

TU'IK RUCH' LEW



ANNUAL REPORT
2023



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Letter from the President of the Board of Directors

2023 has been a year of growth and optimism for Tu'ik Ruch' Lew.

In spite of a wave of dengue fever, frightening inflation, chaos of the election of a new President in Guatemala which caused the closure of activities in the country for weeks, we still were able to install 157 Improved Cook Stoves—short of our 200-stove goal—but amazing under dire circumstances. Community members drove those installations by word-of-mouth recommendations that the stoves help to save money, plus creative solutions on the part of our staff who struggled to help the poorest families save money on firewood in this time of great need.

We accomplished our goal of strengthening TRL's abilities in the areas of communications, grant writing and improving our data collection system. In addition to invaluable programming skills shared with us by a US volunteer, we welcomed a Tz'utujil videographer who plans to volunteer his talents "because TRL is the only organization in Santiago Atitlan that is doing things to help the environment."

We discovered a new way of creating interest in TRL's projects, by opening our activities to Rotary Club members visiting Lake Atitlan and looking for projects to support. This was a joint activity with the Rotary Club of Lake Atitlan (disclosure: I am a member), that decided to host visiting clubs as their major project, sending invitations to Rotary clubs from all over the world to "Visit Lake Atitlan." TRL hosted two clubs from Michigan in 2023; both visits opened doors for the development of Rotary grants.

In May, we took the first steps towards the construction of biogas digesters by making a hands-on visit to a similar project in Copan, Honduras. Edy Omar, director of CASM, who sponsored the project there, is eager to join us here when TRL initiates our biogas program.

We welcomed two new members to our Board of Directors – which continues to be a board driven by Tz'utujil women who cherish their stoves.

We successfully supported the David La Motte school in a letter urging immediate accreditation by the Ministry of Education, so that they could begin primary grades at the school in 2024...more students being a necessary ingredient for TRL to be able to install a biogas digester there.

While the life of a small, grass-roots NGO is always filled with the uncertainty of acquiring funding, we found, once again, that TRL's projects inspire donors and their generosity was enormous.

With the belief that positive actions attract positive people and organizations to us, we close our year with gratitude for all the love, talent and support showered on Tu'ik Ruch' Lew in 2023!

Sincerely,



Candis Krummel

CANDIS KRUMMEL

A Decade of Environmental Impact through Improved Cookstoves

*from Our Director of Environmental and
Social Responsibility, Dr. Jessica Kind*



The Urgent Need for Climate Action

Climate change casts a long shadow over our planet. Global greenhouse gas emissions continue to climb, pushing temperatures to record highs. The year 2023 marked the hottest on record, a stark reminder of the urgency to act. The latest data reveal that global emissions hit record highs in 2022, and the concentration of carbon dioxide (CO₂) in the atmosphere reached unprecedented levels. Our planet's atmosphere, oceans, and biosphere are experiencing rapid and widespread changes. Climate-related weather extremes, including heat waves and storms in Europe, hurricanes in the Americas, and floods across Asia, brought the dangers of climate change into sharp focus in 2023.

The Evolving Landscape of the Voluntary Carbon Market (VCM)

The VCM has emerged as a tool for addressing climate change by enabling companies to offset their emissions through projects that reduce greenhouse gases. However, the market has undergone significant changes over time. Early days (pre-2015) saw a focus on offsetting emissions through projects like REDD+ credits (reducing deforestation) and capturing greenhouse gases from facilities. The primary goal for participating companies was achieving carbon neutrality. The 2016 Paris Agreement significantly boosted the VCM. The agreement's Article 6 legitimised the concept of carbon offsets and opened doors for voluntary markets to play a role in national climate targets. This recognition fueled market growth, with its value reaching nearly \$2 billion in 2021. The focus for businesses has shifted from carbon neutrality to achieving net-zero emissions, driving a surge in companies seeking carbon offsets through the VCM. However, this growth has been accompanied by concerns regarding the quality and transparency of carbon credits. The market is maturing with a stronger emphasis on project quality, integrity, impact measurement, and robust verification processes.

TRL's Approach: Leading the Way with Credibility and Impact

TRL stands out in the VCM with its unwavering commitment to project credibility and long-term impact. Our cookstove program holds both Verified Carbon Units (VCUs) and Sustainable Development Verified Impact Standard (SD VISta) certifications, demonstrating our adherence to rigorous standards.

A Robust Monitoring, Reporting, and Verification (MRV) Process

TRL's MRV process sets us apart. We go beyond the minimum requirements by conducting five comprehensive household visits and surveys in the first year following stove installation. These visits not only assess stove functionality but also gather valuable data on user satisfaction, firewood consumption, and health impacts. Annual visits ensure continued effectiveness and provide opportunities for maintenance and repairs (conducted on 1248 older stoves in 2023). This commitment to long-term project oversight distinguishes TRL and guarantees the enduring benefits of our cookstoves. Additionally, satisfaction surveys and data collection on firewood consumption provide ongoing verification of the project's impact on reducing deforestation and improving respiratory health.

Environmental Impact in 2023: Measurable Results

Since receiving VCU certification in September 2018, TRL has included a total of **824 cookstoves under the VCU protocol**. This includes 224 older stoves that were successfully integrated into the program, extending their lifespan and environmental benefits. In 2023 alone, TRL's dedicated team conducted an impressive **710 household visits**, demonstrating our commitment to ongoing monitoring and support. These efforts included the **installation of 160 new cookstoves**, reaching a total of **1408 cookstoves currently in operation** (including maintained older models). Furthermore, TRL prioritises maintenance and repair of existing stoves, ensuring their continued effectiveness in reducing emissions

The environmental impact of TRL's program is substantial. The 160 new cookstoves installed in 2023 are projected to **reduce CO2 emissions by an estimated 494 tonnes** within their first year of operation. However, TRL's impact extends beyond new installations. The program factors in emission reductions from **older, maintained cookstoves (estimated at 3852 tonnes for 2023)**, utilising a project-specific baseline study and emission factors. This comprehensive approach ensures a more accurate picture of TRL's overall contribution to greenhouse gas reduction, **totaling an estimated 4,346 tonnes of CO2e emissions reduced in 2023**.

Equivalent to Taking Cars Off the Road

The environmental impact of TRL's program extends far beyond Guatemala. Let's put the estimated CO₂e emission reductions into a relatable context. In the United States, the average passenger car emits about 469.6 grams of CO₂ per mile. TRL's program reduced an estimated 4,346 tonnes (or 4,346,000 kilograms) of CO₂e emissions in 2023. This is equivalent to taking cars off the road for millions of miles! Here's the breakdown:

- **Total CO₂e emissions reduced by TRL program: 4,346,000 kg**
- **Average CO₂ emissions per mile by a US car: 469.6 grams/mile**
- **Estimated miles offset by TRL program: 9,233,730 miles**

Simply put, TRL's 2023 emission reductions are equivalent to eliminating the emissions from driving cars for over 9.2 million miles! Considering the average American car is driven around 13,500 miles a year, this reduction is significant. In fact, it's roughly equivalent to taking nearly 684 passenger cars off the road in the US for an entire year. This demonstrates the far-reaching impact of TRL's cookstove program in mitigating climate change.

Local Impact: Beyond Emission Reductions

TRL's program delivers positive impacts that reach far beyond carbon reduction. By promoting cleaner cooking practices, TRL helps to improve respiratory health, particularly for women and children who traditionally spend more time cooking over open fires. Exposure to smoke from open fires is a significant health hazard, leading to respiratory illnesses and even heart disease. The improved cookstoves significantly reduce indoor air pollution, creating a healthier environment for families. Additionally, the program contributes to reduced deforestation by decreasing reliance on traditional firewood collection. This not only helps to conserve Guatemala's precious forests but also empowers communities by promoting more sustainable fuel sources and income generation opportunities through activities like tree planting or alternative fuel production.



DR. JESSICA KIND

Executive Summary

Tu'ik Ruch' Lew (TRL) is dedicated to implementing sustainable solutions to environmental, health, and economic challenges faced by the Maya community and residents of the Lake Atitlán basin. This report outlines our achievements in 2023 and sets forth our goals for 2024.

In 2023, TRL embarked on ambitious initiatives, including the installation of ONIL stoves, exploration of carbon credit sales, and efforts to secure grants for program enhancement. Despite challenges, we made significant progress, installing 157 stoves, engaging in community outreach, and helping to achieve accreditation for the David LaMotte School, the proposed site for our pilot biogas reactor.

Looking ahead to 2024, TRL goals include constructing the first biogas reactor, installing 160 new ONIL stoves, continuing to explore carbon credit sales, and secure grants for program enhancement. Additionally, we will continue to focus on improving our data collection systems and our community engagement, forging new strategic partnerships, and promoting gender equality. We are also initiating "Forest Walks" for Tz'utujil women stove owners -- an immersion in the forest where they will learn to appreciate the majesty and diversity of life in the jungle -- empowering them to protect what they love through the correct use of their Improved Cook Stoves.

With these goals, TRL remains committed to empowering communities, transforming lives, and fostering sustainable solutions in the Lake Atitlán basin and beyond.

Who We Are and What We Do

Tu'ik Ruch' Lew (TRL): Empowering Communities, Transforming Lives

TRL is a grassroots, Guatemalan non-profit with a bold mission: to implement sustainable solutions to the environmental, health, and well-being challenges that threaten the livelihood of the Maya and other residents living in the Lake Atitlán basin. At TRL, we envision a future where the Lake Atitlán basin thrives in all its natural splendor—a future free of the blue haze of air pollution, forests teeming with life, and water running pure. We work to help communities feel empowered to lead prosperous, sustainable lives.



Background

According to the National Institute of Statistics (INE, 2022), out of the 7,272 households in Santiago Atitlán:

- 6,009 households (82.6%) rely on firewood for cooking.
- 132 households (1.8%) use electricity for cooking.
- 460 households (6.3%) use propane gas for cooking.

This distribution underscores the continuing prevalence of traditional cooking methods and highlights the urgent need for sustainable alternatives. The environmental and health challenges we face are not distant or abstract, but immediate and pressing. This urgency is what drives us at TRL to work tirelessly toward fulfilling our mission.

With unwavering dedication, we at TRL strive to address the pressing environmental, health, and economic challenges faced by the Tz'utujil Maya community of Santiago Atitlán and the communities around us. Our grassroots efforts are guided by a vision of a thriving Lake Atitlán basin, characterized by clean air, diverse forests, and empowered communities. These efforts have already directly improved the lives of many families in the Tz'utujil Maya community, providing them with cleaner air, healthier forests, and opportunities for economic growth.



The ONIL Cookstove Program: A Sustainable Solution

The heart of our work lies in implementing sustainable solutions, such as the ONIL Cookstove Program. By installing over 2,400 ONIL cookstoves, we have reduced wood consumption by our beneficiary families by up to 70%, mitigating deforestation and greenhouse gas emissions and safeguarding families' health by reducing exposure to harmful smoke. This initiative has not only improved air quality and reduced respiratory illnesses, but also empowered the women in these families to engage in income-generating activities, thereby fostering economic independence and dignity.



Verra Certification: Commitment to Sustainable Practices

TRL takes pride in its commitment to sustainable practices and environmental stewardship. We've been certified by Verra (www.terra.org) as an active contributor to reducing greenhouse gas emissions and advancing the Sustainable Development Goals (SDGs). Verra certification not only validates our dedication to environmental sustainability, but also highlights our efforts to make meaningful contributions to global climate action. Selling carbon credits on the voluntary carbon market is our long-term goal for helping to finance our stove project, leveraging our environmental efforts to secure funding for our initiatives. However, at this time, we continue to rely on the generosity and support of donors to drive our mission forward.



**Verified Carbon
Standard**
A **VERRA** STANDARD

Meet One of Our Amazing Beneficiaries

Lucía's Journey: A Testament to Resilience

Lucía, a mother of five, embodies the spirit of entrepreneurship and resilience in the heart of Santiago Atitlán. Despite facing the daily challenge of traditional cooking methods, she relied on an ONIL stove, donated years ago by another organization, with no program of follow-up or monitoring. TRL later adopted this stove and revived it with a new combustion chamber.

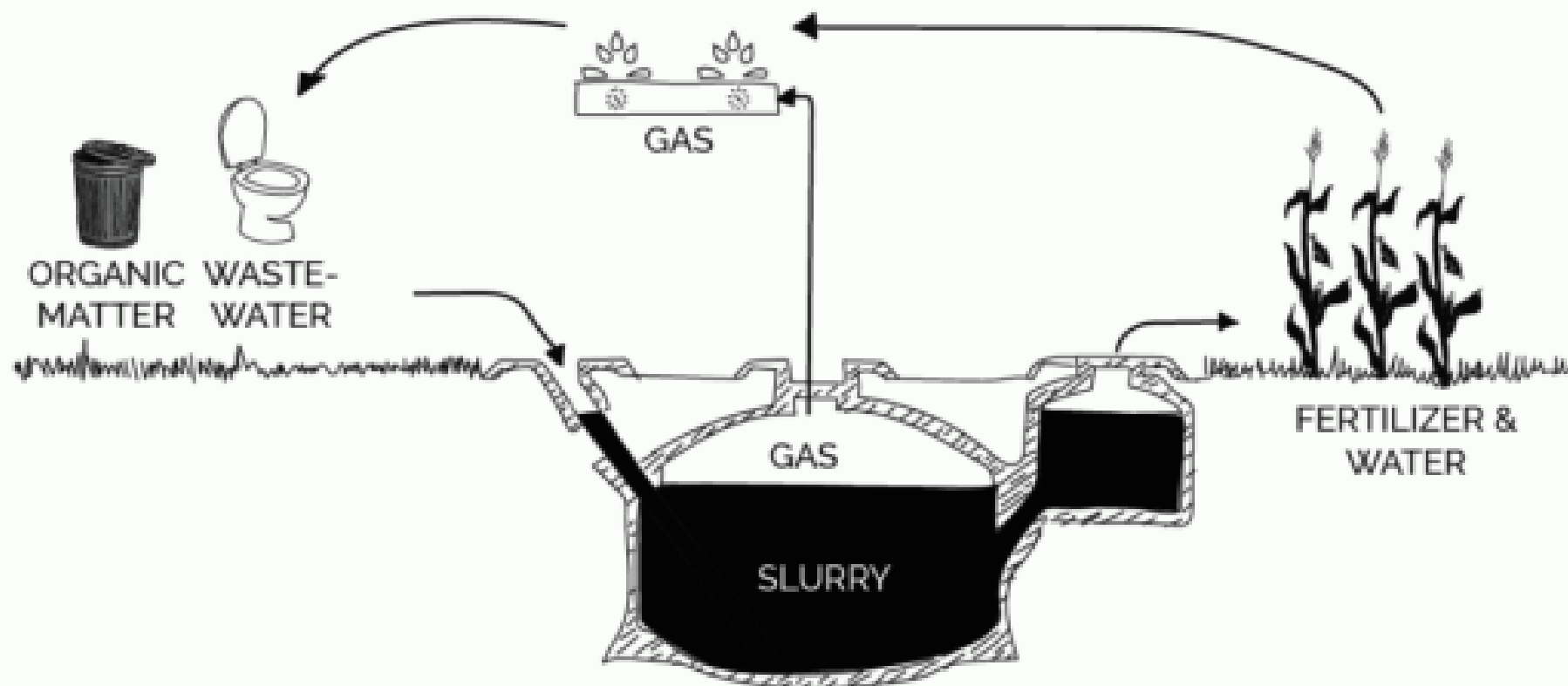
But Lucía's story doesn't end there. At the end of 2023, she made a bold decision: she acquired a new stove from TRL, not just as a practical upgrade but as a symbol of her commitment to sustainability and her belief in our mission.

Her journey exemplifies what makes TRL unique – it's not just about installing stoves; it's about empowering individuals like Lucía to create a brighter, more sustainable future. As she lights the flames of her new stove, she not only cooks for her family, but also ignites hope for generations to come.



The Biogas Reactor Project: Turning Waste into Resources

In addition to our Improved Cook Stove Program, TRL is pioneering sustainable sanitation solutions in the region through our Biogas Reactor Project. Harnessing the power of waste, this initiative aims to install low-flush toilets connected to biogas reactors, producing gas for cooking and valuable fertilizer for agriculture. Through this virtuous closed cycle, we seek to improve sanitation, reduce environmental contamination, and reduce poverty in Santiago Atitlán.



2023 Goals A Year of Ambitious Initiatives

In 2023, TRL set specific goals to create lasting change in the communities we serve. As usual, we set ambitious goals for the year, reflecting our enthusiasm and our commitment to innovation, sustainability, and community empowerment.

Here's a recap of the key objectives we hoped to accomplish:

- **Involve a Volunteer Grant Researcher and Writer:** We sought to expand our team by involving a dedicated volunteer to research and write grants, enhancing our capacity to secure funding for our programs and initiatives.
- **Sell Carbon Credits:** Recognizing the potential of carbon credits as a means to fund our sustainability efforts, we wanted to explore opportunities to sell carbon credits generated through our environmental projects.



- Perfect TRL's Strategy for Ensuring the Correct Use and Care of Stoves: Ensuring the proper use and maintenance of our ONIL cookstoves is crucial for maximizing their effectiveness. We focused on refining our strategy to educate and empower stove users, promoting sustainability and stove longevity.
- Resolve Need for Dispatcher and Programmer to Improve Data Collection: Efficient data collection is essential for monitoring and evaluating the effectiveness of our programs. To streamline this process, we identified the need for a dispatcher and programmer to enhance data collection systems and procedures.
- Install 200 New ONIL Stoves: Building on the success of our Cookstove Program, we aimed to install 200 new ONIL stoves in households across Santiago Atitlán. These energy-efficient stoves not only reduce wood consumption, but also improve indoor air quality and enhance the health and economic well-being of families.



2023 Highlights

Let's dive into the sparks of progress that lit up our year.

Stoves Installed

Despite the challenges posed by Guatemala's political and economic climate¹ and the several months' delay in receipt of 2023 funding², we are delighted to report that we successfully installed 157 of 200 stoves this year. The resilience of our team and the unwavering support from our community paved the way for us to reach our goal. Additionally, 70 stoves underwent restoration, enhancing their efficiency and extending their lifespan through combustion chamber upgrades.



¹In 2023, Guatemala faced a challenging political and economic climate that significantly slowed TRL's work. Following controversial presidential elections in August, judicial interventions and widespread protests erupted across the country, paralyzing normal life for over a month, hindering mobility and economic activities, especially for informal merchants. Despite this, Guatemalans showed unity and resilience, rallying for democracy. Many residents of Santiago told us that despite wanting to join the TRL program, these events meant they could not afford to purchase a stove.

²We officially begin our installations for the intended year several months into the year—year 2023 began during March 2023. Thus, 2023 installations continued into 2024.

Field Visits

Our commitment to connecting with the communities we serve goes beyond installing stoves. Through regular visits to beneficiaries, we offer ongoing support and strengthen our bond with the families we are fortunate to assist. The gratitude we receive is not just a gesture but a reflection of the warmth and richness of the communities we serve. During the economic slow downs, we were able to continue our field visits and perform stove maintenance. In 2023, the outreach team made **906 field visits**.



Market Showcase - Candelaria and Isabel

Right in the heart of Santiago Atitlán's local market, our dynamic duo, Candelaria and Isabel, showcased the magic of our stoves! They enabled locals to witness the efficiency and benefits firsthand by setting up an ONIL stove in the market and cooking on it.

Volunteer Programmer for Improved Data Collection

In February, TRL welcomed Michael Rosen, a dedicated software developer and President of the Rotary Club of Lake Atitlán, who joined as a volunteer programmer to enhance data collection systems.



New Team Member

In 2023, we officially welcomed María Teresa Puac as our Marketing and Communications Coordinator. Tere has brought a fresh perspective to our team and to our marketing efforts. Among other activities, Tere attended a networking event in Antigua, Guatemala, organized by El Directorio Guatemala, where she engaged with representatives from various Guatemalan NGOs. Tere was able to participate in a number of insightful conferences that emphasized the importance of goal-oriented planning, focusing efforts on achievable objectives, and effectively conveying organizational essence on social networks.



Rotary Friends Visit TRL

This year, we had the pleasure of hosting two Rotarian groups – from Mt. Clemmons and Ann Arbor, Michigan. Their visits gave them a firsthand view of the meaningful work we do at TRL, transforming lives and fostering sustainable solutions for the community and the environment. TRL is currently engaged with both clubs in the application for grants.



Visiting Honduras: Exploring New Horizons

On May 8 to 11, our TRL Team embarked on a journey from Santiago Atitlán to Copan, Honduras. The objective was to visit fixed-dome biogas-producing digesters. We wanted to gain insights from owners and learn about potential construction issues. This visit laid the groundwork for installations in Santiago Atitlán in the future.



Our Biggest Surprise: A Patience-Tested Triumph

In 2019, TRL initiated collaboration with the David LaMotte School, planning the construction of a pilot biogas digester. The road to school accreditation, which delayed our project's installation, was a test of patience, with each year's submissions facing rejection by the Ministry of Education. The breakthrough came in December 2023, following persistent efforts by the school to satisfy the Ministry's Requests and the presentation to them of a joint letter from supporting organizations. The school is now accredited, which means the biogas digester's installation is planned for November 2024!



Financial Overview

TRL strives to be both transparent and effective in the management of the Association's finances. For every dollar of revenue and support, we minimize overhead and administrative costs and maximize direct project costs. This way, we ensure that services to our beneficiaries constitute the majority of our expenses.



Financial Summary

Revenue

Community Stove Owner Donations	\$ 7,054.66
Individual Donations/ICS	\$ 45,553.98
Improved Cookstove Project Grants	\$ 35,527.8
Total	\$ 88,136.44

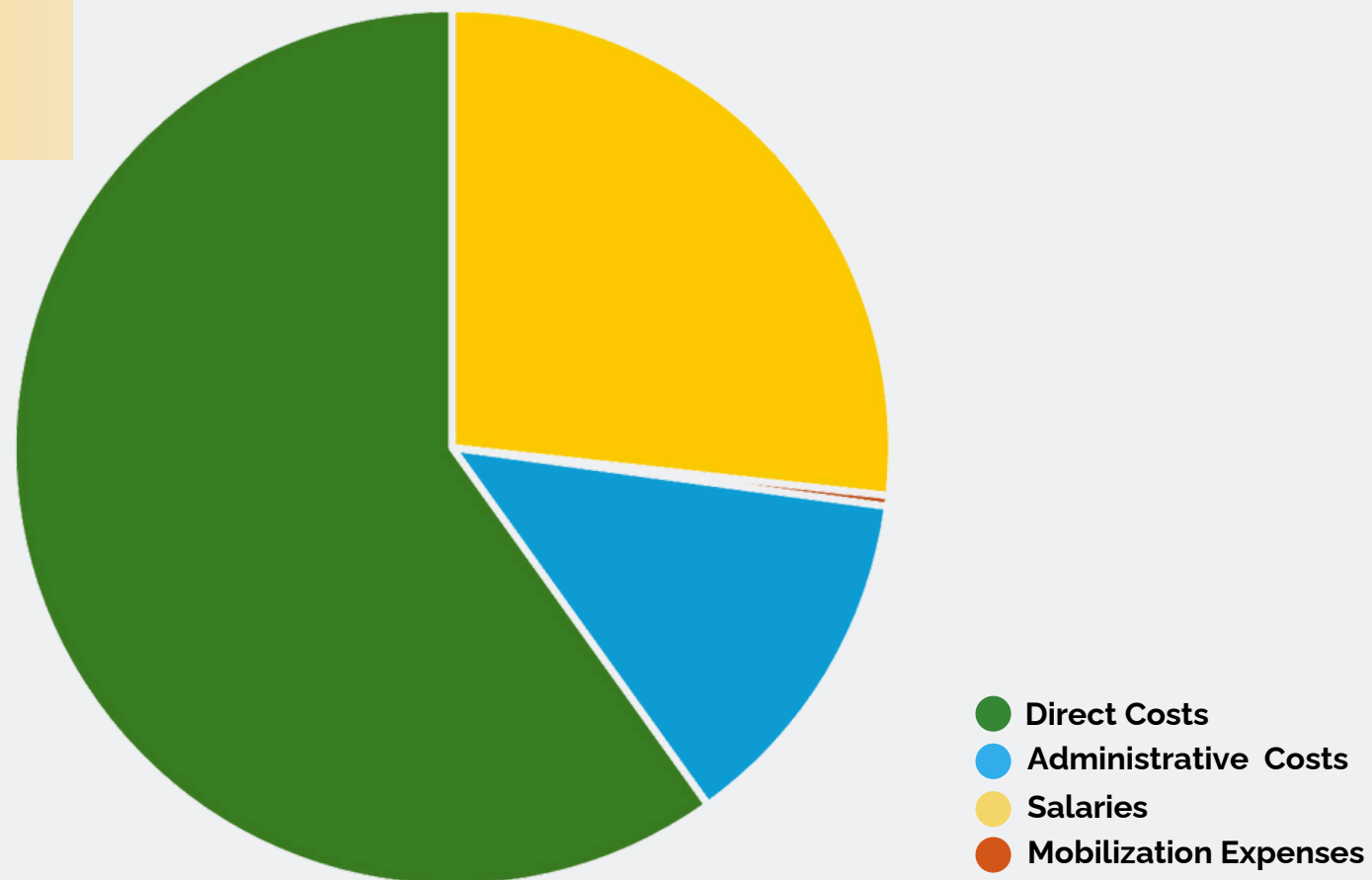
Expenses

Salaries	\$ 17,388.33
Mobilization Expenses	\$ 257.01
Administrative Costs	\$ 8,437.86
Direct Costs	\$ 3,8941.8
Total	\$67,308.52

Our Outreach Team spends nearly 100% of its time in the field, installing and maintaining stoves and educating beneficiaries. For this reason, we categorize personnel costs for the Outreach Team under the Direct Costs of the ICS Project.

Expenses by Budget Category

**Expenses FY 2023 improved
Cookstove Project**



2023 Challenges

While we celebrate our progress, it's important to acknowledge the challenges we faced along the way. Despite our best efforts, of our target of installing 200 new ONIL stoves, we succeeded in installing 157. Additionally, we didn't achieve our goal of selling carbon credits. However, these setbacks haven't dampened our enthusiasm. We remain steadfast in our mission, fueled by the unwavering support of our team and our donor community. Together, we'll continue to explore new avenues and overcome obstacles. This is reflected in our goals for 2024.

Goals for 2024

- Biogas Reactor: Build and implement the first biogas reactor in Santiago Atitlán to convert waste into clean energy and fertilizer.
- Install 200 New ONIL Stoves: Expand distribution of ONIL stoves to 200 households, reducing wood consumption and improving indoor air quality.
- Sell Carbon Credits: Explore avenues for selling carbon credits to finance sustainability projects while contributing to global climate action.
- Secure Grants for Program Enhancement: Obtain grants from relevant organizations to help expand our program's reach.
- Migrate Data Collection Systems: Improve data collection systems for better program evaluation and monitoring.

Our Last Reflections

As we conclude our annual report, we reflect on the journey of 2023 with a sense of pride and gratitude. Despite the challenges, TRL has remained steadfast in its mission to empower communities and foster sustainable solutions in the Lake Atitlán basin. While we celebrate achievements like the installation of 157 ONIL stoves and the accreditation of the David LaMotte School, we also acknowledge areas where we fell short, such as not meeting our stove installation target and not selling carbon credits as planned. Nevertheless, these setbacks only fuel our determination for 2024; we are filled with excitement and optimism for the opportunities ahead. With ambitious goals, including the construction of our first biogas reactor, installation of 160 new ONIL stoves, exploration of carbon credit sales, and securing grants for program enhancement, TRL is poised to make even greater strides towards our vision of a thriving, sustainable Lake Atitlán basin. We are immensely grateful for the unwavering support of our team, our partners, and our community. Together we are committed to pushing boundaries, innovating, and driving lasting transformation for the benefit of all.