
TUI'K RUCH'LEW

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ANNUAL REPORT //2020

REPORT BY TUI'K RUCH LEW





A WORD FROM THE PRESIDENT

As this tragic year draws to a close, my first thought is of the families all over the globe, who have lost members and survived the grief of loss and trauma of fear. In Santiago Atitlan, we have shared that tragedy with the rest of the world, as even a member of our staff has suffered through COVID19 and the struggle that recovery requires.

TRL entered January 2020 in an optimistic position, with new grants arriving in the first quarter of the year and the steady progress of the certification process with Verra for VCU's and Sustainable Development Verification Impact Standards. Our excellent Princeton in Latin America (PiLA) Fellow and a lively corps of active volunteers were making progress on all fronts such as refining data collection, fundraising and adding depth to our micro-saving and environmental education programs.

Then Guatemala closed down the country's borders, locked down all activities and TRL came to a screeching halt! Our assessor from the Spanish company, AENOR, who had come to validate TRL's claims as to the amount of carbon emissions our stoves are reducing as well as TRL's claims of positive impact for Sustainable Development Goals, was trapped in Guatemala, because scheduled flights to Spain were cancelled. Volunteers fled to their own countries on special evacuation flights.

No business or organization was allowed to open and we furloughed all of our workers (with pay) from March until September. We worried about the 64 new stoves we had installed in the months of January and February, as we could not go out into the field to make sure the technology was being successfully adopted. We worried about the stoves which would need repairs and how to keep people from chopping out the front of the stove, when they couldn't reach us to get a new combustion chamber. We worried about years of successful work evaporating from lack of follow-up. And when a \$16,000 grant was cancelled due to the COVID-caused economic crisis, we worried about TRL's survival.

And then, like everyone else in the world, our team made a giant leap in technology. We learned to utilize smartphones to have meetings and to design educational videos to share on cell phones -- for example, concerning how to repair and maintain stoves. By this time, our team was scattered: Ava Scott, our PiLA Fellow, was evacuated to Virginia and worked from there; I was trapped in Washington State; our board members and some staff were in different villages around the lake. Yet we were able to function as a team and keep TRL moving forward.

One important decision the Board of Directors made during this time, was the decision to hire a director, as we could see that it could be years before PiLA was functioning again and the organization needed continuity. Several candidates applied and in June the Board interviewed them via Zoom. We selected Dr. Jessica Kind, who joined us in August, bringing us her skills in environmental science, environmental education which she teaches on the university level, contacts in the world of sustainable technology, fundraising, graphic design, programming and computer sciences, social media savvy and organizing and leading environmental NGOs. You can learn more about her in this report under "Meet the Team".

Though TRL did not meet the original 2020 goals we had set for the quantity of stove installations nor visits to stove owners during the year, we all survived COVID19, learned new skills for communication and finished the year with strong new leadership under the direction of Jessica. The completion of our verification by Verra is just around the corner and then we can enter the voluntary carbon credit market, with the goal of eventually making TRL nearly financially self-sustainable. Meanwhile, biogas digester technology is on our horizon. I think we can consider this a success story in the horrible year of COVID-19!

CANDIS E. KRUMMEL
BOARD OF DIRECTORS



IMPROVED COOKSTOVE PROGRAM

Santiago Atitlán, a Tz'utujil Maya community of 55,601 inhabitants ([INE, 2020](#)), is located on the shore of Lake Atitlán. It suffers an overall poverty rate of 78.9% and an extreme poverty rate of 26.3% ([Entre mundos, 2020](#)). Due to this economic situation, most families use open fires in their homes--typically the traditional, three-stone hearth--to prepare their food. Open fires in the houses directly threaten the health of the families due to household air pollution from the toxic smoke.

Moreover, the families spend about 22% of their monthly income buying firewood for cooking or in the case of collecting firewood, spending time on this activity.

In 2020, three hectares of forest were lost in the Municipality of Santiago Atitlán, 2020.

The energy-efficient ONIL cookstove is a long-term and sustainable solution. Why?

Environmental Impact:

Deforestation is reduced by up to 70% with the ONIL cookstove. Burning less wood reduced greenhouse gas emissions.

Social Impact:

The contained fire reduces household air pollution (HAP) by 99% in the homes and thus reduces smoke-related health problems such as respiratory illnesses, itchy eyes. Moreover, the contained fires avoid burns of women and children.

The savings of the firewood saves time that women can spend with their families and on education.

Economic impact:

The money saved on firewood contributes to the family economy.



Impacts are generated by changing from open fire to an improved cookstove

MONITORING PLAN

The monitoring system for our improved cookstove program consists of home visits and household surveys. All survey data are monitored with KoBo Toolbox - a free open-source tool for mobile data collection. We named our customized system **lx k'ola pe jay** that means "Is someone home? In Tz'utujil.



Household visits are being conducted by TRL's outreach team

MONITORING DURING COVID

"I am afraid that people are destroying the stove because we cannot perform maintenance"

Isabel Quinilla

62

ONIL STOVES HAVE BEEN
INSTALLED

24

MAINTENANCE VISITS
HAVE BEEN DONE

20

COMBUSTION CHAMBERS
HAVE BEEN REPLACED

1

First household survey consists of basic client information, site information for the ONIL stove, as well as an assessment of the firewood use, health status, sanitation situation and the economic level of the beneficiary.

2

Within **one week** after the site visit, the ONIL stove is installed. Beneficiaries are being educated about the use and the maintenance of the ONIL stove.

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A **1-week** follow-up is conducted to ensure correct use of the ONIL stove and user satisfaction. The survey also includes a more detailed recording of the user's health status.

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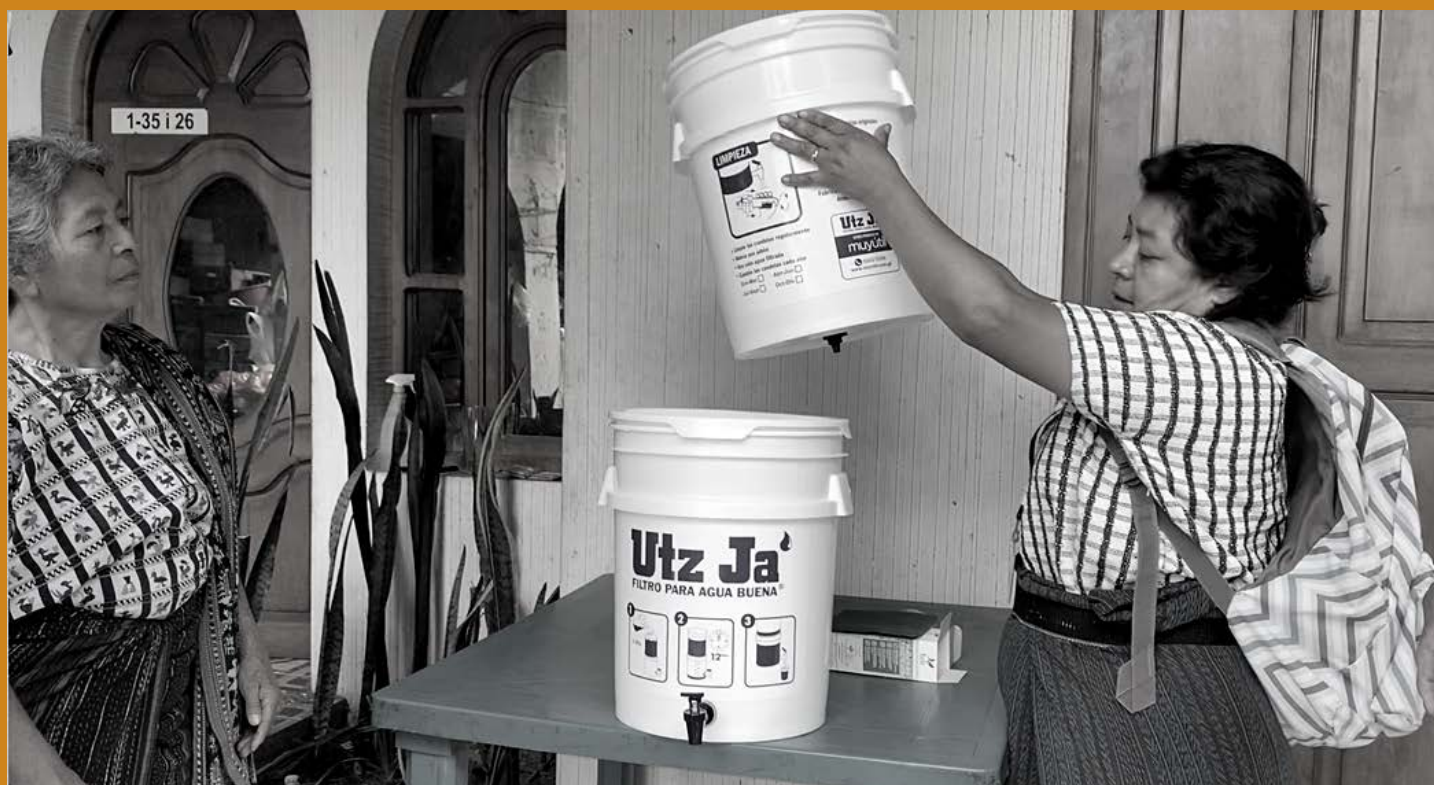
The follow-up after **3 months** is carried out to ensure correct use and user satisfaction and to carry out a more detailed survey of the impact of ONIL stove use on the health and economic situation of the beneficiaries. This also includes the evaluation of the firewood reduction.

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1 year after the installation of the ONIL stove, a household visit is conducted to check the general condition of the stove and to determine if any maintenance is required. The survey also includes a further assessment of the health and economic improvement of the beneficiaries.

6

Annual home visits follow throughout the life of the stove. The survey includes the assessment of health, economic and environmental impacts.



UTZ JA' WATER FILTER

Among Santiago Atitlán residents, 89% live in urban areas and 11% live in rural regions. Most residents get their drinking water from household or public taps (90%), with the remainder receiving their water directly from the lake (7%) or other sources such as streams and wells (3%)*.

In the 1990s, Santiago Atitlán in collaboration with external aid organisations developed a public water system as a response to the cholera epidemic near the end of the Civil War.

1991 - UNICEf donated a 125-horsepower water pump that served 3,500 household taps with water from Lake Atitlan.

1993 - Guatemala ranked third in the northern hemisphere in reported cases of cholera**. The municipality was advised to start a chlorination treatment to the town's water supply as an additional public health measure.

2005 - As a response to the natural disaster of Hurricane Stan, Santiago Atitlán was advised to increase the levels of chlorination in its water supply.

* Instituto Nacional de Estadística (GU). Censo de Santiago Atitlán. Guatemala: INE; 2006)

** Koo D, Aragon A, Moscoso V, Gudiel M, Bietti L, Carrillo N, et al. Epidemic cholera in Guatemala, 1993: transmission of a newly introduced epidemic strain by street vendors. *Epidemiol Infect.* 1996;116(2):121-6.

2010 - Six pumps transport water from Lake Atitlán and distribute it to household taps in Santiago Atitlán. The municipal water system is treated with chlorine dioxide as lake water is contaminated by fecal bacteria, agrochemicals among other pollutants. The municipality manages the chlorine treatment, which is monitored by the local office of the Ministry of Health (Centro de Salud).

Sometimes the levels of chlorine are so high that people refuse to drink the water. The fragile and outdated water distribution system is another reason why some pipes are porous. Thus, impurities can easily enter the piping system. Brownish water is especially a problem during the rainy season. Therefore, families who have the economic resources buy bottled water or have a in-home filtration system, while families with scarce financial resources do not have that choice.

TRL's water filter system is designed for families with economic struggles. The British Berkefeld Super Sterasyl ceramic filter can remove pathogenic bacteria (such as E-coli, Salmonella, Legionella, Cholera, Salmonella Typhi, Shigella, Klebsiella) , cysts, organic chemicals from sewage effluents. Moreover the ceramic filter can also reduce chlorine levels, turbidity, sediments, and particulate.

With only GTQ 300 for the water filter, it is an affordable alternative to provide safe and clean water to the families. With an average family size of 7, the ceramic filter needs to be changed every year. The acquisition costs are therefore about GTQ 25 in the first year. With GTQ 150 for a new ceramic filter, the maintenance costs amount to GTQ 12,50 per month.

DURING COVID



"Especially now, during the COVID pandemic, access to clean drinking water is essential"

Maria Sosof

7

**UTZ JA' WATER FILTERS
HAVE BEEN INSTALLED**



MICROSAVINGS PROGRAM

TRL is aware of the economic situation of the families we work with. Most of the beneficiaries of our programs live from hand to mouth. Based on the national statistics, in 2011, 97.31% of the inhabitants of Santiago Atitlan lived in poverty, while an astonishing 43.74% are living in extreme poverty (INE 2011). Recognising that poverty is associated with inadequate nutrition, food insecurity, inadequate childcare, lack of access to health care, unsafe neighbourhoods and under-resourced schools, TRL aims to provide financial assistance to these families through TRL's Micro-Saving Programme offer.

This programme aims to ensure that families can afford the spare parts for the ONIL cooker and water filters, but also to educate how savings - as small as 1 GTQ - can make a difference in the long run. The response to the microsaving program has been very positive. Especially women are grateful for the opportunity to have small savings for emergencies. During the COVID pandemic, TRL's outreach team realized the high demand for savings - unfortunately for the basics, such as food.

DURING COVID

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FAMILIES JOIN THE
MICROSAVING PROGRAM



COVID RESPONSE

The year 2020 was very challenging for Tu'ik Ruch' Lew TRL with the Covid 19 pandemic, because governmental restrictions have impaired activities that require direct visits to our clients' homes. That meant no stove installation, no stove maintenance, and no water filter distribution. Thus, it prevented us from achieving our target of 200 stove installations.

We had to pause for 6 months. Our team was worried about their jobs and we were faced with the withdrawal of donations.

So it was time to think strategically with the willingness to survive this crisis - and we did!

ONLINE MAINTENANCE FOR THE ONIL STOVE

TRL used the involuntary free time to develop a online maintenance service for our beneficiaries of the stove as our aim was to not loose a angle stove due to the lack of maintenance.

See our YouTube channel





FOOD DISTRIBUTION

It was an extremely difficult year for the indigenous Mayan Tz'utujil community. Many families depend on tourism and coffee production. As Guatemala closed its borders, halting tourism, closing businesses, and stopping coffee exports. As a consequence, many people lost their jobs because they had informal work in the tourism industry - artisans, restaurant workers, hotel service personnel no longer could maintain their families.

These were moments of frustration, depression and sadness for the families. The economic crisis forced families to become innovative in order to put tortillas and beans on the table. That meant illegally collecting firewood for cooking, fishing and gathering food in the flourishing forests, and selling their possessions.

When our team noticed that even women started to fish - a typical activity that is only done by men, we knew we had to take action and help some of our stove owners in these difficult times. We thought about new strategies to find donors to provide food aid.

Thanks to our local and international network, Rotary e-Club of Lake Atitlan Guatemala, Barbara Kind and David Griggs jumped in and helped us give food packages to 107 families in need of food. We and our stove owners are very grateful for your help.

2020 IN A NUTSHELL

January to March: 57 ONIL stoves have been installed.

March 13: COVID hits Guatemala

25 March: A large grant for the ICS program was canceled due to COVID.

April 4: Due to the pandemic situation our PiLA Fellow Ava Scott was called back to the US. Ava continued working remotely from the US

August: The new director, Dr. Jessica Kind, joined the team. She onboarded herself remotely and started working with the team through Zoom. Only a 20 minute boat ride away, the distance between Panajachel and Santiago Atitlan felt like 2 continents.

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8 March: The assessor Luis Javier Arribas Alonso reviewed the improved cookstove project (ICS) for the VCU and SD VISta certification.

21 March: the lockdown halted all TRL activities until October.

March to September: The team was released with full pay for three months and ½ salary for two months.

July: A board meeting was held on Zoom. The board of directors decided to hire an Executive Director instead of continuing with PiLA Fellows.

September to December: Under the new leadership of Jessica, the team returned to work remotely. What initially felt like an insurmountable technical hurdle quickly developed into a completely natural communication. Zoom meetings then even became fun.

MEET THE TEAM

None of us is as smart as
all of us put together.

For TRL, co-creation is the center of development. Whether we speak of personal development, team development or project development, the TRL team believes in the process of co-creation. TRL placed a strong focus on engaging all team members and community members to foster innovation and community involvement.



Isa is a Tzutujil woman with many culinary skills -- she loves cooking and knows the time women invest to prepare food and what it means to suffer from the problems caused by inhaling smoke from open fires. With her experience in teaching nutrition and cultural knowledge she became one of TRL's educators, an advocate for environmental conservation and technology adaptation. Isa is responsible for promoting and empowering women in the use of the Onil stove. With her open and friendly manner, she communicates the benefits of the stoves for the families and the environment.

Maria is a proactive woman who loves to volunteer to contribute to the empowerment of young people and women. Maria cares about the environmentally friendly development of the Maya Tz'utujil community. She wants to make a difference by waking up the people about social injustice and environmental destruction. With her honest and outspoken nature, she is our second environmental expert and technology adoption specialist. Maria is responsible for the microsavings program within TRL.

Jose is passionate about working for his Tz'utujil Maya community. Since his teenage years, Jose has been working in construction in many different places in Guatemala - building schools, homes, and WASH related infrastructures such as hand washing stations. This experience is pure gold as the installer of ONIL stoves for TRL. His generous spirit and his eagerness to help the community are present in his day to day work. During the pandemic he was envisioning production of the energy-efficient stove by local builders here in Santiago and created a mold for a replica of the open-source, ONIL stove.



ISABEL QUINILLA PERE

Outreach team



MARIA SOSOF SOSOF

Outreach team



JOSE CUA AJUCHAN

ONIL Stove installer



DR. JESSICA KIND
Managing Director

Jessica is the director of TRL. With her international background in mechanical engineering, environmental and climate science she is the perfect complement for our local team. Many years of implementing water and sanitation solutions in developing countries have made her aware of the cultural and political challenges accompanied with the implementation of new WASH technologies. For her, the WASH sector is one of the main leverages in combating global warming (2% of the anthropogenic GHG emissions come from pit latrines) and for the sustainable development of communities most affected by climate impacts. We are happy to work together with her towards climate resilient development.



CAMERON KRUMMEL
Administrator

Cameron came from the United States to live in Santiago Atitlán at the age of 5, where he fell in love with the place and its people, and has always enjoyed making friends with the locals. Since childhood, he understood the situation of the community and its needs, so he founded the association Tuik Ruch' Lew/Helping the earth, contributing his knowledge to protect the precious ecosystems and contributing to a better quality of life for the villagers. He is the financial administrator of the association.



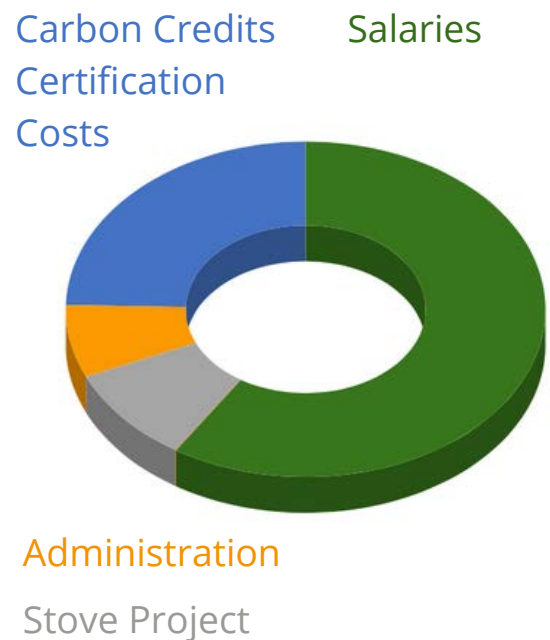
AVA SCOTT
PiLA Fellow

Ava has been working with TRL as a PiLA Fellow. She was the main driver in 2020 for completing the certification for the carbon credits with Verra. We are so grateful for her positive spirit and her initiative to get this process going in spite of all the obstacles we faced. At the end of 2020, she left her volunteering position to begin a new career adventure. We wish her all the best.

REVENUES



EXPENSES



FINANCIAL REPORT

The year 2020 closed with a **positive balance of GTQ 6,343.91**. In spite of the cancellation of a \$16,000 grant due to the COVID financial crisis, the absence of North American supporters who annually visit Guatemala and help cover the costs of many stoves for new owners, TRL managed to raise **GTQ 458,498.22** from individual supporters and through on-line fundraising campaigns.

Salaries for 7 people have been the major costs for 2020. This COVID year was a difficult year for installing and maintaining stoves and water filters.



TUI'K
RUCH'LEW

THANK YOU!

ANY QUESTIONS?

Contact us at director@trlearnth.org.