Changu Changu Moto Project
Dining for Women Final Report
September 2017
Information

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<thead>
<tr>
<th>Organization Name</th>
<th>RIPPLE Africa, Inc</th>
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<tbody>
<tr>
<td>Program Title</td>
<td>Changu Changu Moto Project</td>
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<tr>
<td>Grant Amount</td>
<td>$45,000</td>
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</tbody>
</table>

Recap briefly what outcomes the program was designed to achieve

RIPPLE Africa’s fuel-efficient cookstove, called the Changu Changu Moto (which means Fast Fast Fire in the local language) provides a simple and culturally appropriate alternative to the traditional three-stone fire most commonly used in developing countries.

Each stove requires only 26 mud bricks, which are supplied by each household and made from local, easily accessible materials. This low-tech, 100% sustainable cookstove assists in counteracting deforestation by substantially reducing the need for fuel-wood.

The $45,000 funding received by Dining for Women enabled RIPPLE Africa to build 3,000 Changu Changu Moto cookstoves, resulting in a dramatic reduction in dependence on wood/charcoal for cooking and direct benefits for women related to health, safety and economic circumstance.

What was accomplished in connection with this project? Please address each stated objective. If any objectives changed, please also explain the circumstance.

Originally, the location where the cookstove project funded by the Dining for Women grant was to take place was in a rural village called Dwambazi in the Nkhotakota District. However, once it was discovered that another cookstove project had begun in that same area, the Changu Changu Moto project was moved to Mzuzu, an urban location desiring the cookstoves, in order that efforts were not duplicated.

Mzuzu is the third largest city in Malawi. Because of its large population, Mzuzu has a massive need for cooking fuel, which has resulted in severe deforestation throughout the surrounding region.

Changu Changu Moto Project Results:

To date, we have accomplished our target goal of providing 3,000 cookstoves in the Mzuzu area despite delays caused by heavy flooding in 2016 and the challenges associated with introducing the cookstoves in an urban area where a large number of houses are rented and not owned.

Due to these unexpected complications, the original timeline of providing all the cookstoves within the first year of the project and monitoring taking place in second year has been slower than planned and adjusted accordingly. We are happy to report, however, that all cookstoves have been constructed, with 93.3%
currently in use as documented as part of our monitoring process. We will continue to oversee stove usage, as we do with all of our Changu Changu Motos, to ensure that the stoves continue to be properly utilized and householders do not revert to cooking on the three-stone fires and/or use charcoal burners.

Despite some of the difficulties encountered with the implementation of this project in an urban setting, the original objectives have been achieved and are as follows:

- **Natural Environment**: Use of the Changu Changu Moto fuel-efficient cookstove results in a 66% reduction in the need for firewood, which dramatically lessens the rapid deforestation taking place in Malawi because of people’s dependence on trees for cooking.

- **Economic Circumstance**: In urban settings such as Mzuzu, a 66% wood savings translates to a 66% economic savings on the average monthly cost of buying wood and/or charcoal. According to surveys conducted, women have consistently reported that they are spending less money on wood/charcoal. In an area where the average income is extremely low, the reported savings are 2,200 MK per week ($3). With many households earning less than $30 per month, this 10% savings has a huge impact on a family’s finances.

- **Labor/Time Allocation**: Women are substantiating that the cookstove makes life easier for them because of its dual-burner design and efficiency. Not only are they able to cook food faster, but they are also able to cook two dishes at once which saves time and allows them to do other things.

- **Health**: The Changu Changu Moto produces less smoke and is safer than a three-stone fire due to the enclosed design of the stove. For those living in Mzuzu who were previously using the three-stone fire, cookstove users are confirming the smoke reduction, which has positive long-term health benefits. In addition, mothers feel their children are safer from potential burns and are reporting a decrease in fire-related accidents.

- **Environmental Awareness**: An important component of RIPPLE Africa’s cookstove project is educating people about the importance of conservation and the positive role the Changu Changu Moto plays in preserving trees for future generations. The 93.3% success rate of this project confirms that once people understand the long-term implications of deforestation and realize how their daily practices can make a difference in slowing the trend, they are much more likely to continue use of the stove and making this cooking method a way of life.

*Have the number of beneficiaries changed? To report this please refer to the original numbers in your grant proposal under Number of women and girls Directly Impacted and Indirectly Impacted.*

There has been no change to the number of direct beneficiaries impacted as a result of this grant. Thanks to the generous support of Dining for Women, 3,000 women have received a Changu Changu Moto fuel-efficient stove. In addition, an estimated 4,500 girls (based on the average household size of five people) have been positively affected because girls often share in the household responsibilities and are present and active in kitchens.

Indirectly, many more family members experience the economical benefit derived from the Changu Changu Moto due to a cost savings of not having to buy as much wood and/or charcoal, in addition to the health benefits because of the enclosed design of the stove.
What challenges did you face in connection with this project? How did you address these challenges? Did you change your strategy as a result of these challenges/obstacles? How will you address these challenges in the future?

This was RIPPLE Africa’s first venture introducing the Changu Changu Moto into an urban area and there were many challenges faced and lessons learned throughout the process.

- Many of the people living in the urban area of Mzuzu are renters and not homeowners, resulting in unforeseen challenges. First, because the cookstove is constructed from bricks made from a mud mixture, it can easily deteriorate when exposed to the elements without the protection of a covered kitchen. Despite our coordinators’ best efforts to educate landlords about the merits of the stove, we quickly discovered that many were unwilling to provide the kitchen area needed to shelter the cookstove for their tenants because of space restrictions and/or associated costs.

Initially, coordinators helped a number of families eager to have a cookstove build their Changu Changu Motos, only to find that they were washed away during heavy rains, as they were either being used in the open air or in poorly constructed shelters. Because of these failed efforts, we began only providing cookstoves to those households that had a covered kitchen in place.

(NOTE: Interestingly, we continue to find many people without kitchens who are happy to follow the example of their neighbors by constructing their own Changu Changu Moto (and rebuilding as needed) because they have seen first-hand its many benefits.)

- Mzuzu’s residents are much more transient than those in rural locations. Subsequently, we often encountered situations in which households who had received a Changu Changu Moto had moved, leaving the new tenant without an understanding of the merits of the stove or how to use it properly.

An important component of the CCM project implementation is direct household involvement with the construction and maintenance of the cookstove. Subsequently, we were able to approach this particular challenge by encouraging neighbors with cookstoves to assist the newcomers and act as

Some householders are building makeshift shelters for their Changu change Motos until they can persuade their landlord to build a properly constructed kitchen
advocates, explaining the rationale and operation of the Changu Changu Moto since they already had the firsthand knowledge and experience.

- Although charcoal selling and buying is illegal in Malawi, the practice is a widespread problem in Mzuzu because so many of the households do not have a kitchen. Unfortunately, the Forestry Department is not equipped to enforce the charcoal ban and so the practice continues and deforestation escalates.

RIPPLE Africa is addressing this challenge two ways. First, with the households using the charcoal burners, we explain the cost benefits of the Changu Changu Moto versus having to purchase charcoal and the overall savings to the family. We encourage them to build a kitchen so that they can begin using the cookstove—saving them money and the environment from further destruction.

Secondly, working in partnership with the Forestry Department and local chiefs, residents are educated about the forest conservation project in the region. The local people become stakeholders in forest regeneration and are empowered to monitor illegal charcoal practices and report it to the police. Ultimately, the goal is to decrease the availability of charcoal and direct people to the Changu Changu Moto as a more fuel-efficient cooking method.

- In 2016, the Mzuzu area was severely flooded during the rainy season. Unfortunately, many of those that had already received Changu Changu Motos lost their kitchens and stoves, delaying the project’s progress. Subsequently, to ensure that the destroyed cookstoves were rebuilt and project goals were met, the number of staff was increased to assist with the rebuilding efforts.
Especially heartwarming has been those residents that rebuilt their Changu Changu Motos without waiting for help because they loved using their cookstoves.

Is your organization or program different than presented in the approved proposal?

As presented in the approved proposal, RIPPLE Africa continues to be an organization committed to empowering communities in Malawi, Africa, to achieve a sustainable future by providing a hand up and not a hand out. Our mission is to improve the standard of education and healthcare; to preserve and sustainably develop the environment; and to create opportunities for the people living in the Nkhata Bay District. There have been no changes to funding or leadership, and the charity continues to expand upon our current projects and programs.
**What were the most important lessons learned?**

Prior to beginning the Mzuzu cookstove project, our efforts had been focused primarily on rural communities. The venture into the urban setting of Mzuzu came with a unique set of challenges, with many lessons learned as a result.

As mentioned previously, many people living in Mzuzu rent rather than own their homes. Subsequently, tenants have little control over whether or not they have a covered kitchen in which to house a Changu Changu Moto. Without a proper kitchen to protect their cookstove from rain and weather conditions, stoves are easily destroyed and need to be rebuilt. After record flooding rains devastated the area in early 2016, this rebuilding process slowed the project’s progress considerably. As a result, we have decided to provide Changu Changu Motos exclusively in kitchens that meet our criteria and are able to protect the cookstove from weather-related deterioration. We have also worked to educate landlords about the importance of providing covered kitchens on their properties but with limited success due to the expense involved.

We also found that the population living in this urban setting is far more transient than those residing in rural locations. Because a charcoal stove is portable and easily moved around, many people find this cooking method desirable, despite the fact that use of charcoal is an illegal practice in Malawi and is more expensive than purchasing wood. Subsequently, we are now working in partnership with the Forestry Department in the Mzuzu area to help communities preserve the remaining forested areas and reduce the availability of charcoal. These efforts should increase the appeal of Changu Changu Moto as it burns smaller pieces of wood and will therefore be cheaper than the traditional three-stone fire. We are also encouraging more people to plant fast-growing trees that can be easily coppiced to supply the small pieces of wood used on the Changu Changu Moto.

**What had changed within your organization as a result of this project?**

- As stated above, many difficulties were encountered during the implementation of the Mzuzu project due to lack of suitable kitchens in this urban setting. Without the adequate protection needed to shield the Changu Changu Moto from deterioration during adverse weather conditions, progress was extremely slow due to the need to rebuild stoves once destroyed.

Moving forward, we have determined that in order to achieve maximum results, we will focus the Changu Changu Moto project primarily in rural areas surrounding Mzuzu where covered kitchens are more commonly found. Monitoring of existing stoves in Mzuzu will continue but we will only provide future cookstoves in those households that meet the criteria needed for successful long-term usage.

Working alongside with the District Forestry staff, RIPPLE Africa will continue efforts to educate the residents of Mzuzu about the need for forest conservation and the importance of reducing wood and charcoal in cooking.

- Because of feedback that was compiled through case studies during the implementation of the Changu Changu Moto project in Mzuzu, we have changed our original methodology. Rather than have staff members assist each woman recipient with the construction of her stove, staff members now conduct meetings and training sessions with groups of five to ten householders, who then go home and
construct the stoves with the assistance of neighbors. Women have commented that constructing the stove with neighbors, rather than a staff member, has promoted a heightened sense of community and ownership over the project.

Upon completion of the stove, staff members then visit each household to inspect the construction of the stoves and troubleshoot any issues. Regular site visits by RIPPLE Africa staff members are conducted regularly thereafter to monitor and document usage of each stove to ensure that it becomes a way of life.

Although this small modification does not change the overall cost of the project, we have found this approach more successful and plan to use it moving forward.

**Describe the unexpected events and outcomes, including unexpected benefits.**

We are delighted to report that news of the success of the Changu Changu Moto is spreading as a result of the Mzuzu project funded by Dining for Women! Ekwendeni, a rural community north of Mzuzu, recently approached RIPPLE Africa wanting to learn about our forest conservation and fuel-efficient cookstove methods. As a result, our environmental team has begun working with schools on establishing tree-planting clubs and students have become ambassadors for the Changu Changu Moto, helping to introduce the benefits of the stove into the villages where they live. Once additional funding has been secured, our hope is to begin a cookstove project here and expand into nearby rural communities in the surrounding area.

In addition, because of the educational component of our cookstove project, people now have a better understanding of the negative repercussions caused by deforestation. For those people living in the Choma Hill area where much of the charcoal production takes place, the importance of conserving remaining forests and replenishing trees to restore what has been destroyed is becoming a priority. The people see the Changu Changu Moto as a means of moving households away from using charcoal stoves and three-stone fires to reduce the amount of wood being consumed.

Together, the District Forestry Department and RIPPLE Africa are helping communities around the forest to protect the remaining trees and are working with farmers and community groups to plant fast-growing new trees that can be used for timber and firewood, further reducing the need to cut down older established trees.
Stateside, the Dining for Women grant gave RIPPLE Africa and the Changu Changu Moto project exposure amongst its vast membership unlike any other grant we have ever received. This unique forum of being allowed to showcase Malawi, the cookstove project, and our work in this impoverished country with an audience of like-minded people has proven to be invaluable!

In June of 2016, a group of Dining for Women members orchestrated a trip to visit RIPPLE Africa and see first-hand the impact of the cookstove project for themselves. These women returned with an affinity and appreciation for the country, its people, and the work of RIPPLE Africa, and have been incredible advocates since their visit.

*Fast-growing pine trees are being planted near Mzuzu to provide firewood and building timber.*
Approximately how many lives have been touched, both directly and indirectly, by the program?

Based on the average household size in Malawi of five people, 15,000 family members were directly impacted as a result of the Changu Changu Moto project, of which an estimated 7,500 are females.

In addition to these numbers, the educational component of cookstove project played a vital role in teaching people about deforestation and the importance of preserving the environment, expanding well beyond the borders of Mzuzu into surrounding areas. Forest conservation and tree planting efforts by many groups have resulted from the Changu Changu Moto project, but it is hard to estimate the exact impact of the countless people that will be affected in the short and long term.

What is known, however, is that from an environmental perspective, the significant reduction in wood and charcoal use across 3,000 households has positive effects for the entire community and the natural environment on which people of all ages live and depend.

Rita uses her Changu Changu Moto to cook food as part of a business. She loves that the stove produces less smoke compared to a three-stone fire since she spends much of her day cooking. The fact that this fuel-efficient cookstove uses substantially less firewood has also made her business more profitable because she has to pay less for wood. She loves her Changu Changu Moto!

Annie is a Malawian mother who loves that that the Changu Changu Moto is safer because of its enclosed design versus the open flames of the three-stone fire. She feels so much more confident when her children are playing near, as they are far less likely to fall into the fire and be burned.
Morris Manda (no photo)

When Geoff Furber, founder of RIPPLE Africa, met Morris Manda, he was using the Changu Changu Moto to cook a light supper of nsima for himself while his wife was away. He and his family love the cookstove saying, “Really the Changu Changu Moto is most excellent. I economize on firewood. We need only two firewoods each week to cook and we can cook a meal with only small, small pieces of wood. Two small pieces of wood are enough to cook one meal. It is saving me much money.”

What are the measurements used to monitor success and how was this information measured (e.g., surveys, observation)? Be specific and include measurable results.

Accurate and thorough documentation of each fuel-efficient cookstove is an important component of RIPPLE Africa’s Changu Changu Moto project. After initial information such as location and name of the householder is captured, follow-up visits conducted by RIPPLE Africa staff are then noted, including the following:

- Condition of the cookstove and usage
- Condition of the kitchen
- Size of wood being used
- Condition of the pot-rests
- Are the front bricks being used?

This information is then added onto the Changu Changu Moto database for each site visit so that we have a record of every cookstove. In addition to the regular checks, the project manager also performs random visits and records these findings to ensure that the data that has been provided by staff is accurate and to identify any potential issues that need to be addressed.

Based on this documentation, we are very pleased to report that 2,815 out of 3,015 Changu Changu Motos built in Mzuzu, as result of the DFW funding, are currently in use today! This equates to a 93.3% success rate for ongoing use of the stoves and is a very positive indication that these fuel-efficient cookstoves have become a way of life!

If the program is ongoing, provide plans and expected results, including projected timeframe.

The Changu Changu Moto project will continue to be randomly monitored to ensure that the cookstoves are still being used and maintained properly. These findings will be entered into our database as part of our monitoring system and will enable us to determine the long-term success of the project over time. In addition, this data will prove very useful so that we are able to compare the success of this project (in the more urban area around Mzuzu) with our other more rural projects.

Did this grant and relationship with DFW assist your organization in obtaining other funding, partnerships with other organizations, or public recognition in some capacity?

As a result of the Dining for Women grant, we have been able to secure a very competitive grant from the European Outdoor Conservation Association to continue efforts to protect forests and plant new trees around Choma Hill. Our funding bid was greatly enhanced because of the Changu Changu Moto project in Mzuzu and the educational component of this project that teaches residents about deforestation and what can be done as a community to decrease dependence on wood/charcoal for cooking.
In addition, this project has strengthened our partnership with the District Forestry Department around Mzuzu, which ultimately has enhanced efforts to plant more trees and better protect forested areas.

**Provide a detailed financial account of all grant funds**

See accompanying financial statement.

**High resolution photographs of the program depicting the women/girls who have benefited from the grant funds should be submitted via Dropbox, including confirmation of grantee’s right and consent to use photos as per local law.**

Photographs have been submitted via Dropbox as requested. RIPPLE Africa confirms ownership and gives DFW consent to use all photos. All subjects featured in photographs have given their permission for use by RIPPLE Africa and its affiliates.

**Message to Dining for Women membership and donors**

Our thanks to Dining for Women for partnering with RIPPLE Africa! In addition to funding our fuel-efficient cookstove project in Mzuzu, we so appreciate the opportunity we were given to educate the DFW membership about Malawi, its people, and the tremendous need.

Dining for Women is a wonderful organization that is changing the lives of women and girls around the world in countless ways! We invite you to visit us in Malawi and see for yourselves the impact of your generosity!

**TAWONGA UKONGWA!**

(Thank you very much!)