

# **The commissioning of the first 725 Envirofit clean cook stoves in Malawi was a superb success**

## *Summary*

Members of the Dutch/Malawian NGO “Stichting St. Gabriel’s Hospital Malawi (SSGHM)” saw the devastating effect of smoke in the kitchen upon the health of women and children and therefor last year they have taken the initiative to promote the use of clean cooking stoves in the rural households in Malawi. Using crowdfunding and private donations more than 700 stoves could be acquired in 2013; all the them have found a happy owner!!

In the months May, June and July 2013 Annie M. Kachere, M & E officer of CADECOM has commissioned about 630 stoves in the rural villages of the Lilongwe Archdiocese. One of the members of SSGHM (Fr. Willem Kerkhof) has as well distributed a number of stoves in villages in the same region. Several stoves have been placed by SSGHM in hospitals and health centres for the use in the guardian kitchens and for the sterilisation of medical instruments. And a small number of stoves are sold at cost price to individuals in urban regions. Including the stoves distributed during our pilot in 2012 the total amount of stoves in use in the Lilongwe Archdiocese is at the moment 725!! This means a healthier environment for about 2,500 people and an annual saving of 1,500 metric ton of wood.

And early 2014 a new shipment of 1225 stoves is expected to arrive in Lilongwe!!

## **1. Problem statement**

Like in all developing countries the majority of the households in Malawi cook on open fires. It is a well-known fact that this way of cooking is very inefficient and consumes huge amounts of wood while it also generates smoke and other harmful gasses. These inefficient cooking methods have shown to cause a long list of health problems, including acute respiratory infections, chronic obstructive pulmonary disease such as bronchitis or emphysema, cancer of the nose, throat, and lungs, asthma, cataracts, heart disease, birth problems such as low birth weight, stinging eyes, chronic headaches, and coughing. These health concerns affect women and children in particular, as they spend much more time in the home and over the stove. The World Health Organisation estimates that more than 4 million people die prematurely each year from inhaling indoor air pollution generated during the cooking process (about the same amount of people worldwide die of Malaria and Tuberculosis together).

## **2. Initiative of the Dutch foundation “Stichting St. Gabriel’s Hospital Malawi”.**

### **2.1. The choice of the most optimum stove for Malawi**

The mission of this Dutch/Malawian NGO, which was founded in 2008 is “The improvement of Healthcare in the Central Region of Malawi”. Health improvement starts with prevention and thus we saw the importance of the reduction of the exposure of people (women and children!!) to harmful substances (smoke) during the cooking process. And thus members of the Dutch foundation started to investigate how they could contribute to the use of clean cooking procedures.

Based upon a thorough literature review and own tests we have chosen to start a pilot in Malawi with the Envirofit clean cooking stove.

The major characteristics of the Envirofit stoves are:

- Reduction of soot and harmful gasses to about 70 %.
- Decrease of wood consumption to more than 50 %.
- Same size of wood as used in the traditional way of cooking.
- Relatively cool at the outside which prevents severe burns,
- The manufacturer claims no noticeable loss of performance after 5 years of intensive use.
- Considerably shortening of the cooking time.
- An important recent development is also that production of these stoves has recently started in Africa (Kenya).

The following alternatives have been considered but based on several arguments we believed that the best choice for Malawi currently the Envirofit wood stove is.

- Masonry stoves are not necessarily cheaper than manufactured stoves and based upon our own observations they wear quickly. As a consequence in the course of time even more fuel than the traditional way of cooking is needed.
- Clay or mud stoves require skilled craftsmen for obtaining an optimal performance which makes them more expensive than expected. Even then, field tests show that their performance and durability is generally lower than the performance obtained for manufactured stoves.
- Solar ovens work the best with food that is cooked slowly over several hours and are consequently not applicable for the cooking style in Malawi.
- Due to the fact that up to more than 70 % of the chemical energy is lost by the production of charcoal the overall fuel consumption of even high efficient charcoal stoves is more than observed for the Envirofit woodstove.

## 2.2 Results of the pilot in villages, health centres and guardian kitchens

In the beginning of 2012 we imported 54 stoves into Malawi and field tested these in villages and remote health centres. In a few villages we left a number of stoves and through a rotation system nearly all households had the opportunity to test the stoves for about one week. The response of the users was extremely positive.

### *a. Demonstration in Dickisoni*



One of the women who had used the stove for one week said: “With only three sticks of wood I could prepare ‘nsima’, boil my beans and heat some water. When can I get such a stove”.

### *b. Ludzi Community Hospital (Mchinji)*

With the help of Dutch funds we could replace the old guardian kitchen which was full of smoke with an improved, better ventilated new guardian kitchen. Combined with the use of 15 clean cooking stoves the women can prepare the meals for their family members in a nearly smokeless environment.

*Old guardian kitchen*

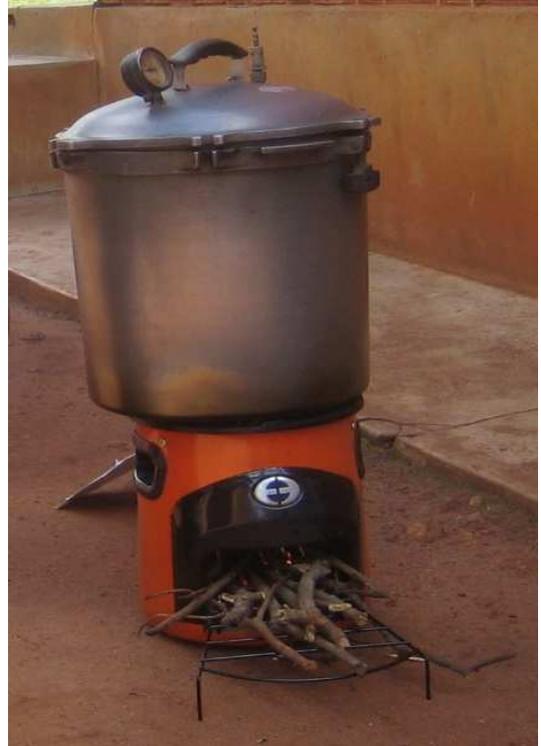


*New guardian kitchen*



*c. Nambuma Community Hospital*

As a replacement for the expensive and inefficient charcoal or paraffin heaters we donated stoves to various institutes for the sterilization of medical instruments. Within about 20 min. the autoclave was on pressure. The result is an adequate and fast sterilization of medical instruments!!!



*d. Cooking in Chinyata*



All reports from the users were extremely positive and therefore in the third quarter of 2012 members of SSGHM decided to continue on the same path!!

### **3. Distribution partner**

Catholic Development Commission in Malawi, CADECOM, was established in 1984 as Caritas Malawi. In 1999, Caritas Malawi was renamed CADECOM but remains a member of Caritas International. CADECOM employees regularly visit the villages. Their mission is to stimulate the development of the population in many areas. They know the people and together with the villagers they have experience with the "Village Savings and Loan Concept". Using this concept, small amounts of money can be saved for the purpose of the acquisition of e.g. a clean cooking stove.

### **4. Fund raising**

When shipping a 20' container with maximum 1300 stoves the cost price including transportation is estimated to be 40 USD. As the beneficiaries in the rural region cannot afford this high amount we have to find donors to fill the large gap between the cost price and the expected yield. Funds from large organisations like The Global Alliance for Clean Cooking are focussed on much larger organisations and thus not applicable for us at this moment. To be qualified for Carbon Credit at least a few thousand of stoves should be distributed on an annual basis. And thus for the time being we have to rely on "Crowd funding". However, partly due to the global economic recession donations from institutes and private persons have remarkably decreased the last couple of years.

### **5. Shipment of 700 stoves to Malawi**

In December 2012 it turned out that we could acquire 700 stoves under attractive payment conditions. Because we had a reliable distribution partner and a considerable portion of the necessary funds were gathered, we dared to place the order. Thanks to private contributions from members of the SSGHM the necessary funds could be completed!

Together with CADECOM we agreed a selling price for the people in the rural area of MKW 2,500. This is far lower than the cost price but this amount was estimated by CADECOM to be the maximum for people in the rural region who have to survive with less than 1.5 USD a day. The selling price for people in the urban region was set to MKW 15,000. In view the wood costs and the fact that the fuel consumption drops to about 50 % the investment is recovered with 6 months!!!

Stoves were delivered to CADECOM, Lilongwe end of April 2013 and early May the employees of CADECOM started to sell the stoves to rural households in the districts of Lilongwe, Mchinji and Dowa. End of July more than 97 % of the stoves had been distributed. The only remark of the people in the villages was: We want more stoves!!

A summary of the distribution reports compiled by Annie M. Kachere (CADECOM M & E officer) is available for the interested reader. E-mail: [info@stichtingstgabriel.nl](mailto:info@stichtingstgabriel.nl)