

UNHCR Kebrebeyah Camp Report
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Introduction

The UNHCR Kebrebeyah Camp, established in 1991, holds approximately 10,000 Somali refugees representing various clans. The outer walls of their housing primarily consist of roots and the upper parts of a tree to make an upside-down U-shaped hut; there is mud on the bottom half of the interior walls and the exterior walls are covered by old clothes and blankets. Some households have a small kitchen separate from their sleeping quarters; most families cook and sleep in one hut.



Typical camp homes have old clothes and blankets atop a rounded frame of roots and the upper parts of a tree.

Kebrebeyah (also spelled Kebribeyah) refugee camp is situated on arid and semi-arid land. The vegetation of the region is classified into three main physiognomic and structural types: gallery forest (5%), torn savannah (80%) and semi-arid vegetation (15%). Deforestation and subsequent soil erosion appear to be the cause of the absence of most forms of vegetation and scarce natural water sources in the areas surrounding the camp (Protti-Alvarado 5).

On 10 October 2005, James Murren and Cheryl O'Brien of Project Gaia attended a UNHCR Kebrebeyah meeting in Jijiga. The main session included an introduction of each agency's mission and individual challenges in Kebrebeyah. This was followed by a group discussion of the challenges associated with the following key issues in the camp: health, housing, education, food, and water. A total of twenty-three people were in attendance for the main session, which began in the morning and continued to the afternoon. On the evening of 10 October and through 11 October, individual agencies met with Dr. Amare Gebre-Egziabher and UNHCR Kebrebeyah Staff, including Robert Larrison, to discuss individual agency's budgetary contributions for 2006.

At the main session on 10 October 2005, several in attendance spoke of the dangers of fuelwood gathering. The following are comments from attendees.

The camp's Protection Officer, Abdul Wehab Mahdi, stated passionately, "Most of the problem is firewood collection. Six to ten hours a journey! Women and children have lots of problems with farmers. Three times a day they need the firewood! Rape victims have to go to a male doctor. Child labor and sexual abuse are related. Women and children have kidney pains and backaches from the firewood problem. They cannot go to the man [motioning to the doctor] and tell it to him. They ask for a separate woman doctor or nurse, and they ask for counseling for rape and women's issues. I asked them what they want so that I could bring it to this meeting, and this is what they say."

Tesfamariam W/Tensaye of the Administration for Refugees and Returnees Affairs (ARRA) noted, "There are some problems with protection issues. There is some rape with the collection of firewood and fetching of water. The locals live near the camp, and the women must go far for wood."

Gabush Mohammed of Hope for the Horn stated, "Girls and children spend 8 to 10 hours a day journeying to get firewood. The farmers take the wood from them. I believe the biggest challenge in the camp is the fuelwood gathering and charcoal production with the locals and refugees." Gabush said the ethanol-fueled stove can help alleviate some problems in the camp.

Abdusemed Mohammed, UNHCR Assistant Program Officer in Jijiga, reported, "The biggest challenges I find for the camp are: child labor, the rape of girls, and physical abuse while collecting firewood, especially for women and children. We need to ensure physical protection."

In addition to the demand for fuelwood, the collection of wood for huts was the major challenge to the housing issue according to one attendee, who stated, "Since the women make the huts, there is the problem of rape and assault."

Cheryl and James interviewed the camp doctor, Dr. Abebe Alemayehu, during a break from the main session. Dr. Alemayehu summarized his thoughts: "Your project is very important. Please keep up the good work. I don't know why no one has done this before. It's a no-brainer! There is the issue of energy, tremendous physical energy being lost when gathering fuel. They go for long hours. There is no time for education or for income-generating activities. There is the issue of a lack of female social workers, because of women not being educated. And there is the rape of fuel gatherers. If a woman is in the camp for a long time, she is targeted by the locals, because they know she is from the camp."

Regarding Dr. Alemayehu's statement about the lack of social workers and educated women, the director of MCDO (Mother Child Development Office, an NGO working to end Female Genital Mutilation in the camp) stated that their biggest problem is the need for more female social workers. Out of 15 social workers with MCDO, only 3 are female due to a lack of education among girls. Other attendees mentioned that it is difficult for the girls to go to school when they have to help gather fuelwood or fetch water.

As evidenced by the statements above from those who work closely with the Kebrebeyah refugees, addressing the problems associated with fuelwood gathering is paramount to improving the lives of refugees in the UNHCR Kebrebeyah Camp. Project Gaia's pilot study of the ethanol-fueled CleanCook (CC) Stove seeks to bring an alternative cooking fuel to refugees in order to alleviate the environmental and health problems related to fuelwood gathering.

11 October 2005 Narratives

On 11 October 2005, Melat Esayas, country manager for Project Gaia, James Murren and Cheryl O'Brien visited 6 out of 7 zones of the UNHCR Kebrebeyah Camp to assess household use of the CC Stove and performance of the Surveying and Quality Control (QC) Team. We did not visit Zone 5 due to time constraints. A total of 130 CC Stoves are being tested in the camp. The two Project Gaia field surveyors present were: Ibrahim Ahmed Ismael and Mustafa Kasin Favah. Ibrahim and Mustafa translated from Somali to English; they are both refugees living in the camp. In addition, Melat understands a little Somali. We were also accompanied by the Project Gaia Quality Control staff person, who is a former employee of Hope for the Horn. In total, we visited 20 study households, and we spoke with neighbor women of some of these study households.

The following are narratives from 11 October 2005 at the UNHCR Kebrebeyah Camp taken from the notes of Cheryl O'Brien. The narratives are short, because we needed to visit as many households as possible and we did not follow a strict format of questions. In general, we spoke with the people about their experience with the CC Stove, cooking, and fuelwood gathering.



Zone 7, Fatumo Abdulahi with Surveyor Mustafa. This is Fatumo's shop. She uses 10 L of ethanol in 7 days. She would like to have more ethanol. Here she shows her injera pan on top of a roundstand.



Zone 7, Lisho Nesib and her child. She uses the CC Stove three times a day, and she has enough ethanol (1 L per day). Her pot is black from her former stove. Mothers often cook while carrying their babies or while the children are in the room. Noting that indoor air pollution is the leading cause of death in children under age 5 in "developing" nations, it is especially important to offer alternative "clean" cooking fuels (Bruce 14). Lisho's husband is quoted below.



Lisho's husband sits outside as Lisho exits their home. Lisho's husband says, "The CleanCook is much faster than the traditional stove. I like the CleanCook better."

Zone 7, Omar Hujale with Melat Esayas (Project Gaia country manager) in Omar's kitchen, which is separate from her home. She uses the CC Stove 4 times each day. In 6-7 days, her 10 L of ethanol is used up. Omar says, "Thanks to Allah and to the leaders of Project Gaia for bringing the stove to my house. It saves me from going very far to get wood, and I no longer have eye irritation. Now I have more time for a social life and my kids."

Outside of Omar's home, 3 neighbor women told James Murren that they want a CC Stove, because it cooks very fast.



Zone 4, Rukuja Abdi Muhamed with Surveyor Ibrahim. Note the mud stand she made for the CC Stove. She said she likes the stove and uses it 3 times a day. She said she needs more ethanol, because after 5 days her 10 L supply is used up. She cooks for 15 people. Before the CC Stove, she used fuelwood. She said, "We [the women] gathered fuelwood together for safety. The hot sun is a problem with fuel gathering, so we had to take a rest when gathering."



Zone 4, Hali Sheikh Abdulahi makes tea on the CC Stove for her children. She says she will make a mud stand for her CC Stove and that she uses her 10 L of ethanol in 7 days. “I no longer gather fuelwood since I received the CC Stove. When I gathered wood, I was very tired. I had to walk very far. I left in the morning and returned at 3 pm. I gathered wood for 5-6 hours. With the wood stove, I had eye irritation. Now I can sit close to the CC Stove without problems,” she says. In response to a question from Hali, Melat Esayas explained how to turn the stove upside down and that Hali can use water to put out the fire if needed. Then, Hali’s neighbors came and told Project Gaia Staff that they also want stoves.



Zone 4, Halimo Hassan Nur. She stopped gathering wood once she received the CC Stove. Note the blackened walls above the mud and the blackened pot, which she says is from the smoke and soot from her former wood stove. She uses 10 L of ethanol in 5 days, because she also cooks for her relatives. She cooks on the CC Stove 4 times each day: morning, noon, evening, and midnight (due to the fasting of Ramadan from sun up to sun down). She explains that children

younger than 7 do not fast. She states, “I collected wood alone for 6 hours at a time. There is rape sometimes of girls and women by the locals. Sometimes the place where you collect wood belongs to the locals. They say they’ll kill you, they’ll rape. Sunis have been raped.”

Surveyor Ibrahim looks up at the ceiling of Halimo Hassan Nur’s home. Note the blackened ceiling from cooking with a wood stove.





Zone 4, Somali refugee women with Cheryl O'Brien of Project Gaia. These women are neighbors of Halimo and Amar, both of Zone 4. They were waiting outside of Halimo's home, where they spoke with O'Brien. They then walked with us to Amar's home, where they continued speaking with O'Brien. These women spoke in agreement about women and girls being raped and beaten when gathering fuelwood. The woman standing to O'Brien's right has herself been beaten by locals for collecting

fuelwood. She said, "The landlords hit the women with sticks. I was beaten by farmers. I had marks and bruises on my body; I felt a lot of pain. The farmer owns the land. There is some rape. Women and girls are raped." When O'Brien asked how they try to protect themselves when gathering fuelwood, the woman crouched down and tip-toed, saying, "We sneak like this and hide in groups." All of the women O'Brien met said they want an ethanol-fueled stove so they too will not have to face the dangers, physical pain, and time constraints of collecting fuel.



Zone 4, Amar Yuusuf Elmi being interviewed by O'Brien. Amar's hands and wrists are badly injured from a fall sustained when carrying a large load of fuelwood when it was rainy. Dried up blood was visible on her hands. Amar said, "My hands are broken, so my son is cooking for me. I cannot cook with my hands. I gathered 3 or 5 loads/day, two days each week before the ethanol stove. I like the stove, but in 6 days, I used up the [10 L of] ethanol. Then I had to get wood, and that's why I have this problem with my hands." She added, "Landlords can kill you and take your wood." Fuel gatherers carry several kilos of firewood on their backs and walk many miles, causing dehydration, physical pain and injuries, especially to their back, legs, and kidneys, according to Doctor Alemayehu of the Kebrebeayah camp.



Zone 4, Hali Hassan Nor with her son Ibrahim, surveyor. Hali makes tea and porridge on her CC Stove for the children's lunch. Children do not fast during Ramadan. Hali has 10 children, including the Surveyor Ibrahim. Hali says, "I like the stove very much. Before we had the stove, my two daughters collected wood three days each week. They would make two trips each time [day] from morning until 7 pm. The wood lasts about 5 days for 10 people. The ethanol lasts 10 days, because we still use the wood too. Sometimes Ibrahim and I collect wood in addition to my daughters." Ibrahim declares, "There's no problem with males collecting wood, because males can fight back. So the farmers don't bother us like they do the women and girls." Hali notes, "I put the stove on a tray to protect it from rust, but I will build a mud stand for it."



Hali seated beside a woman-load of wood that she recently collected on her own to supplement the CC Stove. While her son has collected wood for the household, he adds that it is the primary responsibility of women and girls to gather fuel for cooking.



Zone 1, Roda Maxamed, daughter of Mako Kamil Jibril (primary cook), shows the injera pan they use on the CC Stove. This home is made of atypical materials for this camp. It is also atypical in that it has fairly good ventilation; there is an opening between each wall and the metal roof. They use charcoal to supplement the CC Stove. Roda says, "The CleanCook Stove is better than the charcoal; it is quicker and cleaner. Also, the charcoal causes eye irritation." They did not use wood.



Zone 1, AbdiLahi Adan Osman, House No. 217. She is a relative of Surveyor Ibrahim and cooks for 8 people. AbdiLahi states, “I collected wood before the CleanCook Stove 2 times each week. Most times I was gone from 7 am to 8 pm. Sometimes I was only gone for 5 to 8 hours. The problem is scarcity of wood. It takes a long time to search for wood. Now I do not use wood since I have this stove.”



Showing pride in her CleanCook Stove, AbdiLahi says she built this wood stand specifically for her CC Stove.



Zone 1, Asha Elmi Abdulah with her son Mustafa, surveyor. They are of the Marahan tribe. She is cooking camel’s milk on the CC Stove. Asha says, “I use the CleanCook Stove and I like it. But, there is a shortage of ethanol. I’m going to make a table for the stove.” She states, “I collected wood before, and it was heavy on my back and it left marks on my neck.” Asha showed us where she had marks from her collarbone over her shoulder due to the ropes that are tied to the load of wood. She adds, “I collected wood 4 times each week for 5 hours each time. My 3 daughters also collected wood. They are 14, 15, and 20 years old.” Cheryl O’Brien asked if we could speak to one of the daughters who gathered wood. Note the daughter’s narrative below.



Zone 1, Nimco Kasin Farah, 14 years old, daughter of Asha Elmi Abdulah. Nimco told us, “My sister Sahra [Kasin Farah, who is 15] and I miss school 2 or 3 days each week to collect wood. Missing school is a problem. Also, I get backaches and leg pain from collecting wood. We walk very far and carry 4 or 5 kilos on our backs. I fell down one time carrying wood, and I have a scar on my head.” Nimco pointed to the scar (visible in the photo) near the center of her forehead. When we asked about missing school, Nimco said, “Teacher asks us, ‘Why don’t you come to school?’ Missing school to collect firewood hurts our grades.” Asha, Nimco’s mother, interjected before we left her home, “I had eye irritation and coughing from the wood stove. I don’t have eye irritation or coughing with the CleanCook Stove.”



Zone 1, wife of Koos Ali Yusuf (Chairman of the Refugee Committee) listens to Surveyor Ibrahim's questions. Koos's wife cooks for 10 children. Ibrahim says she cooks for *at least* 12 people, including adults. She says, "I like the stove. It's very good. We need more stoves. The neighbors want stoves. I would like to have another stove. I cook tea, injera and milk on the stove." She adds, "Before this stove, we sometimes bought charcoal, but we mostly used wood.

Before we had this stove, I had coughing and eye irritation. I had back pain from collecting wood. I collected wood for 8 hours, 3 times each week."



Zone 1, Amina Sheikh Mohamed. Surveyor Ibrahim is helping her cut potatoes while she speaks with us. She explains that although it is fasting (Ramadan), she cooks all afternoon for the children, who do not fast, and for the adults, who break the fast at sundown. Amina says with excitement, "Before I used wood for cooking. Look at my ceiling! It is black from the wood. I had eye irritation, back pain, and coughing from using wood. Now I do not use wood. I have no eye irritation and I can sit beside the CleanCook Stove. I have no coughing with the CleanCook Stove. Now I rest with the CleanCook Stove, because I do not have to collect wood. And it is faster cooking with the CleanCook Stove."



Zone 6, Halimo Hassan Kahin (mother).

From left to right: Halimo, her young child, and her daughter Raxma. Halimo says, “Ten liters for 10 days is enough ethanol, because we are fasting, so I use the CleanCook Stove one time each day. But, this is not enough ethanol when we are not fasting. I cook for 4 families.” She counted and told us she cooks for one family of 8, one family of 7, one family of 5, and one family of 4. This is a total of 24 people for whom she cooks. Halimo states, “Before, we used wood. It took us 7 hours, 3 days each week to collect wood. I’m happy because the CleanCook Stove has replaced the wood and we do not have to spend time collecting wood. We do not have to travel far for wood now. They are killing and beating the women and girls who collect wood.”

Zone 6, Halimo’s daughter Raxma. Raxma tells us how she was beaten with sticks by three local men while gathering wood one day on her own. She sustained many bruises on her legs and her forehead was cut open, requiring medical attention. Raxma pointed to the horizontal scar on her forehead caused by the beating and motioned her hand around her head, saying, “They [the medical staff] put a bandage around my head.” Raxma added, “After they beat me, they stole my firewood.” After a pause, Raxma said, “I have heard of others being raped when gathering fuel.” Raxma then called for her 18 year old sister to come speak with us. Raxma said that she and her sister know someone who was raped.



Raxma’s sister. When one of the two male Somali surveyors asked if she knows anyone, without giving a name, who was raped while gathering fuelwood, Raxma’s sister said that her friend was only beaten when gathering fuelwood. While there seemed to be a verbal disagreement between Raxma and her sister, there is a possibility that there was an incorrect translation from Raxma about knowing someone who was raped or a misunderstanding on Raxma’s part as to her sister’s friend. However, based on testimony from the camp’s doctor and other advocates at the UNHCR meeting a day earlier, it is possible that Raxma’s

sister did not confirm that she and Raxma know someone who was raped while collecting fuelwood because of the stigma of rape and because Raxma's sister may herself have been a victim of rape. Also, it is often difficult for women and girls to speak of rape to male translators or doctors as was noted at the meeting.



Zone 6, Zaynab Mohamed with one of her 8 children. (Zaynab's husband is Aymad Abdi Jele.) Zaynab shares her CleanCook Stove with her grandmother and other relatives' neighboring households. Zaynab says, "I stopped collecting wood since the CleanCook Stove. I collected wood for 8 hours, 2 or 3 times a week. I had pain in my back, kidneys, and legs. Collecting wood is dangerous, because the owner of the land beats people and takes the wood we collect. It has not happened to me, but it

happens." Before our conversation ended, Zaynab said, "Allah gives us a helping hand by giving us the CleanCook Stove."



Zone 6, Fatumo, 19 years old (seated left in red) and her sister Asha Alimed, 16 years old. (Their father is Ahmed Mohamed Zayid.) Both daughters and the mother (who is not home when we visit) cook. Only Fatumo cooks with the CleanCook Stove, since only she took Project Gaia's training. They never used fuelwood. They continue to buy charcoal to supplement the CC Stove, and they use the charcoal stove 3 times a day. Fatumo cooks on the CC Stove once a day, because she is the only one who is trained to use it. Since she has been using the CC Stove for only a short time, Fatumo says she is still becoming accustomed to it. Fatumo says, "The CleanCook Stove is faster than the charcoal stove." Both Fatumo and Asha seemed shy. A new surveyor of Zone 6 will train Asha and the mother, so that they can also use the CC Stove. This surveyor will also monitor Fatumo's comfort level in using the CC Stove.



Zone 3, Fatumo Sheikh Ahmed. Due to the heat, Cheryl O'Brien of Project Gaia interviews Fatumo outside with other Gaia staff. Fatumo uses the CleanCook Stove 3 times a day. Fatumo told us, "When I collected wood, I had back and kidney pain. The farmers beat you and take your wood." When asked if she had ever been beaten while gathering wood, Fatumo exclaimed, "Yes, they beat me!" She raised her fists and said, "They punched me and hit me with sticks. I had bruises on my back and legs."

Zone 3, Maryama Diriye Mo'alin. Maryama states, "I use only the CleanCook now. I mostly cook injera, rice, and tea." She only uses one of the two burners, because she says she wants to keep the stove clean. She adds, "Before I used wood. I had back pain from collecting wood 8 hours, 4 times each week. From the time saved from not collecting wood with the CleanCook Stove, I take care of my 4 children and family. I have no back pain now."



Zone 2, Hassan Jama Nur. Hassan says, "I cook 3 times a day on the CleanCook Stove, and I need more ethanol. I no longer use firewood. Before, I collected firewood 7 hours a day, 3 to 4 times a week. I left early to collect firewood and my children stayed home alone. They were absent from school, because I had to collect firewood. Now I cook food early so the children go to school." She has 11 children; her youngest child is age one. She adds, "My family appreciates this stove. And our neighbors want a CleanCook Stove."



Zone 2, Hinda Abdi Hayi with her child. As seen in the picture, Hinda has the heat regulators on the stove facing the wall. She says this prevents her children from moving the heat regulators. Hinda states, “Before I used a charcoal stove. Now I only use the CleanCook Stove. There are 2 families living here. The other family still uses charcoal [but outside now]. This is better than the charcoal stove. I had coughing and eye irritation with the charcoal stove. I no longer have those problems, and the CleanCook Stove is safer for my children than the charcoal stove.” The other family was cooking on the charcoal stove outside of Inda’s house during our interview.

October 2005 Camp Assessment

The narratives alone speak of the positive effects of the CleanCook (CC) Stove in the Kebrebeyah refugee camp. The twenty homes that we visited prefer the ethanol-fueled CC Stove to their other stoves and fuels. Women and girls say they have more time with the CC Stove to care for children and attend school; they speak of the risk of rape and being beaten when gathering fuelwood. Their neighbors asked how they too can receive a CC Stove.

Following the home visits, we attended the individual agency meeting with UNHCR. The UNHCR Kebrebeyah staff noted that since the Somali study participants are sharing the CC Stove and cooking for several families on it, they must value the stove. We were told that the Somalis assist each other and only share something if they like it; if they do not like something, they will sell it. Project Gaia’s plan for 2006 is to distribute a total of 400 new stoves to UNHCR’s Shimelba and Kebrebeyah camps. The success of the studies and the need exhibited in each camp will determine how we distribute the 400 stoves between these two camps.

Based on our home visits, we determined that the surveyors need to clarify to the households that they should not place large pots on the roundstands, because that causes a loss of heat and large pots can be set directly upon the stove. In the households where this was observed, such as Zone 2, Hinda Abdi Hayi with her child (the last photo above), this explanation was given and was accepted by the participants. We asked some households if they had round-bottomed pots. They did not have any, nor did the surveyors believe anyone used round-bottomed pots. Since we did not see round-bottomed pots in any homes, we decided to no longer provide roundstands to this population, since the roundstand is designed for round-bottomed pots. If households continue to use roundstands for flat-bottomed pots, they will lose heat on the CC Stove. The Project Gaia staff and partners will follow-up to ensure that all households with roundstands either return the roundstands or use them properly with round-bottomed pots. Returned roundstands would be redistributed to the UNHCR Shimelba Camp, where participants use round-bottomed pots daily.

As shown in the first photo of Zone 7 (page 3) of Fatumo Abdulahi with Surveyor Mustafa, the Somalis use a smaller injera pan than most Ethiopians. Therefore, this model of the CC Stove is suitable for cooking injera. The use of the smaller injera pan can be adapted to other camps like Shimelba, where refugees use a large pan that does not fit on their CC Stove. Injera cooking is the main reason Project Gaia study participants in the Shimelba Camp still use fuelwood to supplement the CC Stove. Dr. Amare of UNHCR-RLO stated that he wants to eliminate the use of fuelwood for cooking injera in the Shimelba camp by combining the CC Stove with a smaller injera pan. The use of the smaller injera pan in the Kebrebeyah camp can serve as a model to other refugee populations that are not accustomed to a smaller pan.

We arrived at the Kebrebeyah camp two weeks after the introduction of the CC Stove into the homes. We began the pilot study in Kebrebeyah with four surveyors and one QC, but prior to our arrival, two surveyors moved from the camp. As a result, the zones of these two surveyors had not been visited by a surveyor until our arrival, two weeks after the start of the study. Hence, as seen in Zone 6, Fatumo (a 19 year old daughter) still does not feel as comfortable as she should in using the CC Stove. Following the training, she did not receive the standard follow-ups by the assigned surveyor. For the first few weeks of the study, the surveyor should have visited each home weekly and possibly daily depending on the comfort level of the study participants. This lack of supervision was due to the loss of two surveyors as well as the lack of initiative by the Quality Control (QC) staff person to properly monitor the situation and communicate with Project Gaia or UNHCR. In addition, the QC had never given the surveyors the weekly fill sheets or biweekly surveys. The surveyors had only received the baseline surveys, and the QC did not ensure that the surveyors accurately completed the baselines. Based on this assessment, Project Gaia Staff and Dr. Amare of UNHCR decided to discontinue the services of the remaining two surveyors and the QC. We decided to hire a new team of surveyors and QC that will be closely monitored by a UNHCR Staffer who works in Jijiga. The new Surveying and QC Team will be required to visit each study household, complete new baseline surveys, check the comfort level of participants, and closely monitor their use of the CC Stove. The UNHCR staff person in Jijiga will communicate regularly with Dr. Amare and Melat Esayas. Project Gaia Staff plans to visit the Kebrebeyah camp more often than the other participating UNHCR camps due to the challenges faced thus far.

According to a 2003 UNHCR document, most of the Kebrebeyah refugees belong to the Issaq and Gedebursi clans, followed by the Issa, Merihan and Harti clans. The Issaq, Issa and Gedebursi clans come from northwestern Somalia, while the Merihan, Harti and Hawiya clans are from southern Somalia. The Abaskal clan comprises 90% of the population in the Wereda district of the camp, and the Akishu and the Issac comprise the remaining 10% of that district (Protti-Alvarado 5). Dr. Amare notes that refugees in some previously closed camps came to Hawiya, an area of Kebrebeyah named after their clan. At the 10 October 2005 meeting, the issue of conflict and discrimination was raised concerning children of different clans walking to school. Due to the sensitive issue of discrimination among clans, Project Gaia and UNHCR must monitor the distribution of the CC Stoves so that all clans with qualifying households receive the opportunity to participate in the study.

Representing Hope for the Horn, an agency chosen to coordinate Project Gaia efforts and report to Dr. Amare on the CC Stove's success and problems, Gabush Mohammed said at the 10 October 2005 meeting that they chose families who planted trees in their backyard to be pilot study participants for Project Gaia. During our walks through the camp zones to visit study households,

it was brought to Project Gaia's attention by some refugees that one particular clan represents the majority of all study participants as well as the Refugee Committee (which is composed of refugees). We were also told by these refugees that the Refugee Committee submitted select names of qualifying refugees to be study participants, so that not all qualifying refugees from other clans were submitted to Hope for the Horn. While we could not verify these claims during our short visit, in an effort to prevent any possible problems between clans and ensure that qualifying refugees will be able to participate regardless of clan, future baseline surveys in the Kebrebeayah camp will ask for the name of the study participant's clan, so that we can monitor which clans are or are not receiving the CC Stove. While maintaining the requirements to qualify as a study participant to encourage environmental action by the refugees, we will review whether or not future studies can better reflect the clan composition in this camp.

Policy Implications/Recommendations

Given the acceptance of the CC Stove by camp residents and the resulting decrease in fuelwood gathering by those families using the stove, the UNHCR should consider expanding its use of the CC Stove to other refugee camps within and outside of Ethiopia, wherever a supply of ethanol is available for purchase. In Kenya, as in Ethiopia, there is an existing domestic ethanol supply with potential for expansion that could be used to fuel the CC Stove in UNHCR camps. The 2006 refugee population in Ethiopia has been estimated at 120,000, while Kenya's is estimated at twice that amount. The Kenyan refugee camps, like those in Ethiopia, suffer from an extreme shortage of gatherable biomass. Project Gaia has begun activities in Kenya with a small pilot study in the Nyumbani Village, an institution that provides care and housing to HIV/AIDS mothers and children.

In Kenya, UNHCR purchases and imports fuelwood into several camps. It may eventually have to do this in Ethiopia. "To try to reduce the number of women being sexually assaulted as they collected firewood outside two major camps in Kenya, UNHCR paid local contractors to haul the wood directly into the sites" (Wilkinson 21).

Instead of contracting for the purchase of wood, a switch to the CC Stove would decrease or eliminate the need for fuelwood, whether purchased or gathered. The switch to the CC Stove decreases or eliminates the need for women to travel out of the camp to gather fuelwood, if fuelwood is not brought in. This would decrease or eliminate accidental injuries, violent confrontations, and sexual assaults of women and children. This would also decrease the negative effects or "fall out" in the community associated with competition for the use of scarce biomass resources. Since it is also very difficult to assure that fuelwood is managed and harvested sustainably, it would also eliminate the likelihood that continued reliance on fuelwood would continue to degrade the environment.

Also very important is the impact on health. Use of the CC Stove would improve indoor air quality in the camp homes and general ambient air quality in the camp, whereas reliance on fuelwood continues to put smoke in homes and the camp environment, exposing camp residents to the risk of health problems associated with air pollution.

It should be clearly stated that health and resource conflict problems that come with the use of fuelwood place both administrative and financial burdens on the UNHCR. These are often “hidden costs” that are not quantified and thus not properly considered.

Thus, it may be very beneficial for the UNHCR to purchase ethanol rather than fuelwood and purchase or facilitate/assist in the purchase and installation of CC Stoves in the camps. It should be noted that the stove used for the Kebrebeyah study is made of high quality materials and has a 10-year life. A CC Stove especially designed for camp use could be designed for either a longer or a shorter life, with cost of the stove body the key variable. While a 2-burner stove is much appreciated by camp residents, a 1-burner stove is adequate.

In the individual agency meeting with UNHCR on 11 October 2005, there was a suggestion by a UNHCR staff person that Project Gaia should hold a study in Jijiga with the local population. The Kebrebeyah camp is located 55 km southeast of Jijiga. It was suggested that if we were to conduct a study with local residents, then we might want to select households that adopt children of parents with HIV/AIDS. Indeed some Jijiga families are adopting these children. Such a study could decrease the locals’ need for firewood gathering and encourage adoption of these children. Currently, the deforestation in the area is so extreme that the need for firewood of both the locals and refugees is harming the environment and causing conflict. However, Project Gaia’s current commitment is to supply UNHCR with stoves and ethanol, and we currently do not have the staff or resources available to expand into Jijiga. Yet, once commercialization of the CC Stove occurs and the stove is produced within Ethiopia, Project Gaia would welcome collaboration with UNHCR partners and others to bring stove and ethanol distribution to local populations living near UNHCR camps. This would increase the likelihood of being able to reverse the process of deforestation around the camps and further reduce conflict between locals and refugees.

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Note: Photographs in this paper are by Cheryl O’Brien and James Murren, except for two of the four photographs (on pages 7 and 8) with the date/time visible on the photo. These were taken by Melat Esayas.