

burn
DESIGN LAB



Designing cleaner, more efficient cookstoves that improve health, strengthen livelihoods, and protect the environment.

Burn Design Lab

2025 Impact Report



Friends,

In a time of uncertain international development, Burn Design Lab remains grounded in our mission to improve the lives of families and protect the environments that communities depend on around the world. If anything, we have doubled down on our commitment to serve these communities and our partners. None of this would have been possible without your support, so thank you.

As I stepped into this role at the beginning of last year, I made it clear that I, alone, was not going to deliver lasting impact – it depends on all of us. The strength of our team, here and in West Africa, our partners and communities we work in, and our network of supporters will continue to drive our progress forward.

Despite the challenges and external pressures faced in 2025, it is reassuring to see that people still care about the well-being of others and our planet, even a half a world away. Together, we are helping the world breathe easier and building a healthier, more sustainable planet. I am grateful for everyone who has made this work possible.

Last year, BDL collaborated with women in kitchens across Sierra Leone, local manufacturing partners in East and West Africa, and both governmental and non-governmental organizations to ensure our cleaner burning cookstoves reach and serve the communities they are designed for. Without these partnerships, BDL's designs could sit unused in our lab, benefitting no one. Instead, our investment in these partnerships build local capacity, design stoves with our end users in mind, and support lasting impact and sustainability in low- and middle-income countries across the globe.

Because of your support, this commitment translated into meaningful impact in 2025, expanding access to cleaner burning cookstoves and supporting healthier homes and livelihoods across Africa. As we take a moment to celebrate what we've achieved together, I look forward to continuing this collaboration since there is more work to be done.

With gratitude,

A handwritten signature in black ink, appearing to read "Jeremiah Su".

Jeremiah Su

Executive Director, Burn Design Lab

About Burn Design Lab

Burn Design Lab (BDL) is a nonprofit organization working to ensure women and their families in the developing world can live better, healthier lives because they have access to cleaner burning cookstoves. We develop technologies that are not only efficient in the lab, but durable, affordable, and suited to the needs of the communities that use them.

Working from our product development lab on Vashon Island, WA, USA, and in partnership with manufacturers and community organizations around the world, Burn Design Lab develops and shares innovations that make cleaner cooking possible at scale.

Our work is designed to strengthen the four interconnected pillars of performance, adoption, durability, and scale. Our impact is the product of these four factors, therefore weakness in any one area limits overall results. BDL partners with manufacturers across all four pillars to ensure technologies perform well, are adopted by users, last over time, and can be produced at scale.

2025 by the Numbers

5 projects implemented with **4** manufacturing partners
in **5** different project locations

104 days spent in field with our project partners (staff
and volunteers)

361 tests conducted in BDL's lab - over **94** field tests
conducted with our partners

211 user research interviews with focus group discussion
participants and individual survey respondents

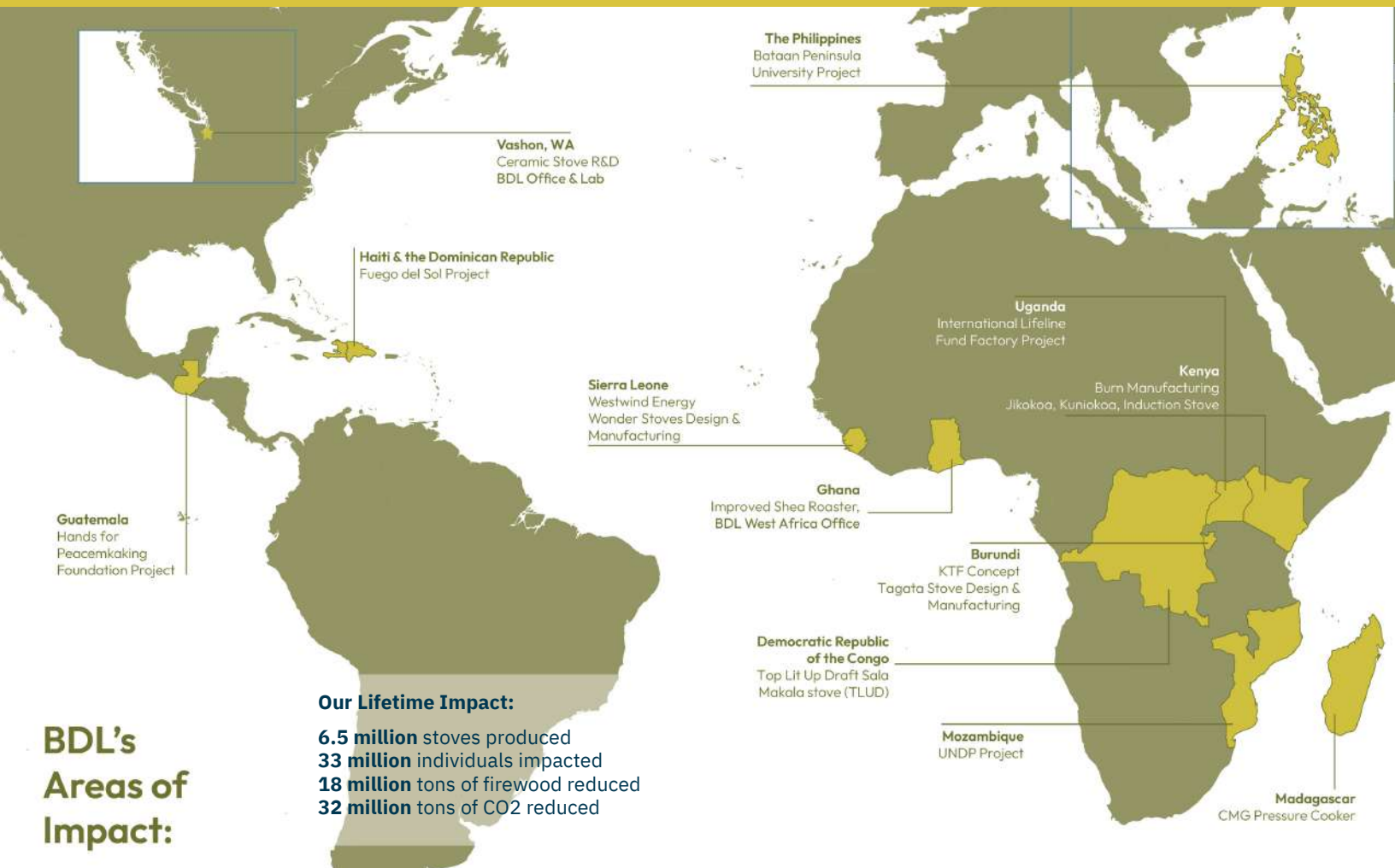
40+ prototypes made in-house, transferring over to
7 field prototypes made in-country with partners

20 stoves piloted for in-home placement testing

3 new stove models reaching production

9 volunteers contributing approximately **2,000** hours
of work







Designing Household Stoves for Real-World Use

Wonder Household Stove Program | Sierra Leone & Senegal

In 2025, BDL started the development of household cookstoves through field research and design collaboration with manufacturing partner Westwind Energy (WWE). After successful production of the next generation institutional stove, WWE requested BDL's support to develop their next generation wood-burning and charcoal-burning household stove designs. These models reflect the local cooking practices, fuel types, and economic realities of households thanks to WWE's 35 years in the Sierra Leone market and BDL's expertise in cleaner burning stove design and manufacturing processes.

In June, BDL staff worked closely with local partners to collect field research in both urban and rural communities. Through household surveys, interviews, and controlled cooking tests, the team gathered insights into how families cook and what they value most in a stove.

Real-world testing of prototypes in homes help ensure the final stove designs meet the everyday needs of households. By December, BDL and WWE delivered the first batch of 210 wood stove units to WWE's partner, The Rewilding Project.



2025 Results

- **3+** field prototype stoves developed and tested in Sierra Leone
- **141** household surveys and interviews conducted
- **12** controlled cooking tests performed with local cooks and meals
- **20** pilot stoves deployed for in-home placement testing
- **4** new custom tooling designs for improved production capacity
- Production reaching **210** stoves per month by December
- Over **1,000** individuals benefitting from BDL stoves in Karena District, Sierra Leone
- Prototype stoves developed for Senegalese pots

Photo Credit (left): The Rewilding Company

Transforming School Kitchens in Sierra Leone

Wonder Institutional Stove Program | Sierra Leone

Across Sierra Leone, many school kitchens still rely on traditional open fires to prepare meals for students. These fires consume large amounts of firewood, create hazardous smoke, and expose the cooks to unhealthy working conditions as they prepare daily school meals. In partnership with WWE, BDL developed the next generation institutional cookstove designed to significantly reduce fuel use while improving cooking efficiency and safety in school kitchens in 2024.

In 2025, BDL engineers worked closely with WWE to refine design for manufacturing, and strengthen production systems, and produce 256 stoves. Stoves were deployed in school kitchens across Sierra Leone as part of the national school feeding program with support from World Food Programme (WFP) and Association of Volunteers for International Service (AVSI).

2025 Results

- **256** institutional stoves installed in **128** school kitchens
- **44,800** students benefiting from improved cooking systems
- **512** volunteer cooks working in cleaner kitchens
- Approximately **6,200+** school lunches cooked using improved stoves
- Manufacturing capacity increased to **60+** stoves per month





Supporting Women's Livelihoods in Northern Ghana

Shea Roaster Program | Ghana

Burn Design Lab continued its collaboration with women's shea butter cooperatives in Northern Ghana, where traditional roasting methods require significant firewood and labor. BDL's improved shea roaster continues to help cooperatives process shea nuts more efficiently while reducing fuel consumption and improving working conditions for women processors.

In 2025, BDL distributed 19 more roasters with several cooperatives, to benefit over 1,000 women. These improved technologies help women's groups increase productivity while lowering the amount of firewood required during roasting, reducing both time and costs associated with processing shea butter.

BDL continued local field engagement to better understand cooperatives' needs and monitor the performance of the technology. Together, these efforts support women's livelihoods while helping improve the sustainability and efficiency of hand crafted shea butter production.



2025 Results

- **19** improved shea roasters distributed to cooperatives, to benefit over **1,000** women
- Improved roasters reduce firewood consumption by up to **90%**, cut particulate emissions by up to **70%**, and increase production efficiency by up to **50%**

Advancing Cookstove Materials and Performance

Ceramic Research | BDL Engineering Lab



Burn Design Lab continued laboratory research on ceramic stove components to improve durability, thermal performance, and manufacturing reliability. Ceramic liners and combustion components play an important role in improving stove efficiency while helping stoves withstand the high temperatures and repeated use required in everyday cooking.

In 2025, BDL conducted a series of laboratory tests evaluating different clay compositions, additives, and firing methods to improve material durability. The team conducted research on forming techniques to determine a more consistent and scalable production process for ceramic cookstoves.



2025 Results

- New clay compositions tested for durability and heat resistance
- Improved forming and firing techniques explored
- 1 new prototype developed in house

Exploring Clean Cooking Solutions in Burundi

Tagata Stove Collaboration | Burundi

In December 2025, BDL visited new partners in Burundi to evaluate the Tagata pellet-fueled top lit, up-draft (TLUD) cookstove developed by KTF Concept. The stove is designed to use locally produced biomass pellets while boasting a sustained 3hr burn time.

BDL engineers worked with partners to assess the stove's technical performance, manufacturing feasibility, and opportunities to strengthen local production systems.

This collaboration reflects BDL's broader approach of pairing engineering expertise with regional manufacturing partners to refine stove designs and identify pathways for future scaling.

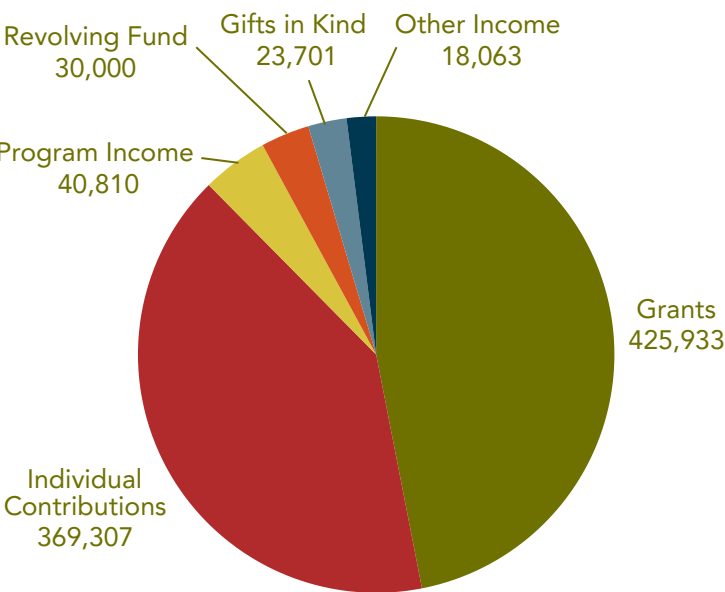
2025 Results

- Engineering review of the Tagata TLUD stove design
- Assessment of local manufacturing systems
- Identification of opportunities to simplify production
- Initial steps toward scaling manufacturing capacity

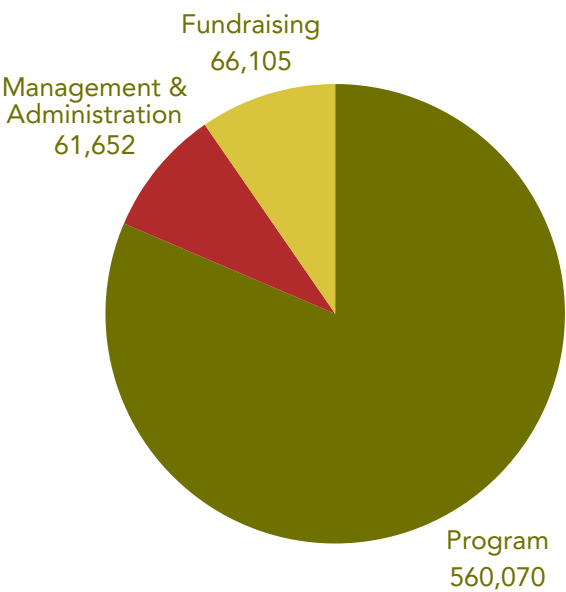


Financials

Income \$917,814



Expenses \$687,826



**BDL operates on cash-basis accounting and some 2025 grant periods extend into 2026. Contact us for more information regarding BDL’s target of maintaining a healthy operating reserve equivalent to at least 6-8 months of operating expenses.*

Institutional Partners:



The Sitchin Foundation

Wild Woods Foundation

Henry E. Niles Foundation

Haydon Kirkwood Charitable Trust

Partners

Burn Manufacturing
Global Shea Alliance
KTF Concept
SAYeTECH
Westwind Energy Ltd.

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2025 Impact dedicated in honor and loving memory of Leslie Black Cordes.