

Editorial



Time and again on visiting villages we meet and are moved by people who need our immediate help. The terms of our organisation make us focus on removal of open fires. Sometimes this feels like a great restriction but it helps avoid getting bogged down. We would never be able to help in all the situations where we feel help is so urgently needed.

Nonetheless, from time-to-time, we cannot just move on without doing anything. In such cases, we look for support outside of our organisation. Luckily, to date we always managed to find someone who could help or give a donation. Many thanks to all those who often helped spontaneously. We want to present one such case to you in this newsletter.

We made decisive progress in northern Ethiopia this spring. We completed training of the first 14 stove makers in the Simian Mountains and they have already been very busy. During the support phase of the training, we had plenty of opportunities to speak to villagers and learn of their cooking methods. You can read more about what we learned in this issue.

We already reported on the construction of our demo stove on Pellworm in issue 15 of our newsletter. Today you will find out how the story developed in the meantime.

Finally, in addition to our reports from three continents we would like to remind that in line with the General Data Protection Regulation you have the right to end your subscription at any time using [this link](#). If you do not actively end your subscription, we assume that you want to continue receiving our newsletter and are happy to be able to keep you informed about the progress of our work.

Die Ofenmacher hope you enjoy this newsletter.

Dr. Frank Dengler, Chairman

Stove Counter May 2018

65656 smoke-free stoves in Nepal*

628 in Kenya

2163 in Ethiopia

*including 7141 Rocket Stoves for emergency accommodations

New Ofenmacher-Video on Youtube

[Cook with Sewagegnehu: A happy stove owner shows us how](#)

Apart from Stove-Making

Nepal: Help for a family in need

Last year our Nepalese stove-makers Sita Rupakheti and Sushila Bhatta whilst building stoves got to know a family in the village of Jaisithok in Gulmi District. Gita and Janak Kunwar are farmers in one of our project areas. They have been married for a year.



Gita with the quadruplets

They were looking forward to their first child and were surprised when Gita gave birth to quadruplets; two boys and two girls. The children were very small and seriously under weight but were well enough to survive. The birth was accompanied by joy and by worries. Having many children is valued in Nepal but how could the parents manage to feed and provide for four babies.

Sita Rupakheti told us of the family and how they had moved closer to Kathmandu to ensure better medical aid for the children. Anita and I visited the family in their rented one-room flat near Thankot. Sadly, one of the boys had died suddenly for no obvious reason.

Janak tried to earn money selling simple clothes made in Nepal. That was enough to pay for their daily needs. However, the family had built up significant debts to cover the rent as well as medical costs. Janak worked hard from dawn till dusk pushing his sales trolley from village to village; selling sometimes more, sometimes less but never enough to support his family. Gita and her niece took care of the children. Nonetheless the children were prone to infection, were undernourished and too small for their age. The doctors had prepared a good diet plan, but that cost more than Jana brought home.



Janak as a clothes dealer

After Anita recounted the tale in a Skype call, I could motivate many friends to support the Kunwars. Die Ofenmacher as an organisation could not help in this case as our statutes specify that donations may only be used to support stove making. Nonetheless several members of our organisation offered private funds to provide un-beaurocratic help directly.

Thanks to the donations, we were able to rent a second room so the six-person family no longer had to cook, eat and sleep in a single room. Then we took care that the

family received sponsoring to ensure that the children could stick to their recommended diet. That dramatically reduced the financial pressure, which the family was under and was of most

help for the children. Gita opened a special account at a local bank; Anita has set up a monthly bank transfer to the account.



Farm plot with hut



Tomato cultivation



Zucchini cultivation

Now nearly a year has passed and the family's situation has improved further. As Janak wasn't successful as a salesman he leased a plot of land with a hut where he moved with his family. The raised site on the edge of town is ideal for growing vegetables. The children practically live in the country and have more space.



Second birthday

Janak and Gita both have an agricultural background and grow pumpkins, potatoes, radishes, lettuce, tomatoes and herbs. They have achieved good yields and can sell vegetables in their neighbourhood. Janak is visibly more relaxed than a year ago. He enjoys his work and spends lots of time with his children who are growing up in a rural environment and are developing well.

A good example of help to self-help in my opinion. We plan to continue supporting the family. However, the children are now two they are still small and underweight for their age.

We Ofenmacher are very happy that our staff in Nepal earn money from the work of our organisation and are able to help themselves and those around them. Our heartfelt thanks and the children's' smiles go out to all those who help and provide generous donations.

Christa Drigalla

Stovemakers in Ethiopia's Highlands **Third phase of our project in the Simien Mountains**

We reported on the pilot phase of the project sponsored by the [African Wildlife Foundation](#) in the Simien Mountains in issue 15 of the Chulo-Herald, July 2017. The pilot project was completed by the end of 2017. The results were positive across the board allowing us to start phase three of the project in March of this year.

During the so-called Startup-Phase we trained the first 14 men and women in the villages of Milligebsa and Adisge as stove-makers. This training was the kick-off for a series of following trainings and marked the begin of the productive phase of the project.

As in the pilot phase, Katharina and I were accompanied by Abebaw Birhanu, our coordinator in Alem Ketema, and two experienced stove-makers Genet Mekeberiw and Yeshewatsehay Delelegn (Yeshwa). The three of them already held several successful trainings in Alem Ketema and were willing to pass on their skills in northern Ethiopia.

The office of the Simien Mountains National Park let us use their site and a meeting room and assigned Getahun Tassew (Master of Biology) as coordinator, translator and escort for our project. Getahun completed a lot of the preparatory groundwork for the training before we arrived including selecting the 14 candidates. Work with Getahun was enjoyable and successful. He will support the project at least until autumn; and we hope to win his support even after that.



Practical training ...

... and theory

We usually prefer middle-aged women in difficult social situations, e.g. divorced or widowed single parents. That gives them a chance to earn an income, support their families and improve their standing in the village. This time we offered Aster and three men Mulualem, Alkadir and Tikabu places on the training. All four had done excellent work in the pilot phase and gladly accepted our offer.

The training consists of two parts: a six day training followed by a three week supervisory period. The training, which we held in the park office, covered theory and practical skills. The building of a stove is demonstrated; and then the first stove in a household is built under supervision. This practice is interspersed with theory on health and safety during stove-making.

Each household is different. Where is the best place for the stove? How are the prevailing winds? What are the walls and roof made of? The stove maker has to clarify these and many other issues together with the household. That can't be simulated in class; therefore we make a point of building the first stove in a household.



The first stove is finished!



and the smoke vents through the chimney

Of course, students are not qualified to build high-quality stoves completely alone after only six days of training. During the supervising phase, they are accompanied by the trainers and



14 successful graduates, coaches and organizers

received advice during their first steps as stove makers. Only when they have built several stoves under supervision are the fully qualified to work independently.

All 14 candidates successfully completed the first part of the training and re-

ceived their certificates in a ceremony accompanied by the mayor, the local councillor, the head of the park office and representatives of the energy and health offices. After that, they returned to their home villages Milligebsa and Adisgeto take up work as stove-makers. We visited them daily in the following three weeks.



Village meeting



Future customers

In preparation, we held village meeting in parallel to the initial training to prepare villagers for the new stoves. In Milligebsa dozens of households immediately registered to receive a new stove, in Adisge things didn't go quite as well. We had our work cut out to convince people of the advantages of the changes and these new "modern methods". By the end of the three week supervised phase, 14 stoves were completed and 7 more were started. By the end of May 42 stoves were completed and many more were planned or under construction. We are making progress!



Tadla with the numbered outlet of her first stove

Stove maker and customer at the same time: Fatima's first stove

The current plan is to hold further trainings in October after the end of the monsoon season. With a growing army of stove makers, the number of households with clean efficient stoves will grow rapidly in the Simien Mountains. Altogether, we plan to build 10.000 stoves in the Simien Mountains together with African Wildlife Foundation.

Frank Dengler

Cooking methods in the Simien Mountains And how the Chigr Fechi helps

We had plenty of opportunity to observe cooking habits in our time in the Simien Mountains. We have developed a method to classify habits with respect to smoke development and energy consumption in order to estimate the effect of our Chigr Fechi stove. The following analysis is specific to the conditions in the area we surveyed and cannot be transferred to other regions without analysis and adaptation.

Different cooking procedures were registered and compared to a reference method (in this case roasting coffee beans) by observation and discussion with the housewives. The comparison has the advantage that the results are independent of the size of the household.

The following tables shows the frequency and the relative values for smoke development and energy usage for the cooking methods used in the mountains. The value 5 for the energy required to brew coffee means that 5 times as much energy is required to brew coffee as to roast the coffee beans. The value 3 in the column smoke generation means that three times

as much smoke is generated. The reason in this case is that coffee is brewed on a smaller fire resulting in less smoke over time.

| Activity | Frequency (per week) | Relative energy consumption | Relative smoke creation | Energy relevance | | Smoke relevance | |
|---------------------------|----------------------|-----------------------------|-------------------------|------------------|-------|-----------------|-------|
| | | | | | | | |
| Roasting coffee beans | 7 | 1 | 1 | 7 | 1,2% | 7 | 1,3% |
| Brewing coffee | 11 | 5 | 3 | 55 | 9,1% | 33 | 5,9% |
| Cooking shiro | 7 | 10 | 6 | 70 | 11,6% | 42 | 7,5% |
| Reheating shiro | 7 | 1 | 2 | 7 | 1,2% | 14 | 2,5% |
| Baking injera/dabbo | 2 | 200 | 200 | 400 | 66,4% | 400 | 71,4% |
| Roasting Kollo | 7 | 3 | 3 | 21 | 3,5% | 21 | 3,8% |
| Roasting barley for tella | 0,1 | 400 | 400 | 40 | 6,6% | 40 | 7,1% |
| Roasting beans/peas | 0,05 | 40 | 60 | 2 | 0,3% | 3 | 0,5% |

Injera: Ethiopian flat bread

Shiro: Mashed beans, here a placeholder for several side dishes to injera

Dabbo: Bread that is prepared on the injera cooking plate

Kollo: Roasted grain

Tella: Fermented local "beer"

The product of frequency and relative value gives the relevance.

Notes:

Coffee beans are usually roasted daily; coffee is brewed once or twice a day (when guests arrive, like us, more often) whereby the second coffee usually uses the beans, which were roasted that morning.

Shiro is usually made fresh for the first meal of the day and warmed up for the second.

Making injera and dabbo takes a lot of energy and generates a lot of smoke. It is normally made twice weekly. Dabbo is usually made immediately after the injera; so we combined these two dishes.

Roasting kollo only takes three minutes if is made from wheat. Other cereals take longer. We used an average value here.

All women told us that roasting barley for Stella takes by far the most energy and causes the most smoke. However, it is only made every two or three months and mostly made outdoors.

Conclusions:

About two thirds of the energy usage and smoke creation result from the preparation of injera and dabbo. A main component of the Chigr Fechi is the injera hotplate. The Chigr Fechi therefore addresses the main problem directly.

Roasting barley for tella is not a problem in our opinion as tella is seldom cooked and usually cooked outdoors where the smoke is not a health risk. The Chigr Fechi is not suitable for roasting barley as the barley plate is much larger than the injera plate and does not fit on the stove, even if the cook were prepared to change the plate.

Roasting kollo, peas and beans contribute less than 4% to the relevance count. The cooking plate is much smaller than the injera plate but too large for a cooking pot hole. Due to the low relevance, we will not address this topic.

Mainly the Chigr Fechi is used today for making injera and dabbo. Our design therefore addresses 66.4% of the relevant energy usage and 71.4% of the smoke generation. Based on a factor 2 performance improvement that means a



practical energy saving of 33.2%. Assuming that nearly all the smoke is exhausted through the chimney the health improvement can be estimated with 71%.

A further 12.8% energy relevance and 10% smoke relevance would be the potential for Shiro preparation, 10.3% and 7.2% with coffee roasting and brewing

Currently the shiro-hotplate of the Chigr Fechi is only used by a few housewives. Most of the women who do not use the shiro-hotplate report that it is too much work to go to the kitchen only to cook shiro.

If we could bring housewives to use the shiro-hotplate of their Chigr Fechi consistently that would result in energy saving of 39.6% and smoke reduction of 81%. We will carefully measure the use of the shiro-hotplate in the monitoring and work on measures to increase its usage. One possibility is construction of an extra shiro-Chigr Fechi (without injera-hotplate) in the main body of the house.

Coffee is only made in the main room. Guests and family come together to drink coffee and the housewife wants to stay with everyone. When it is cold, the warmth of the fire is an additional attraction. It is therefore unlikely that we will be able to move coffee preparation into the kitchen; another reason why an additional stove in the main room could be a good solution.

All the housewives we spoke to told us that they no longer need wood to prepare injera and dabbo with the Chigr Fechi; Eukalyptus leaves are sufficient. These are freely available and only need to be collected. Over and above the general energy savings our stoves also help reduce the use of valuable wood for cooking. The [video shot with Sewagegnehu in March](#), is showing a stove being heated only with leaves.

Frank Dengler

Cooking, Talking and Learning

Events concerning the Nepal-Stove on Pellworm

Early in the summer of 2017 we built a Nepal clay stove on Pellworm island in the North Sea. Frank Dengler and Katharina Dworschak visited Christa Drigalla and built the two plate stove in the garden of the eco-farm Zetl. It was planned as a location for cooking tea and daal¹ with friends, to promote discussion and for demonstrations for school classes on the island which have supported Die Ofenmacher e.V. for a long time.

First meetings were already held last year. Then a corrugated iron hut was erected around the stove to protect it during winter - also a common Nepalese construction. At the start of May, the first event of the new year was planned but, what a shock, the stove did not work properly.



Starling nest in the chimney

Smoke poured down out of the chimney and about through the stove. What could have gone wrong? The stove looked fine after the winter, had no cracks and had remained dry. When we



Silke Zetl-Marcussen (right)
and guest Elvira Schauwetter

we decided to clean the chimney, we found the cause of the problem a starling's nest with five eggs was built in the top of the chimney. We move the nest to a nearby hedge, despite protests of the starling parents. After that, the stove worked as expected.

It was good that we planned this early event, as an eleven person group from several East-African countries planned to visit the stove mid May as an excursion to investigate sustainable energy-use during a voluntary "ecological year". The stove, which helps reduce

¹ Daal is the typical lentil dish in Nepal, which is eaten together with rice (bhat)

the amount of wood used in cooking, was a good practical example and gave us the opportunity to talk whilst drinking Nepalese tea. The African guests from Kenya, Rwanda, Uganda, Tanzania and Ethiopia also visited a hybrid power plant on the island and took part in a round table discussion as part of the “Ecology Week” held annually on Pellworm.



Runghold-Family visiting

At the beginning of June another group of 18 visitors from the mainland who have visited Pellworm annually for the last 25 years, also visited our stove. The so-called “Runghold Family” was very interested in our stove. Christa explained how the stove functions with pictures and at the stove. Once again, we had Nepalese tea and daal; both cooked on the stove. This group will certainly continue discussing their visit and supporting our work.

This summer several school visits are planned and the elders from the church community plan to spend an afternoon visiting our stove. Our thanks go out to Silke Zetl-Marcussen for the great organisation of all these events.

Christa Drigalla

Imprint

Editor Frank Dengler
Authors Christa Drigalla, Frank Dengler
Publisher Die Ofenmacher e. V., Euckenstr. 1 b, 81369 München
Internet <http://www.ofenmacher.org>
E-mail info@ofenmacher.org
Facebook <http://www.facebook.com/ofenmacher>
Account IBAN: DE88830654080004011740, BIC: GENODEF1SLR, Deutsche Skatbank