	No	Yes	No	
7	Other: _____	Yes	No	Yes	No	
8	Other: _____	Yes	No	Yes	No	
4.25 A	"Does this stove make the flavor or taste of your food better or worse than other stoves?"	"Much worse"	"A little worse"	"Neither better nor worse"	"A little better"	"Much better"
4.25 B	"How important is the flavor or taste added by a stove?"	"Very unimportant"	"Un-important"	"Somewhat important"	"Important"	"Very important"

4.25 Notes:

4.26

“How long have you been using this particular kind of stove”

[Enter response as a number of days, weeks, months, or years. Be sure to include units.]

4.26 Notes:

4.27

“Did your stove come with a paper instruction manual, or were you trained how to use your cookstove?”

No

Yes, but it was not good enough

Yes, and it was good enough

4.27 Notes:

5. Semi-structured Interview

Instructions for the tester: This section is to be done immediately after the completion of the survey.

Ask each of the following questions to the participant. Summarize their responses in the space provided below each question. Please ask additional clarifying questions, at your discretion, to encourage more complete responses.

Other questions may also be added to clarify the results of the survey or other issues that arose during the testing process in section 5.5 at the bottom of this page.

5.1	<p>"Can you list a few of your favorite things about your stove? Why do you like them?"</p>
5.2	<p>"Can you list a few of your least favorite things about your stove? Why do you dislike them?"</p>
5.3	<p>"Is there anything you would like to change about your stove?"</p>
5.4	<p>"Is there anything else you would like to tell me about your stove or cooking in general?"</p>
5.5	<p>Additional question(s) and response(s).</p>