

2020 ANNUAL REPORT

# Building the World We Want



green empowerment

VILLAGE SOLUTIONS FOR GLOBAL CHANGE



We envision an equitable and sustainable world where everyone has clean water, renewable energy and a healthy environment in which to grow and thrive.



### Dear Friends,

In a year marked by the global pandemic and a public reckoning over the inequality in our world, you chose to invest in re-imagining the world we all want to live in and to support projects that build toward that future. In an undoubtedly difficult year marked by enormous loss and profound transition, you chose to help others - to support local actors as they take charge of their own development, to both improve their immediate well-being and create a more equitable system of development.

Thank you.

Your engagement with Green Empowerment has enabled us to share resources with partner organizations around the world - not just because it's the right thing to do - but because it's the most effective and resilient way to operate.

In 2020 alone, five health clinics in Myanmar gained access to renewable electricity, communities across Latin America gained access to clean water, and engineers in Indonesia bolstered their technical

knowledge in order to tackle design challenges for rural energy solutions. I hope you find inspiration in these stories, and the many others shared in this report.

These stories show the difference made possible by your support. In a year of so much loss and hardship, new communities around the world gained access to clean water and renewable energy and were able to better respond to the pandemic as a result. But don't take my word for it; in the following pages you will hear directly from several of those community members who have been on the frontlines of spearheading change.

Thank you for being a part of a better future.

Sincerely,

Andrea Johnson, Executive Director

### How We Get There

**PARTNERSHIP** We partner with in-country organizations to implement renewable energy, clean water and complementary sanitation, environmental and economic development projects.

**ENGAGEMENT** We engage communities from start to finish to build ownership and ensure long-term project viability.

**CAPACITY BUILDING** We provide technical expertise, training, funding and additional resources to build local capacity.

**IMPACT EXPANSION** We amplify our impact through regional networks, technical trainings and ground up innovation.

### 2020: Your Impact in Numbers

**875** people gained access to clean water in their homes

**13,875** people served by health centers that gained access to renewable energy

**59** people trained as community technicians

**34** communities with projects in process

**1,534** community members participated in leadership and skills training

**50%** of community water and energy committee leadership roles were filled by women

## Service at the Last Mile

MYANMAR

In early 2020 Border Green Energy Team (BGET) and GE installed five high-quality, low-maintenance 300W solar electricity systems at medical clinics that serve more than 13,800 people along the Thailand-Myanmar border. The impact of the project was amplified by the acute need for rural healthcare in the context of the COVID-19 pandemic, with the systems being used to power equipment for vaccine and specimen storage, lights to provide after-hours care and equipment for timely communication with other healthcare facilities, including a COVID-19 Emergency Response Center that is being powered with renewable energy as part of a 2021 project.



Solar hardware delivery in Myanmar by boat then motorcycle

## Healthy Communities

PERU

Local residents in Las Tunas, Peru took control of their health and quality of life by installing a network of potable water systems and lobbying for training in hygiene and sanitation. The community leveraged support from Green Empowerment and Water for People Peru to gain additional backing from the municipal government. We helped the community establish a Board of Water and Sanitation Services (JASS in Spanish) and trained them on the administration and maintenance of the system. Together, our partners and JASS led community water and hygiene trainings with adults and children to eliminate the practice of open-air defecation, and led to the creation of hygiene corners in their homes. We mirrored the success of this project in the village of El Chorillo and will continue to work with Water for People in three additional communities in the region.



Elena Obando, 24-year-old mother of two and lead water system technician in Piedra, Ecuador

Photos from Ecuador courtesy of Gustavo Huera Cuases, ALTROPICO

## Economic Opportunity

COLOMBIA

As dry seasons become longer and the rainy seasons grow more unpredictable, agricultural livelihoods are increasingly threatened, even for communities already implementing sustainable practices. To combat these challenges, Green Empowerment partnered with EL COMUN to build rainwater reservoirs that allow families to store large quantities of water, even from high-intensity, short-duration rain events. These reservoirs complement our long-standing project in the region implementing biogas energy systems on family farms. With support from EL COMUN the communities were able to finish the majority of construction in 2020 and we completed the project in early 2021. This project demonstrates that solutions to confront climate change are within reach for local smallholders.

Now, not only do families have safe drinking water, they no longer need to haul buckets of water from the river as part of a long day of work. Women can focus their time on income-generating activities, their families, and themselves. Young girls are free to focus on their education. Many women also take on leadership roles such as president and treasurer of the water committee.

DOÑA NOA



— LEADER IN ACTION —

*“It is a blessing to open the tap and have water...The water in the streams was not clean, it ran through the pastures where there are animals grazing. But what could we do if it was the only option we had? The most beautiful thing about all this work is that families can now drink clean water and that it flows directly to our homes.”*

Doña Noa, mother of six and collaborator in the Las Tunas water project.

MARÍA ROXI DE LA CRUZ CIMARRÓN



— LEADER IN ACTION —

## Empowered Women and Girls

ECUADOR

Together with partner ALTROPICO, we work with communities along the Rio Cayapas to build water systems that bring clean, potable water right to people’s homes and schools. Despite challenges posed by COVID, construction continued throughout 2020 and water systems in the communities of Jeyambi, Chispero, and Telembi all came online mid-pandemic.

*“My whole life, when you needed water for the bathroom, for the kitchen, when you needed to bathe, for anything, you went down to the river...but women, and girls, really had the brunt of the task, because we use most of the water – cooking, cleaning, other tasks around the house. Now that we’ve got the water system, things have really changed – it’s a dream come true, and we made it happen with our own hard work.”*

María Roxi de la Cruz Cimarrón, resident and mother from the community of Jeyambi.

## Expanded Horizons

UGANDA

In 2020 we expanded our programs into Uganda. While Uganda has a strong network of NGOs actively working to provide critical services in education, healthcare, and agriculture, only 43% of Ugandans have access to electricity.\* Through The Power Partnership we created the DREAM (Decision Response Energy Assessment Management) Tool, an app for remote data collection that allows community service providers to understand their energy needs without having technical expertise. In 2020 we deployed the app with Medical Teams International and assessed energy needs at 56 Medical Teams clinics across Uganda which serve refugees, nationals, and internally displaced people. We are now helping Medical Teams to prioritize projects and deploy renewable energy solutions for their clinics.

\*IRENA 2020 Energy Progress Report



Midwife in action at Medical Teams International clinic in Uganda

## Smart Grid for Small Grids

MALAYSIAN BORNEO & THE PHILIPPINES

The Smart Grid for Small Grids initiative develops and promotes open-source technology for last mile communities. The goal of this project is to develop mini-grid management and optimization tools that are accessible to a network of local designers and technicians working with marginalized, indigenous communities. The project is a combined effort between Green Empowerment, TONIBUNG (Malaysia) and SIBAT (Philippines) and builds off our successful collaboration in creating an open source electronic load controller. Off-grid locations present many challenges to electricity providers, it is common for systems to experience a power deficit during peak consumer hours and a large power excess during off-peak hours. We are working with local stakeholders to develop technology appropriate for community-managed systems in the global south.



— LEADER IN ACTION —

*“Before [the microhydro], the kids would study using a kerosene lamp and they could barely stay awake. After 30 minutes you see black soot around the table and on the noses and the kids would be falling asleep. With proper lighting now, the children can study better at night.”*

Irene Kodoyo,  
Headwoman of Kumpang Buayan, a community in Malaysian Borneo that first built a microhydro system then upgraded it with an electronic load controller.

## Chlorine Management System (CMS)

NICARAGUA & BEYOND

While chlorination has long been used to disinfect water, injecting too much can be harmful. The common processes for monitoring chlorine levels are either labor-intensive or utilize advanced equipment that is expensive to purchase and maintain - not a solution for rural communities with limited resources. In 2020, Green Empowerment created a prototype CMS that has multiple innovative advantages over existing products. We also began collaborating with BlueTap (a University of Cambridge Startup) and Oregon State University, two institutions working on similar technology. As of Spring 2021 Green Empowerment has filed a provisional patent. With our collaborators, we are in the final stages of lab-testing and will begin field-testing in Nicaragua later this year.

## South-to-South Knowledge Exchange

INDONESIA

In partnership with The Alliance of Indigenous Peoples of the Archipelago (AMAN) we are delivering a series of virtual trainings to build technical capacity in micro-hydroelectric technology and feasibility studies. AMAN sought out Green Empowerment as a partner to build and strengthen their renewable energy program after our successful collaboration with TONIBUNG in Malaysia. So far we have developed training tools in the Indonesian language, provided virtual trainings, and supported feasibility studies for pilot projects in three Indonesian provinces.



— LEADER IN ACTION —

Banie, the founder of TONIBUNG, received one of his first trainings in microhydro power through a Green Empowerment course in Indonesia in 2001. 20 years later, TONIBUNG is collaborating on this training with AMAN and Banie is back in Indonesia (virtually) as one of the lead trainers of the program.



Partner BGET trains remote health care workers on solar technology (Myanmar)

## BUILDING LOCAL SKILLS

## Regional Expertise

LATIN AMERICA

Despite the many challenges brought on by the pandemic, this moment inspired the creation of one of our most robust and far-reaching training programs ever. In May and June 2020, we delivered a free, six-week training in comprehensive water system design and WaSH (water, sanitation and hygiene) to thirty-three participants representing over a dozen organizations in five countries. This virtual training covered all aspects of system design from collecting field data, to choosing appropriate technology, to planning the system configuration. It allowed us to establish a baseline of technical knowledge among our partners and foster the ongoing exchange of information related to clean water systems.



Training on water quality monitoring in Bolivia

## Tools in Local Hands

BOLIVIA

We work with Practical Action Bolivia (PA) and local municipalities to install potable water systems in remote communities throughout the Bolivian Amazon. However, given their geographic isolation, it is

difficult and costly to regularly test these water systems for contaminants. To address this challenge, we held a training on water quality monitoring using equipment donated from HACH. The water quality test kit provides a portable, fully-stocked solution to test for a variety of contaminants.

## Our Partners

### PROJECT IMPLEMENTATION PARTNERS

**Bolivia:** Soluciones Prácticas Bolivia  
**Colombia:** ACIN, EI COMUN  
**Ecuador:** ALTROPICO, ENGIM  
**Nicaragua:** ATDER-BL, CACACONICA, FEDICAMP  
**Peru:** Energía, Ambiente & Sostenibilidad, Water for People Peru  
**Malaysian Borneo:** PACOS Trust, TONIBUNG  
**Myanmar:** Border Green Energy Team  
**The Philippines:** SIBAT  
**Uganda:** Medical Teams International

### TRAINING PARTNERS

**Colombia:** UTA  
**Indonesia:** AMAN, IBEKA  
**Malaysian Borneo:** KOPEL  
**The Philippines:** Yamog  
**Sri Lanka:** Janathakshan

### NETWORK PARTICIPATION

Biodigester Network of Latin America and the Caribbean  
Colombian Biomass Energy Network  
Ecuadorian Biodigester Network  
Forever Sabah  
Global PDX  
Hydro Empowerment Network  
The Power Partnership

### STAFF

Alejandra Camacho: *Engagement Coordinator*  
Amanda Morse: *Administrative Manager*  
Andrea Johnson: *Executive Director*  
Caitlyn Peake: *Program Director*  
Daniel Schollaert: *Program Coordinator*  
Dan Frydman: *Project Engineer*  
Gabriel Sundoro Wynn: *Regional Advisor, Asia*  
Karen Wilson: *Finance and Admin Director*  
Katya Díaz Salcedo: *Peru Program Coordinator*  
Maria Espinoza: *Nicaragua Program Coordinator*  
Mica Miro: *Engagement Manager*  
Mohammad Pakravan: *Technical Program Manager*  
Sam Schlesinger: *Regional Program Manager, Latin America*

### BOARD

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Robert Haley  
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Daniel M. Kammen  
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Koto Kishida  
Lisa Hall  
Michel Maupoux  
Mike Stangl  
Narasimha Kumar  
Nordica MacCarty  
Richard Koehler  
Steve Meicke

### VOLUNTEERS

Austin Bosworth, *Intern*  
Brian Tietge, *Videographer*  
Drew Lundsten, *CMS Development Engineer*  
Emma Browne, *Videographer*  
Ernie Brooner, *IT Manager*  
Gabriella Narvaez, *Lead Creative Consultant*  
Giselle Patton, *Graphic Designer*  
Lee Hunt, *Administrative Volunteer*  
Millie Pettegrew, *Video Production Intern*  
Nathan Stormzand, *CMS Development Engineer*  
Ted Scherara, *Podcast Producer*  
Wes Parker, *Patent Attorney*

# Support the Work



## How to Give

Mail checks to “Green Empowerment” at:  
PO Box 8802, Portland, OR 97207

Visit our secure website or call us:  
[www.greenempowerment.org/donate](http://www.greenempowerment.org/donate)  
503-284-5774

### Join the Reuss Legacy Circle.

Add Green Empowerment to your estate plan, retirement plan or life insurance plan and connect with other supporters who have made this profound commitment to our organization. Circle members make a lasting impact and receive exclusive benefits, including an invitation to our annual project tour, an annual Executive Director call and more.

### Give through your workplace.

Connect to Green Empowerment through workplace giving, event sponsorship or employee matching.

Green Empowerment is a U.S. 501(c)(3) nonprofit organization founded in Portland, Oregon in 1997.

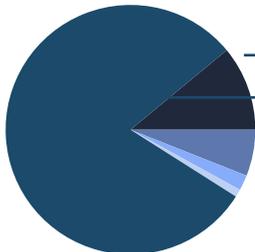
## INSPIRED TO INNOVATE

Holly Braun was first introduced to Green Empowerment in 2012 and donates monthly to support our work. She recalls being moved by the organization’s model, “I was heartened that projects are done in conjunction with the local people... solutions are jointly developed based on the specifics of the local community and land, and then training provided to continue the work after Green Empowerment has moved on. That is beautiful, humble and truly empowering.” Holly was inspired to co-develop Passport to Empowerment, one of Green Empowerment’s first “friend-raiser” events in 2013 and has been a supporter ever since. She believes strategic innovation and collaboration are essential to manifesting our shared aspirations.

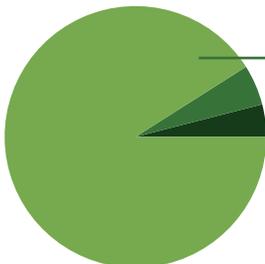


## Financials

In a year of hardship felt throughout the world we are incredibly grateful that you have continued to invest in this work. We end the year in a strong financial position in order to meet the opportunities of 2021 and beyond. Our audited financial statements are available on our website. Our audit was conducted by Richard Winkel, LLC.



11%	Contributions	\$195,483
80%	Grants	\$1,398,933
1%	Earned Income	\$15,274
2%	Investment and Interest	\$34,590
6%	In-Kind	\$104,090
<b>Total Revenue for 2020</b>		<b>\$1,748,370</b>



91%	Program Services	\$1,506,352
5%	Fundraising	\$74,589
4%	Management and General	\$66,356
<b>Total Expenses for 2020</b>		<b>\$1,647,297</b>
<b>Net Assets</b>		<b>\$1,157,768</b>