



**SHELL
FOUNDATION**



Bonga Narrative Survey Report Bonga UNHCR Resettlement Camp

Prepared by

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Introduction

Gaia Association has been doing pilot studies on CleanCook stove in different refugee camps. The first camps for the pilot study were Shimelba and Kebribeyah; in these camps Gaia conducted a three months pilot study. Similarly, Gaia made a pilot study in Bonga refugee camp* (Sudanese refugee camp) for three months' period in twenty house holds. In the pilot study twenty houses made to own a two-burner stove and they were delivered ten liters of free ethanol for ten days. They made to use the stove for three months period of time. Gaia made two studies; one was monitoring of the indoor air pollution and the other was narrative survey. The indoor air pollution monitoring was done in twelve houses. Six households were monitored immediately after the introduction of CleanCook stove and the rest six was done during the completion of the three months.

The narrative surveys were conducted at the end of the three months in five house holds which had been using the clean cook stove. The survey was to assess the impact of CleanCook stove in the camp. The survey has three parts; the first is about the previous fuel the households use, the second is about CleanCook stove and the third part is about the health impact of CleanCook stove. The surveys conducted clearly showed the refugee women have problem to find household energy and the challenges they face. It also gave insight on family health problems because of the pollution from stoves. For detail information all the surveys conducted are summarize in the next pages.

* Bonga camp is located in Gambella region of western Ethiopia. Ethnic conflicts have affected the nearby Gambella town and Fugnido and also the region.

Bonga's 17,000 Sudanese refugees make ends meet by supplementing UNHCR assistance with self-reliance projects.

Bonga Camp is majority Uduk. Other ethnic communities are Shuluks, Nubas and Equatorians. Hundreds of these newcomers have settled in after transfer from Fugnido camp in late 2002.

See: <http://www.unhcr.org/cgi-bin/texis/vtx/photos?set=ethiopia&photo=0>

- 1) Name: **Chukei Gnyam**
Family size: **Five, four children**



“Fuel wood gathering is a tiresome and hard job for me and I feel tired to do other job after gathering.”

---Chukei Gnyam---

(Shown at left of photo, Wubshet Tadele and Firehiwot Mengesha.)

Previous Fuel

- 1) What fuel you used before the introduction of CleanCook stove? Where did you find the fuel?
I used fire wood for all my cooking. I find the fire wood from the nearby bush and my daughter helps me for gathering.
- 2) What problems did you faced for the collection of the fuel?
Fuelwood gathering is a tiresome and hard job for me and I feel tired to do other job after gathering.
- 3) How long it takes to collect the fuel? Is the fuel abundant as much as you want?
It takes me more than three hours for gathering and it is not abundant as much as we want. We are allowed to gather only the failed leaves from the trees and there is no enough failed leave to gather.

CleanCook Stove

- 1) Do you use CC stove to make coffee or tea?
Yes, I use CleanCook stove to make coffee and tea.
- 2) Did you use other stove after you get CC stove? If yes, why? If yes, what type of stove you used?
Yes, I used my three stone stove. Because I usually use large pot for cooking and CleanCook can not support this big pots.
- 3) Do you light CC stove in the night for insects or snake protection? Does it protect against insects and snakes?
Yes, I lighted CleanCook stove during the night. I think it can protect from snakes.

- 4) Do you use the CC stove indoors?
I sometimes use CleanCook stove inside and I sometimes use it outside.
- 5) What do you like about the CC stove?
I like CleanCook stove, because I am not forced to go to the bush frequently as I used to.
- 6) How efficient is the CC stove in comparison to other stoves you have used?
CleanCook is more efficient because it doesn't take too much time to cook, it is fast.
- 7) How safe is the CC stove in comparison to other stoves you have used and if it is safer, in what ways is it safe?
According to me, CleanCook made me safer now because I am not forced to go the bush frequently as I used to.
- 8) Do you prefer this stove from other stoves for future use?
Yes, I prefer it from my other stove but it can't support larger pots.
- 9) What features would you like to see on the stove or how could this stove be modified to meet your cooking needs?
I want the CleanCook stove to be bigger than the size it has now to support larger pots.
- 10) Do you move the stove from place to place?
Yes, I moved it from place to place. It is easy to move around.
- 11) What do your neighbors think about your CC stove? Do you share the stove with neighbors/friends?
They said it is a good stove and they want to own one. I shared it with my neighbors; they come and take the stove to their home for use.
- 12) Would you recommend this stove to relatives to use?
Yes, it is good if they use it.
- 13) How do you rate the fuel consumption of CleanCook stove?
I used clean cook stove with my neighbors and we didn't get the free one liter ethanol per day supply enough for our consumption.
- 14) Has the CC stove meet all your cooking needs? Are you able to use large pot?
No, it didn't meet my all cooking needs. I was not able to use large pots.
- 15) Did you face any problem related to either CleanCook stove or ethanol?
I faced a problem when I started to use the stove; I was not able to turn off the stove by the regulator. But, it didn't took me long to familiarize.
- 16) Do you gather less fuelwood now that you are using the CC stove? If yes, how much less?
Yes, I gather fuel wood once in a week but I used to gather three times a week.
- 17) How often do you have to gather fuelwood now? How has this improved/impacted on your life?
Now I gather fuel wood once in a week and this make to have much time for other activities.
- 18) Did you saved time after you begin to use CC-stove and gathering fuelwood? If yes, for what purpose you used the gained time?
Now I can do more cooking and I also got the time to attend adult classes in the school.

Health

- 1) How has the CC stove positively impacted the health of you and your family?
I had a health problem on my eye and also a body pain but after I got CleanCook stove I got a progress in my health condition.
- 2) Do you think that the CC stove has affected the air quality of your home?
Yes, I think it has affected because we can cook inside our home comfortably.
- 3) Do you enjoy sitting in the cooking place now? If yes, why?
Yes, I enjoy sitting in the kitchen when I use CleanCook because it doesn't have smoke.

2) Name: Wadge Maru (widow)

Family Size: she live with her four children



I am the only one in my family to gather the fuel wood from the forest and I am suffering from the pain of carrying heavy load for a long distance.

---Wadge---

Wadge coming from the forest with her bundle of fuel wood

Previous Fuel

- 1) What fuel you used before the introduction of CleanCook stove? Where did you find the fuel?
I used fuelwood, I gather the fuel wood from the forest.
- 2) What problems did you faced for the collection of the fuel?
I am the only one to gather the fuel wood from the forest and I am suffering from the pain of carrying heavy load for a long time.
- 3) How long it takes to collect the fuel? Is the fuel abundant as much as you want?
It takes me more than four hours to gather and the fuel wood is scarce and it is difficult to gather.

CleanCook Stove

- 1) Do you use CC stove to make coffee or tea?
Yes, I use clean cook stove to make coffee and tea.
- 2) Did you use other stove after you get CC stove? If yes, why? If yes, what type of stove you used?
Yes, I used my three stones stove. I used my three stones because CleanCook can not support large pots when I make cooking for more people.
- 3) Do you light CC stove in the night for insects or snake protection? Does it protect against insects and snakes?
Yes, I lighted it when I was not using the three stones for protection.
- 4) Do you use the CC stove indoors?
I used it inside and outside based on my interest where to cook.
- 5) What do you like about the CC stove?
Most of all it is quick and I can almost cook everything. Moreover I make a quick coffee to my neighbors and that makes me happy.
- 6) How efficient is the CC stove in comparison to other stoves you have used?
CleanCook is efficient because it is quick.
- 7) How safe is the CC stove in comparison to other stoves you have used and if it is safer, in what ways is it safe?
Yes, it is safe. I didn't face any problem since I started to use it and it kept me away from going to the forest.
- 8) Do you prefer this stove from other stoves for future use?
Yes, I like it for future use.
- 9) What features would you like to see on the stove or how could this stove be modified to meet your cooking needs?
I will be happy if you design the stove to support large pots and this is the only modification I want on clean cook stove.
- 10) Do you move the stove from place to place?
Yes, I moved it to a place I wanted.
- 11) What do your neighbors think about your CC stove? Do you share the stove with neighbors/friends?
They said it is a nice stove and they loved it. They are asking how to own one for themselves. I share it with my neighbors; they come to my house and take the stove to their place.
- 12) Would you recommend this stove to relatives to use?
Yes, I recommend it because here we don't have option for fuel and CleanCook is very good for us.
- 13) How do you rate the fuel consumption of Clean Cook stove?
You have been delivering one liter of ethanol per day for us but that was not enough for me.
- 14) Has the CC stove meet all your cooking needs? Are you able to use large pot?
No, I couldn't meet all my needs because I was not able to use large pots.
- 15) Did you face any problem related to either CleanCook stove or ethanol?
Yes, I had a problem on the regulator but it is now working fine and I didn't face any problem.

16) Do you gather less fuelwood now that you are using the CC stove? If yes, how much less?

I used to gather twice a week but I gather only once in a week.

17) How often do you have to gather fuelwood now? How has this improved/impacted on your life?

Now I gather fuel wood once in a week and this gave me time to collect cabbage, vegetable and sweet potato from my garden.

18) Did you save time after you began to use CC-stove and gathering fuelwood? If yes, for what purpose you used the gained time?

I use the gained time to look after my garden and also to do selling in the market.

Health

1) How has the CC stove positively impacted the health of you and your family?

Previously we had a health problem on me and my children which were coughing and body pain but we are looking now progress on our health after we begun to use clean cook stove.

2) Do you think that the CC stove has affected the air quality of your home?

Yes, when we use clean cook stove there is no smoke and it is now by far better.

3) Do you enjoy sitting in the cooking place now? If yes, why?

Yes, I enjoy because as I told you there is no smoke in the kitchen now.

3) Name: Hadiya Jalib

Family Size: Two, she live with her daughter



Firehiwot Mengesha and Wubshet Tadele with Hadiya Jalib.

Previous Fuel

- 1) What fuel you used before the introduction of clean cook stove? Where did you find the fuel?
I used fuel wood and I found it from the forest.
- 2) What problems did you faced for the collection of the fuel?
I am the only one to gather the fuel wood and I sometimes feel tired and not well. When we gather in the forest the guards beat us and take our axes, it is difficult.
- 3) How long it takes to collect the fuel? Is the fuel abundant as much as you want?
It takes me more than four hours to gather and it is not abundant as much as I want, you need to look for a felled down tree.

CleanCook Stove

- 1) Do you use CC stove to make coffee or tea?
Yes, I use clean cook stove for coffee and tea making.
- 2) Did you use other stove after you get CC stove? If yes, why? If yes, what type of stove you used?
I used Turbo fire wood stove (a fire wood stove distributed by UNHCR a year before) because CleanCook stove couldn't handle large pots.
- 3) Do you light CC stove in the night for insects or snake protection? Does it protect against insects and snakes?
Yes, I sometimes light it during the night. I didn't use it for this purpose since I wanted to save my ethanol.
- 4) Do you use the CC stove indoors?
I usually use it outside but sometimes there is a wind which makes cooking difficult, during then I use it inside my home.
- 5) What do you like about the CC stove?
I like its quickness; it is fast to make soup and coffee. And moreover clean cook does not have smoke.
- 6) How efficient is the CC stove in comparison to other stoves you have used?
It is efficient more than the others because it is quick and clean.
- 7) How safe is the CC stove in comparison to other stoves you have used and if it is safer, in what ways is it safe?
I have been using it for three months but I didn't face a problem even though it is a new technology to me so I believe it is a safe stove. If you look at the other three stone stoves we have a health problem because of the smoke and sometimes children burn because of the open fire.
- 8) Do you prefer this stove from other stoves for future use?
Yes, I really like to have the stove for future use because as I told you I live with my daughter and I don't need big pot cooking unless I want to have dinner with my neighbors. So, CleanCook is more useful to me.
- 9) What features would you like to see on the stove or how could this stove be modified to meet your cooking needs?
No, I don't need modification. I like it as it is.

- 10) Do you move the stove from place to place?
Yes, I move it inside and outside.
- 11) What do your neighbors think about your CC stove? Do you share the stove with neighbors/friends?
They said it is a very nice stove. They usually asked me to borrow the stove and I gave them and they make cooking in their home and bring it back to me.
- 12) Would you recommend this stove to relatives to use?
Sure, I recommend it because it is good to use.
- 13) How do you rate the fuel consumption of Clean Cook stove?
I have been receiving ten liters of ethanol per ten days and this quota has been enough for me. CleanCook has a fair consumption.
- 14) Has the CC stove meet all your cooking needs? Are you able to use large pot?
As I said before I met my all cooking needs for me and my daughter. But when we need to share dinner with our neighbors, I have to cook on large pot and CleanCook can't do that.
- 15) Did you face any problem related to either CleanCook stove or ethanol?
No, I didn't face a problem.
- 16) Do you gather less fuelwood now that you are using the CC stove? If yes, how much less?
Previously I used to gather twice a week but now I gather once in ten days.
- 17) How often do you have to gather fuelwood now? How has this improved/impacted on your life?
I now gather only once in ten days and this gave me more time to enjoy coffee with my neighbors. Now, I don't face the forest guards as frequent as before and this lowers the burden.
- 18) Did you save time after you begin to use CC-stove and gathering fuel wood? If yes, for what purpose you used the gained time?
Off course, I saved time but I use it only to enjoy with my neighbors.

Health

- 1) How has the CC stove positively impacted the health of you and your family?
I have asthma and I have been suffering from it but after I got CC-stove I saw progress in my health. My daughter was healthy and didn't see a change on her health.
- 2) Do you think that the CC stove has affected the air quality of your home?
Yes, when I used fuel wood the room got too hot but when I use CC-stove there is no such problem. More over there is no smoke.
- 3) Do you enjoy sitting in the cooking place now? If yes, why?
Yes, I enjoy it now because as I said before there is no heat and smoke in the kitchen.

- 4) Name: Tailor James, 28 (daughter of the HH head)
Family Size: Ten family members



Firehiwot Mengesha and Wubshet Tadele with Tailor for the survey

Previous Fuel

- 1) What fuel you used before the introduction of clean cook stove? Where did you find the fuel?
We used fuel wood before we got CleanCook stove. We gather fuel wood from the forest with my mother.
- 2) What problems did you faced for the collection of the fuel?
Fuel gathering by itself is a tiresome job. Sometimes I bit my foot by my axe and suffer for a lot of days.
- 3) How long it takes to collect the fuel? Is the fuel abundant as much as you want?
It took us more than four hours and it is not abundant as much as we want.

CleanCook Stove

- 1) Do you use CC stove to make coffee or tea?
Yes, I used it to make coffee and tea.
- 2) Did you use other stove after you get CC stove? If yes, why? If yes, what type of stove you used?
I use three stones stove when I need large pot cooking. We use large pot for Genfo (traditional food) making and Genfo is frequent in our home.
- 3) Do you light CC stove in the night for insects or snake protection? Does it protect against insects and snakes?

- We believe it can protect us from insects and snakes but we don't use CleanCook for protection because of the limited ethanol.*
- 4) Do you use the CC stove indoors?
We used it inside but when we have a family get together in open air we use it there.
 - 5) What do you like about the CC stove?
It doesn't have smoke and too much heat that make the room uncomfortable.
 - 6) How efficient is the CC stove in comparison to other stoves you have used?
Yes, it is efficient because it is comfortable to use and quick.
 - 7) How safe is the CC stove in comparison to other stoves you have used and if it is safer, in what ways is it safe?
We have been using it and we didn't see any danger on it so it is safe.
 - 8) Do you prefer this stove from other stoves for future use?
Yes, I prefer it.
 - 9) What features would you like to see on the stove or how could this stove be modified to meet your cooking needs?
The only modification I want is a system to support large pots which we usually need.
 - 10) Do you move the stove from place to place?
Yes, I move it.
 - 11) What do your neighbors think about your CC stove? Do you share the stove with neighbors/friends?
They like the stove and they want to have their own. They come to my house and take the stove to their home when I am not using it.
 - 12) Would you recommend this stove to relatives to use?
Yes, I recommend it because it saves cooking time and it is a good stove.
 - 13) How do you rate the fuel consumption of Clean Cook stove?
It consumes a lot and a liter of ethanol for a day is not enough for us.
 - 14) Has the CC stove meet all your cooking needs? Are you able to use large pot?
No, I wasn't able to use large pots. I usually use large pot for cooking.
 - 15) Did you face any problem related to either Clean Cook stove or ethanol?
The only problem is on one of the burners, the regulator doesn't work properly and I am using only the other one.
 - 16) Do you gather less fuelwood now that you are using the CC stove? If yes, how much less?
Yes, I gather less fuel wood now. Previously I used to gather three times a week but now I gather once in a week.
 - 17) How often do you have to gather fuelwood now? How has this improved/impacted on your life?
Now I gather only once in a week and this improved my life. Gathering fuel wood makes me very tired so I couldn't able to do any cooking after I got from the gathering.
 - 18) Did you saved time after you begin to use CC-stove and gathering fuelwood? If yes, for what purpose you used the gained time?
Yes, now I gained more time for laundering and bathing of my children.

Health

- 1) How has the CC stove positively impacted the health of you and your family?
When I used three stones previously during the night the room became too smoky and my children suffer from pain and cry the whole night. But now after we have the CleanCook stove we don't have this problem and I think this have an effect on our health even though I don't understand what exactly it is.
- 2) Do you think that the CC stove has affected the air quality of your home?
Yes, as I said we don't have smoke in our home.
- 3) Do you enjoy sitting in the cooking place now? If yes, why?
Yes, we are now comfortable to sit in during cooking without any suffer.

5) Name: Mariam Babe
Family Size: Six



I appreciate the efficiency of CC stove because it needs small amount of ethanol for long time cooking and it cooks with in a short time.

---Mariam---

Mariam Cooking porridge on her CC stove.

Previous Fuel

- 1) What was your fuel for cooking before ethanol introduced? Where did you find it? If you gathered it, how long it took?
I used fuel wood and I gather it from the bush. It takes me more than five hours to collect the woods.

- 2) How would you rate the smoke level of ethanol compared to fuel wood?
Compared to fuel wood ethanol does not have any smoke.
- 3) How would you rate the overall convenience of ethanol compared to fuel wood?
It is convenient and easy to operate.

CleanCook Stove

- 1) Do you use CC stove to make coffee or tea?
Yes, I used CC stove for both coffee and tea.
- 2) Did you use other stove after you get CC stove? If yes, why?
Yes, I used traditional three stone stove when I cooked Genfo (traditional food) because it needs large pot for cooking.
- 3) Do you light CC stove during the night for insect or snake protection? Does it protect against insect and snakes?
Yes, I light CC stove during the night not only for lighting of home but also for insect protection.
- 4) Do you use the CC stove indoor?
Yes, I used CC stove both inside and out side. Especially during the night I used it out side to make coffee with my neighbors.
- 5) What do you like about the CC stove?
It is quick when I make coffee and it protects me from fuel wood gathering.
- 6) How efficient is the CC stove in comparison to other stoves you have used?
CC stove is very efficient compared to other stoves I used in its quickness and cleanliness.
- 7) How safe is the CC stove in comparison to other stoves you have used and if it is safer, in what ways is it safe?
CC stove is safest stove because you can control the flame strength and also it is possible to switch it off easily any time you want.
- 8) Do you prefer this stove from other stoves for future use?
If ethanol is available, I prefer it.
- 9) What features would you like to see on the stove or how could this stove be modified to meet your cooking needs?
It will be good if it is made to support larger pots.
- 10) Do you move the stove from place to place?
Yes, I moved the stove in and out of my home.
- 11) What do your neighbors think about your CC stove? Do you share the stove with neighbors/friends?
They said it is a very good stove and they ask me how they can get clean cook stove. In our culture we shared every thing that we have so I shared the CC stove with my neighbors, they take it and use it.
- 12) Would you recommend this stove to relatives to use?
Yes, I recommend for them.
- 13) How do you rate the fuel consumption of Clean Cook stove?
I appreciate the efficiency of CC stove because it needs small amount of ethanol for long period cooking and it cooks with in a short time.

- 14) Has the CC stove meet all you're cooking needs? Are you able to use large pot?
No, I could not use CC-stove for Genfo making because it needs large pot cooking.
- 15) Did you face any problem related to either CleanCook stove or ethanol?
No, I didn't face any problem related neither to clean cook nor ethanol.
- 16) Do you gather less fuel wood now that you are using the CC stove? If yes, how much less?
Yes I gather less fuel wood now, previously I gathered three times a week but now it is once in a week.
- 17) How often do you have to gather fuel wood now? How has this improved and impacted your life?
Now it is once in a week, before I used to gather fuel wood three times a week. This give me the chance to participate in social activities, have some time for my farming and most of all it gives better safety.
- 18) Did you saved time after you begin to use CC-stove and gathering fuel wood? If yes, for what purpose you used the gained time?
Yes, I save my time for social activity and for small farming activity.

Health

- 1) How has the CC stove positively impacted the health of you and your family?
Previously we had eye irritation and tired feeling when we cooked by three stone stove and fuel wood. Now this pain diminished.
- 2) Do you think that the CC stove has affected the air quality of your home?
Yes, we have now cleaner air in our home.
- 3) Do you enjoy sitting in the cooking place now? If yes, why?
Yes, I cook in my living room, when I used three stone stove it was difficult to sit in the living room but now there is no smoke because of CC stove so that I enjoy it when I cook with CC stove.

Summary of results

The results of the survey showed the impact of the CleanCook in the Bonga Refugee Camp. This was a very different environment for the CleanCook as it had not been tested in this kind of environment before. As the narratives show, the stove brought more or less a similar impact in each household studied. In the first part they were asked what their previous fuel was and where they find it. All of them said they use fuel wood and they find it from the surrounding woods. Everybody complained about the hard work and danger of collecting fuel wood. They said the CleanCook reduced the amount of wood they had to collect by about half. They all said fuel wood is too smoky and the CleanCook is clean and comfortable to use.

The second part was on CleanCook stove technology; in this part also we found almost the same result in each household. They used the stove for tea and coffee making and soups and they found the stove easy to use. They liked how fast it cooked and they liked being able to turn it down and off. They also agreed it is a safe stove. All of them complained it cannot support large pots which are commonly used in the camp to make their traditional food porridge (Genfo). As they said, since the CleanCook cannot support large pots they were forced to collect fuel wood even though they have access to the CleanCook stove. All of them said the CleanCook stove should be modified to support large pots.

On the health impact part most of the people said they and their families have been suffering from asthma and some complained of “body pains”. They said they observed a progress after they start to use CleanCook stove. Moreover they emphasized the clean indoor air they got in their home when they cook inside with the CleanCook stove. Even when they don’t think about the danger of smoke they like the clean indoor air because it is more enjoyable.

Even in this new environment for the stove, there was good consumer acceptance, even though it fell short on some important cooking tasks. It met all cooking needs except the large pot cooking. It was also used by some families at night for light and security from animals.