



Field Reports of Richard Kizito
with pictures
of stove and water heater projects at the
New Mother Care Home
and Primary School

Kagando Rural Development Center
Kasese, Uganda

A project funded by the Dorothea Haus Ross

Report of Richard Kizito, August 21, 2010

My objective is to construct eight domestic stoves and one water heater at the New Mother Care Home and four institutional stoves with two water heaters at the Primary School and Vocational School.

All necessary material were to be purchased and delivered to KARUDEC by Richard Kizito. The arrival of materials was witnessed by Mr. Wilson Maali, Deputy Director of KARUDEC. Mr. Maali is the person in a blue T-shirt in the picture at the right.

Site work started on the 17 May 2010. As agreed with KARUDEC, the work started at the New Mother Care Home, where all in residence on that day welcomed the project and participated in all possible site work as shown in the photos below.

The work began with sensitizing women to the importance of energy saving stoves and water heating. The technology of cooking and heating water at the same time was explained to them.

Mothers were very positive and willing to have stove trainings conducted in their facility for them to acquire skill so that they could save fuel and time, while others can earn a living by starting a stove building business in the community.

Construction started on 18 May. As depicted in the pictures below, everybody on site participated willingly wanting to see how the stoves work.



A warm welcome was received at KARUDEC, as construction materials were off loaded. Staff and administrators are standing next to the briquette truck.



The kitchen prior to installing improved modern stoves and water heating system.



Richard Kizito at work on building the stoves.

Construction of the water heater started after completion of the stoves. The principal is: heat and gases are directed into a well-laid chimney pipe, which carries them in one direction – out of the kitchen. As the hot gases are being pulled upwards through the chimney structure, they come in contact with the stainless steel water tank. Water in the tank is heated according to the amount of heat generated from the stoves and the duration of burning.

The water supply pipes and taps will be installed in the marked points later, after completing the cement work. The water pipes will run from a nearby water point. The water point is far away -- 57 meters. Installation of the waterline has to be worked on together with the Mother Care House administration.

Report edited by MJ Ebenhack for clarity.



Improvements to the platform, as requested by the mothers, to enable them to comfortably cook on the stoves.



The kitchen today, after installing the stoves and water heater. The green tap in the center is for hot water.





Report of Richard Kizito, August 25, 2010

After installing the water heater, I discovered that the New Mother Care Home had no incinerator. Thus, I decided to build one incurring all extra costs, since mothers didn't have this necessary facility. I designed a way to use the water heater structure to serve this purpose. The advantage is that more heat will be generated to heat the water in the tank.

The walls of the incinerator/water heater are built with fire bricks and fixed with fire cement mortar (both brick work and plaster). A chimney pipe from the incinerator delivers heat and gases into a second chamber where the water tank is situated.

Mothers have been dumping wastes into a pit latrine, causing foul odors throughout the facility from decomposing material. My innovation will eliminate odors, and at the same time eliminate the costs of building a separate incinerator that KARUDEC would otherwise have to bear. Mothers will have a convenient place to destroy sanitary napkins, needles and other medical products, which put the Home at risk.

It will be the Warden's responsibility to train all residents on how to use the incinerator. Posters with clear instructions on how to use the incinerator will also be posted.

After completing work at Mother Care Home, we will be ready to start on the Primary and Vocational School installations. Materials are already purchased: construction materials, huge stainless pans, and tanks.

Report edited by MJ Ebenhack for clarity.



The Warden of the New Mother Care Home and residents attended a demonstration/training of the incinerator. The Warden will encourage residents to use the incinerator and provide ongoing instruction.



Construction of the water heater in progress. The stainless steel tank is embedded in the fire bricks and fire cement plaster; pipes not yet installed to supply hot water.



The combined water heater and incinerator designed by Richard Kizito.

The Kagando Primary School Kitchen

Pictures sent by Wilson Maali, Dec. 21, 2010



The contractor building the new kitchen at the Primary School, (in white shirt) confers with other KARUDEC staff members. They are standing in front of a dormitory (hostel) for boys.

Report of Richard Kizito, January 19, 2011

I arrived on site Sunday late in the evening. The following Monday we planned to work at the New Mothers Care Home. However, the Warden had just left so nobody was there for us to gain entrance (there were two mothers in the rooms who told me).

Chimney pipes will be fixed after the plaster dries.

Photos 1 & 2 - The fitting and fixing of the tank.

Photos 3 & 4 -- Plastered walls of the stove

Report edited by MJ Ebenhack for clarity.



Report of Richard Kizito, January 20, 2011

Today I have managed to install the pan rings, the facing tiles, the chimney pipes, and finish the interior of the stoves. Additionally, I visited one of the women's organizations for the purpose of training them on rocket stoves and energy businesses.

Would you agree with me that we needed a community training to introduce rocket stove technology and energy businesses? This will help us a lot with technology dissemination and helping people to make good use of stoves as a means to reduce poverty, tree cutting, and respiratory diseases. Next Friday would be the day to have a leaders meeting to find a way forward. The women's organization leader told me, "This is a good time for having meetings because it is the harvest season when both wives and husbands are in at home." Please advise me.

Tomorrow I have made arrangements to meet the leader of the Mothers Union for the same purpose. If I can educate these two big women's organizations, I think the message will reach our targeted community.

Let's pray that tomorrow we get the cement work finished. Then we must wait for the walls to dry and fix the water pipes.

Report edited by MJ Ebenhack for clarity.



Report of Richard Kizito, January 21, 2011

My work today has been so tedious but I have made good progress as you can see in the photos I am sending. I have managed to fit in the pans and finish installing the top rings.

We have had a couple of groups of visitors about every hour, mostly whites and a few blacks, wondering where we got the technology! This time it's unbelievable the stoves and water heating tanks are already in place. Kagando Primary School has the system installed! Thanks to everyone out there who has supplied their time, money, and support for this project.

It's nice to send to you this message as we are about to say good-bye to the stove project at Kagando.

Photo 1 -- Fitting the pans

Photo 2 -- The pans in their stoves.

Photo 3 -- The newly laid concrete platform around the stoves

Report edited by MJ Ebenhack for clarity.



Report of Richard Kizito, February 11, 2011

Most of the time I have been at Kagando doing my duty. Unfortunately the kitchen work had not been finished, which has kept me from doing my final work of transferring water from the main line to the tank in the kitchen and from there to the supply points. There will be one tap for girls and one tap for boys on the other side. The School Director has been with me as work nears completion. As you may guess, it has not been easy finishing in the planned time. You can see the current stage of the kitchen to date in the photos.

On Monday I will be traveling back to Kagando. Hopefully by then the painting will be completed so we can install the pipes inside the kitchen. Outside work is being done to lay the supply pipe as you may see it in the photo below.

Mothers Care Home stoves were fixed during this time. There were few residents during the time I was there, allowing me to do my work well. Picture # 1 (opposite page) is the inside of the new lining for the stoves.

Report edited by MJ Ebenhack for clarity.





Rebuilt charcoal stoves. The lower stove is a small version, requested by the mothers.



Report of Richard Kizito, February 24, 2011

I have managed to remove the tanks from the walls. This took me time, because I had made the concrete strong. I have taken them to the station where gas and welding is done to fix the parts that needed repair (as you can see in the photos).

Report edited by MJ Ebenhack for clarity.



Report of Richard Kizito, February 25, 2011

Today I have managed to re-install the tanks in the stove chimneys, re-brick and re-plaster the walls. Laying and connecting water pipes has been done. To accomplish this, I have needed some more materials such as more bricks (since during the extraction of the tanks many bricks were broken). I don't mean that more project funds are needed; I have assumed these costs myself.

Tomorrow is the day for testing everything. The school staff and some members of the management team have been invited. Being a weekend, all boarding pupils will attend this important occasion.

Report edited by MJ Ebenhack for clarity.



KARUDEC's Financial Controller, Mr. Sezi Bush.



One of the pupils at Kagando Primary School visiting the kitchen.



Report of Richard Kizito, February 26, 2011

Let me take this opportunity to inform you that the long awaited stove project has come to completion. The official opening was yesterday, Saturday, February 26. Functions took place at the school's new kitchen, as supper was being prepared for the pupils.

Earlier, the Head Mistress was at the site and apologized for not being able to attend the inauguration of the stoves because she was going out for treatment. Her deputy attended with other staff. Because it was a weekend, all boarding pupils attended. Sets of seven students entered along with their matron to see the stoves, and then moved out to let the next group in.

First, I instructed the cooks on how rocket stove technology works; then how to prepare the kitchen, the fuel, and how to cook the food. The cooks prepared 30 liters of water for posho, which boiled in 28 minutes. They complained about the time being long, but it was because it was the first time. I told them that with continuous cooking, less wood will be needed and cooking times will decrease. I demonstrated other types of fuel that can be used in rocket stoves to reduce the cutting of trees for fuel.

The Deputy asked me to come another day next week to revisit this demonstration to ensure quality and full understanding of how to use the technology. It came to my attention that I need to add more pipe so that all smoke goes out of the kitchen.

I was at the Mother Care Home last Tuesday. The mothers told me that those with little resources would like to have a smaller charcoal box. This would mean making smaller clay lining as you see in photo the photo I am sending. I made three out of six stoves of the smaller size. The remaining three are the size of those in the photo I sent to you last week.

On Monday I will be getting all receipts and will take them to Sezi on Tuesday. While at KARUDEC I will make sure all key points on the stoves are fully functioning.

Thanks for having confidence in me when you told Sezi that I will do this work as required. Mr. Sezi thanked me last Friday for not letting you down and being trustworthy.

Report edited by MJ Ebenhack for clarity.

The school cooks preparing posho (maize porridge).



The School Matron takes a turn using the stove.





Boarding school children gathered hot water for tea, for washing, and cleaning. “The students were happy to have warm water; the boys were singing and jumping inside the kitchen. It was a moment of joy. Everyone was busy getting water for various purposes,” reported Richard Kizito.





Splitting wood into 18" (45 cm) length for use in the stoves.



Bundles of reeds that are also burned in the stoves at KARUDEC.

Report of Richard Kizito, March 9, 2011

Let me start with the Mothers Care Home stoves. I constructed the “feet” for the pots to rest on, as you requested. They are of reasonable size and height. Pans were delivered to the kitchen. The KARUDEC manager later handed them over to the Caretaker of the Mother Care Home, Madam Nyangoma, who is pictured in the photo below.

At the Primary School there are two taps: one in the front of the kitchen for girls and the other on the side of the kitchen for boys. Pictured below is the Deputy Headmaster checking the tap.

In terms of cooking times, this will be reduced as the stoves are used. Last Friday 30 liters of water boiled in 20 minutes. This is a good progress. Now that the chimneys are fully installed, there will be better draft cooking times will improve even more. As the brick walls begin retaining heat and the cooks gain skill operating the stoves, cooking times will be even better.

You wanted to know how long it takes to heat water in the chimney hot water tanks. Generally it takes two hours of cooking time. At the Primary school it takes approximately one and a half hours to prepare lunch and it takes another two and a half hours to prepare supper. Last week, when the tanks were completely filled, by the time lunch there was ready the water in the tanks was hot. But remember that hot water is used in the evening, right before bedtime. When I checked at bedtime, the water was hot, not just warm, even though cooking had ceased some hours earlier. All water in the tanks is used every evening by both boys and girls. Remember that we have 400 liters. If we divide that by the number of children we find every child can take three liters only.

About other types of fuel, we have been using quite a number of fuels besides wood. In the photo I was demonstrating leeds. Once bundled, they work well in stoves. This is why people are advised not to throw away any dry materials such as leeds, chopped banana root stem, or cotton husks. This being a cotton growing zone, cotton husks may be used as fuel on Rocket Stoves rather than burning them as refuse.

About the instruction sheet, most of the cooks here cannot understand English well, so I have asked the Head Teacher to help me translate the instruction sheet into the local language so that the cooks can understand the instructions.

Report edited by MJ Ebenhack for clarity.



