



Business Plan for Carbon Credits
November, 2016

Executive Summary

Worldwide, more than 4 million people die every year because of smoke from traditional cooking fires. Smoke from traditional cooking fires is the leading cause of respiratory disease and of blindness in the world. Smoke-caused asthma is a leading killer of children worldwide.

Aid Africa distributes fuel efficient, low emission cooking stoves in the rural communities of northern Uganda to combat these illnesses and to relieve poverty. Violence in this area since 1986 displaced its inhabitants from their villages and left them with severely limited resources to rebuild their lives. The stoves they receive use about a third of the firewood of traditional stoves and reduce smoke by more than 70%.

Aid Africa's mission is to save lives, rebuild sustainable communities and bring a hopeful future to the poorest of the poor. Most of the 7.5-million people living in northern Uganda¹ are subsistence farmers who live in rural villages where firewood is the fuel used for cooking. With a family size of about 5.5, there is a potential demand for over a million stoves to disadvantaged people. To bring improved stoves to this many people would be a huge improvement in all these people's lives. Of course Aid Africa's stoves also emit less carbon dioxide into the atmosphere.

Aid Africa does not sell its stoves in these rural communities. Instead, we have every stove owner assemble her own stove so that she feels a sense of ownership and responsibility for its maintenance. Aid Africa does sell a commercial version of its stove in the city, but these are not easily tracked for the purpose of carbon credits and are not a part of this plan.

Introduction

Aid Africa has been distributing its Six Brick Rocket Stoves in northern Uganda since May, 2005. We have a staff of seven field representatives, four brick makers and several village organizers who live in the rural communities. Several of our staff have been with us since our beginning and truly have the heart for what they do.

Cooking in our area is by boiling and simmering and our stove is designed for that type

¹ <https://www.citypopulation.de/php/uganda-admin.php?adm1id=NOR>

of cooking. Beans, boiled corn meal, greens and squash are examples of food in their diet.

The benefits of the stove:

- Uses about a third of the firewood of a traditional open fire
- Takes less time spent gathering firewood – women are safer from firewood rape
- Produces about ¼ of the smoke of a traditional open fire, keeping eyes and lungs healthy
- Reduces the danger of burns and fire - small children can't fall into a fire
- It's easier to use – no chopping
- It's easier to use and takes less time to cook
- All these advantages mean women using our stoves have more time for other activities

Our stove program is vertically integrated. That is, we control every aspect of the stoves from construction through distribution and maintenance, from digging the clay for bricks to monitoring a stove's installation and usage.

- Aid Africa has its own brickyard where the clay is dug and turned into stove bricks.
- Aid Africa transports the bricks to the rural communities.
- Aid Africa always presents educational forums of interest to the communities.
- Aid Africa helps every woman assemble her own stove.
- Aid Africa oversees the stove's installation and makes sure the user knows about the stove's operation and maintenance.
- Aid Africa hires local "stove promoters" in the villagers where we work who become our local specialists and can help if problems arise.
- Aid Africa checks back with the communities on a regular basis to see how the stoves and our other projects of bringing clean water and trees, are doing.

Aid Africa's Business Model

Business Model

Aid Africa is a non-profit organization incorporated in the U.S and registered as a foreign NGO in Uganda. It is created to benefit very poor people and to lift entire communities out of poverty. Money received from the sales of carbon credits will help us toward that goal. Some of the money will be used to cover the cost of manufacturing the stoves. Some will help us expand our production and the number of people we serve. And a portion of the money will be returned to the communities where we have distributed the stoves. Although the United Nations says it is the end user - the woman in the hut - who creates the carbon credit, Aid Africa will donate money instead to community groups of which the users are a part. Each group will have an account with funds deposited based on how many stoves they are using. They will have to argue and debate about how to best spend their carbon credit money, thereby building stronger

community.

When Aid Africa first started its stove program, we had to approach each local community's leaders, usually men, to introduce ourselves and establish a relationship. Then we would get to meet with the women's groups who we really wanted to talk to. Mostly, they are the stove users, but there are a few men and they are equally welcome. Then we would have a meeting of a group to introduce the stove, explain how it works and do a cooking demonstration. Now, communities anticipate our arrival, not too patiently. Our reputation for our good programs is well established and people know we do what we say we'll do.

Operations Plan

Our manufacturing plan includes gathering raw materials, manufacturing our special bricks, transporting them to rural communities, holding educational meetings with community members, helping stove users assemble the stoves, installing them as well as monitoring them regularly.

Bricks

Clay is dug from a deposit of high quality clay. Aid Africa has permission from the Local Chair to take the clay to benefit the communities.²

We need sawdust to combine with the clay. It is trucked in from a sawmill where trees are cut for lumber. Rice husks, used for firing our kilns, are locally available for free from millers in town.

We hire four local brick makers who run the brick manufacturing process. An Aid Africa staff person oversees and supervises the brickyard.

Transportation

Sufficient bricks have to be transported to local communities. Presently we hire a truck for a day to do this. It is our goal to purchase a large truck.

Our staff travels daily to the rural communities. Aid Africa has a small pickup truck and will purchase a van soon to carry people and miscellaneous supplies.

Community Meetings

None of Aid Africa's projects would be successful without educating the people we serve. When we visit a community for a stove demonstration we will have anywhere from 50 to 150 people present and we use the opportunity to introduce other topics of local interest. It may be about water and hygiene, or agricultural techniques or alcoholism – among other topics. After that presentation we tell them about the stoves.

² A copy of our permit from the Local Chair is attached as a part of this document.

We also use this technique with our other projects of clean water, trees and HIV/AIDS counseling.

Stove Assembly

One or two Aid Africa staff travel to a community in order to organize a community group to receive stoves. On assembly days, the bricks arrive ahead of time. Aid Africa staff use the opportunity for another educational session. Then staff shows everyone how the stoves are put together. Each woman (mostly) gathers the appropriate bricks, receives wire and tools from the staff and gets assistance in assembling her stove. Each stove also needs an iron ring on the top that maintains the correct distance between the top of the stove and the bottom of the pot. These are handed out separately and as they come by for the ring, we enter their personal data into our log books. We keep detailed records of each household that receives a stove.

Stove Installation

During the stove demonstration, we show them how the stoves are installed and mudded into their huts. Mud and mud bricks are easily available to everyone. A freshly mudded stove must dry for about three days before it is ready for use.

Monitoring

It is most efficient for Aid Africa to hire and train Community Promoters. This cuts down on our transportation expenses and we pay them appropriate village wages. Promoters visit every household to see that the stove is correctly installed and that the owner knows how it is used. Because Aid Africa often has other projects in the same communities, we use our visits to see that our trees are planted and cared for correctly and that water points work correctly and are kept clean.

Aid Africa makes an annual inspection of every stove to see that it is in operating order and actually being used. Most often the inspector will be able to make repairs on the spot. If not, the inspector will report to the Stove Project leader and have it replaced. If the stove is not being used, we will again instruct the owner on its value and encourage its use. If that fails, we will have to delete it from our database as a qualified stove. There will always be some people who don't like change. We rely again on the Community Promoters to oversee all of our projects.

Expansion Plans

Demand is not a problem; our supply never satisfies it. We will expand in our present geographic location until the market is saturated. Can that happen? Maybe... someday. I hope so. We can drive up to two hours from Gulu to a village for stove distribution. Beyond that, we risk returning after dark when the roads are not safe. Aid Africa can create new



geographic centers in other towns in northern Uganda. Spreading to other countries, or even other parts of Uganda would create difficult operational problems.

Aid Africa's current stove production is limited by our budget. With more money, we can make more stoves and help more people. We can easily double our budget and stove production without much change to our production side. Our major expenses are for transportation and the rings that are installed onto every stove.

A major economic difference in administering carbon credits will be in our need to verify all the stove installations and to track and record that every stove is in use every year. That requirement will double our need for human resources. Homesteads are spread over very large areas and traveling to each and every one requires much more time than just assembling and distributing stoves. Money from carbon credits will cover this registration and monitoring expense. But labor is not a large percentage of our overhead and our additional costs will total approximately \$20,000 through the first three years.

Marketing

When we first started distributing stoves in 2005, we had to build new relationships in every camp we visited. Yes, people were in IDP³ Camps in terrible circumstances. When they returned to their traditional villages in 2009, almost all of our stoves were demolished and we had to start over. But then, we had a pre-established market. People knew who we are and spread the word.

Our biggest advantage is that, as an organization, we do what we say we'll do and so we have an excellent reputation. That single fact makes marketing easy for us. We have an established brand name.

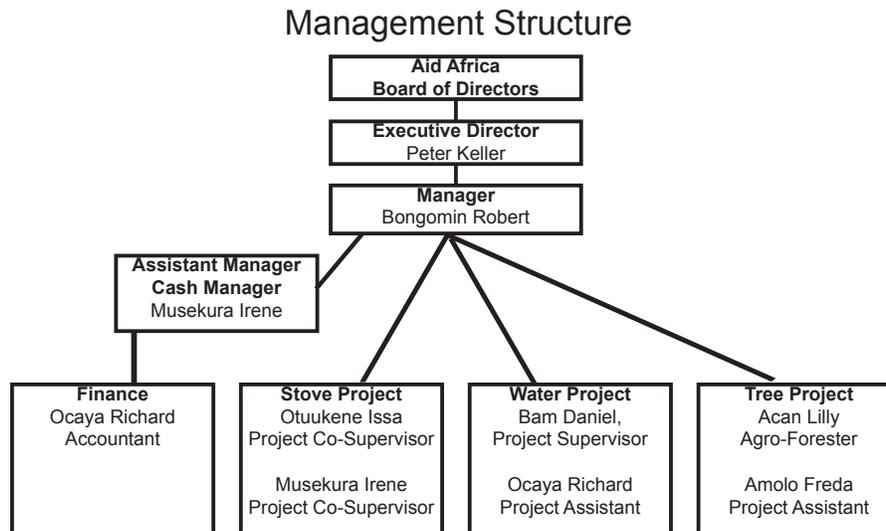
We tell people that Aid Africa is really an educational organization – with projects. That is, our emphasis is on teaching people about our projects and how to keep them sustainable. When we distribute stoves, every new stove owner already knows how to maintain and repair her stove. Of course, if there are problems with the stove or questions about its use, they have their Community Promoters to look to for help and they also know how to contact Aid Africa through their local Community Leaders. Our annual inspection will verify it's "as new" condition and that it is in use.

Project Structure and Management Expertise

Every member of Aid Africa's staff is a stove expert. Everyone needs to know everything about our stoves. If someone is sick or away, we are not stopped from our goals. Any of the staff can, for instance, advise the brick makers or negotiate with vendors for our other supplies. However, every company needs a management

³ IDP means Internally Displaced People. They're the same as refugees but who haven't crossed an international border.

structure.



Here are the staff names and how they work implementing the stove program:

Bongomin Robert – Manager of Aid Africa. Robert oversees personnel and sees that reports are written. If there are production problems, it is up to him to overcome them. He has been with Aid Africa for about a year and a half. Robert has worked for World Vision, AMREF, UNICEF and a U.N. HIV/AIDS program in Malawi. His experience with these organizations help him with program management as well as fundraising in Uganda.

Musekura Irene – Assistant Manager of Aid Africa. Irene is the implementer of our programs. She sees that things get done in a timely manner and she keeps a close eye on the budget, overseeing expenses. Irene is also our best photographer and creates marvelous reports. Irene was an intern from Gulu University and when she graduated, she continued with Aid Africa as an unpaid volunteer. She was so good we hired her! Her area of expertise is in stoves including the manufacturing of bricks, their assembly and distribution in the villages and their documentation.

Ocaya Richard – Aid Africa accountant. Richard keeps the books for both the Ugandan and U.S. sides of the operation. He has worked for Aid Africa for over a year and has developed a heart for the projects of Aid Africa and wants to know how everything works. Smart, personable and intensely interested.

Amolo Freda – Freda was our very first employee in 2006 before there even was an Aid Africa. She is our communications specialist, both in the office and in the villages. In the office, she takes minutes for our meetings and writes reports of our projects. In the rural communities, she is the face of Aid Africa that villagers see. When there is a presentation to be made for stoves or anything else, it is her smiling face and big heart that gets the people involved and communicates our messages.

Otuukene Issa – Manager of the stove program. Issa has worked for Aid Africa since 2007. He is a natural engineer and has overseen our effort to improve the efficiency of our stove. Issa recently returned from a trip to Tanzania to teach an organization there how to make and market stoves. They were very happy with Issa's expertise and ability to teach them what they need to know.

Acan Lilly – Lilly is our agro-forester and is in charge of our trees program. But she is equally capable of standing in front of a village crowd and presenting the benefits of the Rocket Stove. She is also a quiet catalyst who just by her presence encourages cautious women to approach her for help and advice.

Bam Daniel – Manager of our water projects. Before starting with Aid Africa in 2008, Bam had constructed about 2,000 sheltered springs for Rotary Clubs in Uganda. His enthusiasm is boundless and he likes to be at work very early every day.

Peter Keller – Executive Director. Peter travels to Gulu from the U.S. twice a year to check in on operations. The Ugandan staff runs the business and Peter drops by to suggest improvements and bring visitors – all of whom are very impressed with Aid Africa. He communicates weekly with the staff to give guidance. He also helps with funding efforts, grant writing publishing brochures and talking to community groups.

In addition to the management and field office staff, Aid Africa employs four fulltime brick makers in the village where our brick yard is, located three kilometers beyond the airport on Airport Road. It is at: Latitude: 2° 49' 34.032" N Longitude: 32° 14' 51.39" E We employ seasonal workers during the dry season to get a jump on brick production while the bricks dry quickly in the hot weather.

We also hire four nursery workers who tend our trees while they grow. We have about 100 stoves at St. Mary Lacor Hospital where we hire a Stove Promoter to show the women who are unfamiliar with our stoves how they work. They have about 1500 patients a day and every one of them has to have a meal prepared for them. We keep about eight villagers, both men and women, on payroll as Community Promoters to see that our stoves are properly installed and maintained.

When we visit a village and Aid Africa staff make their presentations we see that both men and women make presentations to the people. We want to present both men and women working together as equals. Gender equality is a very important value for Aid Africa.

Partnerships

Aid Africa, being vertically integrated, does not depend on contracts and partnerships. However, it is important for the organization to be integrated into the community. Aid Africa is a member of the NGO Forum in Gulu so that we can be in touch with other NGOs and hear about their programs. We are also in touch with other stove programs such as the International Lifeline Fund in Lira and Potential Energy. For our other

projects we work with groups like PACHEDO and Trees for the Future. Outside Uganda, we are a partner in the Global Alliance for Clean Cookstoves and we participate with the ETHOS Convention (all about stoves) in Seattle, WA every year. We maintain active partnerships with the International Intern program at Princeton University and California Polytechnic University in San Luis Obispo, California. Larry Winiarski, inventor of the Rocket Stove is an Aid Africa board member. Almost every board member has visited our operations in Gulu and is able to offer sound business advice when we need it. Peter is a Rotarian and works with Rotary Clubs on Rotary International grants for funding.

Stove Choice

Aid Africa uses a modified version of the Six Brick Rocket Stove, developed at the Aprovecho Research Center in Cottage Grove, Oregon. Dr. Larry Winiarski and Ken Goyer worked for four years on the basic design that is now used worldwide. Our choice of stove is based on its efficiency, cost and appropriateness for the stove users. We recently delivered four stoves to CREEC (Center for Research in Energy and Energy Conservation) in Kampala for energy efficiency certification. Our latest version is certified to remove 3.2 tons of carbon from the atmosphere every year. CREEC⁴ certifies that it is 32.3% efficient.

Executive Director Peter Keller attends the ETHOS Conference every year to see what improvements have been made in stoves. We keep in touch with top experts in stove production from around the world. For the economic and practical needs we have, we are satisfied we have a stove that performs very well and is durable. Issa and Irene worked together on our recent improvements make the stove more efficient and durable.

During the rainy season, it rains almost every day in the Gulu area so women like to cook indoors. No one wants to cook in the rain with wet fuel. The fuel available to them is firewood. Although some people manufacture charcoal for sale in town, very few villagers use it. And Aid Africa does not recommend charcoal. A third or more of the energy in the wood is lost in the manufacture of charcoal, putting it at a great disadvantage for efficiency. Also, charcoal requires much more oxygen to burn completely but almost never gets enough. Consequently, charcoal fires create a lot of poisonous carbon monoxide gas. Children who are often next to their mothers when they cook and are exposed to this carbon monoxide, and consequently have lower IQ's.

Stove Maintenance

Stove distribution is just one of Aid Africa's projects. We also grow trees for food and fuel, bring clean water, conduct HIV counseling and testing and distribute birthing kits to

⁴ CREEC is the Centre for Research in Energy and Energy Conservation, located at Makerere University in Kampala. It is an independent and internationally recognized stove testing service using globally accepted testing procedures for the (East-) African region.

pregnant women. Consequently, we frequently return to the villages where we have created a relationship. It is easy while we are there to assess stove use, answer questions and concerns and to do any required maintenance. When we are not there, our Community Promoters are.

In addition, Aid Africa has a well-organized operation to document every stove's location and owner. We have every stove owner's name, when they received their stove, when it was put into use and the stove's GPS coordinates. As required by the United Nations, we will implement a thorough annual inspection program and hire additional staff to perform this work.

Industry Analysis

Although there are many Ugandan and foreign stove manufacturers in Uganda, none of them pose competition for Aid Africa, unfortunately. In the rural villages we serve, Aid Africa is the only organization doing anything at all. Occasionally, another organization may drill a water well, but those are not frequent and are rather scattered. There is plenty of work to do bringing these millions of people out of poverty and there is enough work to share.

Most stove manufacturers are for-profit companies. Aid Africa is not. And we are among the very few worldwide that focuses on community development. The problem then, is that Aid Africa depends on donations to continue its work. Fundraising is an ongoing problem. Just like our commercial counterparts, we are subject to the whims of the economy. When the economy is up, people buy stoves and they make money. When the economy is down, people are less likely to buy a stove. For us, it is much the same. When the economy is up, people donate money. When it is not, they tend not to donate as much.

Opportunities for stove distribution appear to be never ending. If we were to become ten times our size, there would still be enough poor people needing help and Aid Africa would love to help them out of poverty. Perhaps money from carbon credits will allow us to serve hundreds of thousands more people.

When we first started traveling to the IDP camps, we would often have to drive down roads filled with grass two or three meters high. No one had driven down those roads in years. We would ask the people who else had been there to help and the answer was "No one."

Although life is much better now, there is still great need for many things. But the large intervention organizations like Red Cross, World Vision and the Norwegian Refugee Council are all gone. Development organizations like Aid Africa remain but not with the same resources of those other large groups. Traveling to distant communities is expensive, but Aid Africa has figured out how to do it. We are a successful organization doing unprecedented work. Hundreds of thousands of people live better lives because of Aid Africa.

Financial Assumptions

Aid Africa has been manufacturing and distributing stoves for over ten years. We've run into all kinds of problems large and small and figured out how to solve them. We have the infrastructure and experienced staff to continue successfully.

Included with this Business Plan is a four-year cash projection. It uses very conservative assumptions and Aid Africa may be able to outperform what is in the example. Our stove program takes about half of our budget with the rest spread among our other projects.

Assumptions in the spreadsheet are well based on our operating experience. We know what things cost and where the pitfalls may be. Conversations with board members have been constructive and they support the sale of carbon credits as a continuing source of income but they have some fears about some of the expenses involved.

The cash flow spreadsheet shows that from year to year we will have positive cash flow from carbon credits. But looking at the spreadsheet more closely, there are some quarters with deep negatives. Causes for those shortfalls include the U.N. Inclusion Fee in 2017 and then increased labor costs starting the second year. Also, there is a \$45,000 expense in 2018 to purchase a truck. The truck will eliminate our need to rent transportation. Aid Africa plans to put money into reserves both from its regular money as well as income from the sale of carbon credits so that when those times arrive, we are able to get past them. In the third year, we finally arrive at a future of continuing positive cash flow.

Our risks are not in losing our market – everybody needs to cook – or losing a supplier of construction materials – clay and sawdust are ubiquitous around the world. Instead, our risk is always to our income. Being a non-profit charity, we depend on people's goodwill toward us. But if the economy drops, so does our income. Our greatest risk will be from income from carbon credits. Those credits may become our largest source of income. What if the carbon market falls apart? What if another system displaces it? Aid Africa might find itself out of business.

But our foundation is built on donations from many small givers; those who donate just \$25 or more a month. If we lose a few, we can replace them and no long-term damage is done. But if we lose a major ongoing grant or income from carbon credits without maintaining our small-donor base, we would be in jeopardy. Consequently, Aid Africa will always nurture our base of friends, families and community organizations like Kiwanis and Rotary, and work with churches – those who care about helping poor people – that have sustained us so far. We might have to contract for a while, but we won't disappear!

On the upside, income from the sale of carbon credits will allow Aid Africa to serve many thousands more people. We will, of course, maintain our other projects of bringing clean water and distributing trees from our nursery for food and fuel. Those other

projects also bring financial stability to us. Not everyone is interested in stoves. Other people want to see the world reforested, or see that everyone gets a clean drink of water. Those appeals broaden our support and our sustainability as an organization.

Conclusion

Aid Africa looks forward to your support through your purchase of carbon credits. It's a wonderful way to support worldwide efforts to eliminate poverty. That's what Aid Africa does. We depend on donations for our work and you, as buyers of carbon credits, can take satisfaction in not only cleaning the atmosphere of greenhouse gasses, but also in improving the lives of people who are close to the stone foundation of survival.