2017 ANNUAL REPORT

NEXLEAF ANALYTICS

LETTER FROM THE CEO

As engineers, we're always thinking about how to harness emerging technologies to solve big problems. We see our flagship technologies, ColdTrace and StoveTrace, as Internet of Things (IoT) solutions designed especially for the development sector, and both technologies are already demonstrating powerful impact.

In 2017, we surpassed 14,000 ColdTrace devices deployed across 10 countries, **protecting the vaccine supply for about 10% of all the babies born on Earth each year**. On the cookstove side, we have witnessed **sustained clean cookstove usage at 90.1%**, steadily proving that adoption is possible.

In this report, we feature stories and voices from the field. Our technologies are powerful tools, and they gather a lot of data. But it takes **dedicated and trained personnel** to understand the populations that we serve for the technology to reach its greatest impact.

Many members of Nexleaf's global team — from field coordinators to senior leadership to our program directors and even our data scientist — travel to our program sites. We test and iterate our technology in the field, we teach people how to service our devices and respond to data, and we collect feedback from our end users. **Engaging people to work with data in the field is a key part of how we work, how we create change, and why our technologies succeed, sustain, and scale.**

All around the world, anxiety about automation eliminating jobs is on the rise. But at Nexleaf, we have an encouraging perspective that I'm happy to be able to share with you.

Our technology deployments demonstrate how **sensor-enabled data-gathering can create and improve jobs**, and how **trained personnel are critical to the success of data-driven interventions**.

Having better tools in place to serve employees can help Ministries of Health drive up retention, combat high turnover, and help nurses prioritize more pressing concerns, such as patient care. What's more, **cultivating technology literacy among healthcare personnel** enables individual workers to "**level up**" their job skills.

In the clean cooking sector, data-driven insights from our StoveTrace technology led us to develop Sensor-enabled Climate Financing (SCF). The SCF model employs women Energy Entrepreneurs who recruit participants, install cookstoves, and make service visits. The Energy Entrepreneurs are incentivized — **and empowered with data** — to steer clean cooking programs towards success.

Learn more about how ColdTrace and StoveTrace help people work in our IoT for Development series reports at **nexleaf.org/impact**.

We're proud of our work in global immunization and clean household energy. But we're equally excited to expand our IoT for Development plans to new applications and sectors. Our Trek device, paired with a custom smartphone app, safeguards vaccines during transport. In the agriculture sector, real-time data from ColdTrace helps keep stored post-harvest produce from spoiling. We can't wait to share results from these and other exploratory projects with all of you soon.

At Nexleaf, our mission is to preserve human life and protect our planet by designing sensor technologies, generating data analytics, and advocating for data-driven solutions to global challenges. We're so grateful for your interest in and support for what we do.

Sincerely,

Nithya Ramanathan, Ph.D.
CEO & Co-founder

IMPACT METRICS

COLDTRACE

ColdTrace reduces vaccine freezing by **74%**

14,204 devices across **10 countries**

PROTECTING

12.5M babies born each year...

... which is **10%** of babies born each year on **Earth**

1,216 health workers trained to protect vaccines*

STOVETRACE

StoveTrace enabled the reduction of **586.9 metric tons of CO$_2$e***

WHICH EQUALS

1.4M fewer miles driven

Monitored **285,985*** hours of cooking...

... from **876 households***...

... showing **90.1%** sustained usage

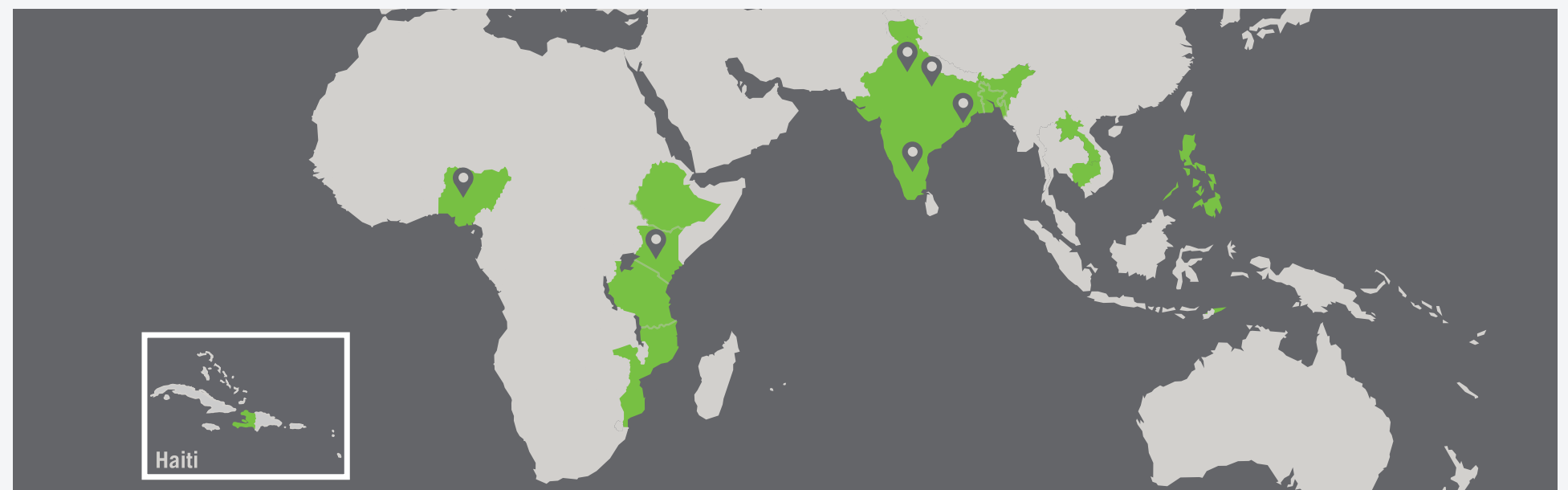Through SCF, women have earned **$6,954 USD** for clean cooking

WHERE WE WORK

📍 **25 team members** across the globe conducting work in **12 countries:**

- Bangladesh
- Cambodia
- Ethiopia
- Haiti
- India
- Kenya
- Laos
- Mozambique
- Nigeria
- Philippines
- Tanzania
- Timor-Leste

Haiti

*since program launch

VACCINES

www.nexleaf.org
info@nexleaf.org

ColdTrace protects vaccines at the last mile. Our data and analytics tools empower stakeholders at every level of the health system to take actionable steps to strengthen the cold chain through data-informed maintenance and repairs.

In 2017, we took great strides towards reaching our goal of protecting every child born on Earth. Our international team:
- introduced ColdTrace technologies to **Tanzania for national scale**
- reached over **13,000 ColdTrace 5 devices in India** as part of the eVIN program
- **integrated our data and analytics** into 4 Logistics Management and Information Systems (LMIS) used by national governments

"ColdTrace has greatly improved our way of work. We can monitor the performance of the refrigerators from anywhere. We can plan when to order spares and which facilities need to be visited."

— **STEPHEN MUSYOKI MWINI**, Biomedical Engineer from Isiolo County, Kenya

Just 2% of health facilities in low- and lower-middle income countries have functional cold chain equipment with optimal technology.*

Nexleaf's Project Coordinator Caroline Kania leads capacity building trainings in Tanzania.

A Ministry of Health technician in Mozambique repairs a fridge. ColdTrace provides the necessary information for health facility workers, technicians, and national Ministry of Health officials to make data-informed decisions around maintenance and repair. This enables them to plan better to protect their vaccine supply chains.

*****Source**: WHO/UNICEF (2016). Achieving immunization targets with the comprehensive effective vaccine management (EVM) framework. http://www.who.int/immunization/programmes_systems/supply_chain/EVM-JS_final.pdf

CLEAN COOKING

StoveTrace empowers rural women to fight climate change with clean cooking. Based on our innovative financing model, Sensor-enabled Climate Financing (SCF), women are rewarded for their climate stewardship via mobile money payments based on sensor-verified clean cookstove usage.

In 2017, we made strides in creating a sustainable ecosystem for clean cooking. Our highlights include:

- replicating our **StoveTrace program in Nigeria** through our partnership with RUWES, a network of 1 million women green energy entrepreneurs
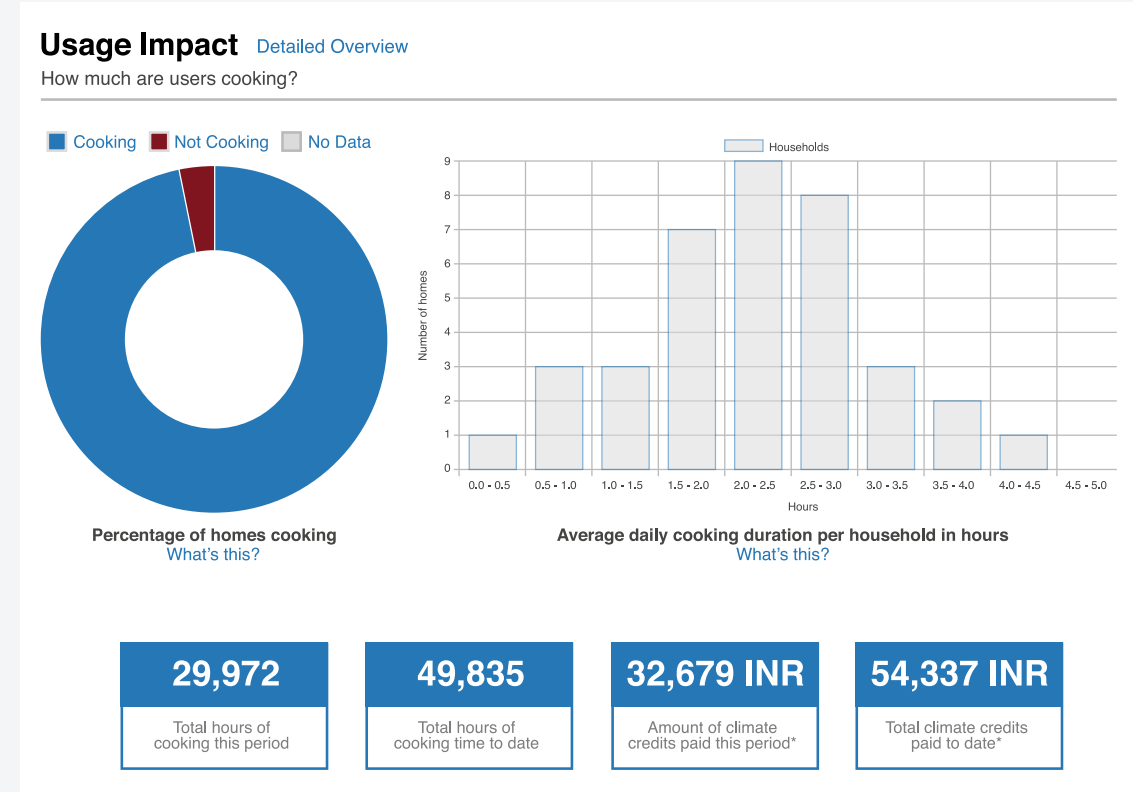- witnessing **cookstove usage at 90.1%**, previously unseen in the cookstove sector

"The mud stove we used earlier was difficult to use. It was consuming more wood and producing more smoke but this new one is very good in those aspects. We received 540 Rupees for cooking in this new stove. We used this money to buy medicine for my child when he was suffering from fever."

— **PRATIMA PRADHAN** from Notarpalli village, Odisha, India

About 3 billion people around the world cook or heat their homes with fires indoors producing high levels of household air pollution.*

Nexleaf's Field Coordinators Suvendu Giri and Naseem Mohd and a member of our local partner organization prepare solar panels for StoveTrace installations.

***Source**: WHO (2016). Household air pollution and health. WHO Fact Sheet No. 292. http://www.who.int/mediacentre/factsheets/fs292/en/index.html

Usage Impact Detailed Overview
How much are users cooking?

Cooking Not Cooking No Data

Households

Percentage of homes cooking
What's this?

Average daily cooking duration per household in hours
What's this?

29,972	49,835	32,679 INR	54,337 INR
Total hours of cooking this period	Total hours of cooking time to date	Amount of climate credits paid this period*	Total climate credits paid to date*

Pratima Pradhan and her community in Notarpalli have shown high levels of clean cookstove usage. Collectively, the women have earned 54,337 Indian Rupees (INR) as seen on the Stove-Trace dashboard (pictured above). For families living on less than 130 INR a day, this additional income provides them with greater opportunities for economic and social growth.

INNOVATION

At Nexleaf, we are driven by the idea that innovation can change the world.

In 2017, we commenced pilots for 3 new technologies:
- Developed a Bluetooth-enabled sensor, Trek, to **provide visibility into the vaccine cold chain during transport** in Mozambique
- Co-developed the COEL bangle, a wearable bracelet with a sensor inside that **alerts** pregnant women in rural India of **high levels of carbon monoxide** from indoor cooking
- Partnered with UC Davis to monitor produce stored in cold rooms with ColdTrace technologies to **protect post-harvest crops** in Bangladesh

"I previously purchased an improved cookstove but my husband didn't like the taste of the food cooked on it. Once I started using the bangle, it started ringing every time I cooked on the chulha [traditional stove]. I began using the improved cookstove more often. I'm thrilled to see less smoke and that it uses less wood. Even my husband agrees the stove is useful and appreciates the food from it."

— **KANKU DEVI** from Mahuwal village, Rajasthan, India

4.3 million people a year die prematurely from illness attributable to household air pollution.*

Vaccines Program Director Shahrzad Yavari traveled to Mozambique to oversee the deployment of Trek with the Ministry of Health.

Kanku Devi (pictured right) has become an advocate of cleaner cooking methods for her community after the COEL bangle helped her realize the impact of Household Air Pollution (HAP).
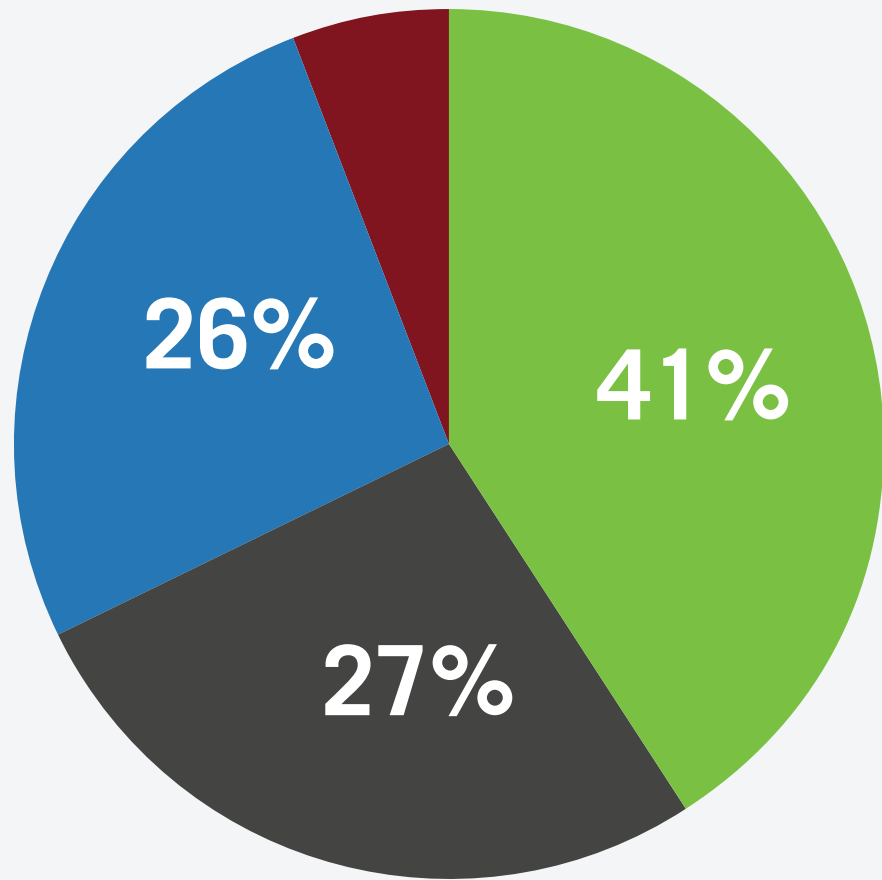
*****Source**: WHO (2016). Household air pollution and health. WHO Fact Sheet No. 292.
http://www.who.int/mediacentre/factsheets/fs292/en/index.html
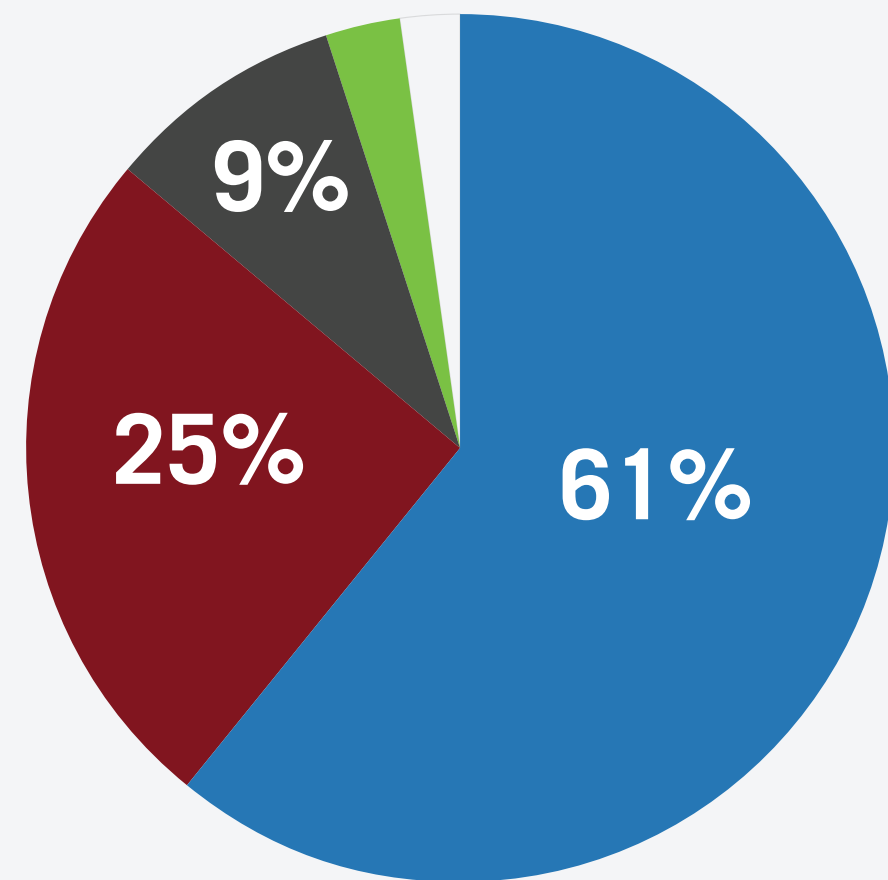
2016 AUDITED FINANCIALS

In 2017, we conducted an external audit of our 2016 financials. Foundation, individual, and corporate support increased thanks to the expansion of our programs and technologies in 4 new countries, the establishment of our Innovation program, and the growth of our Air Pollution reduction program (clean cooking). Our Air Pollution program activities increased since 2015 due to the implementation of our Sensor-enabled Climate Financing (SCF) model with other partners. We also made improvements and upgrades to our monitoring devices, designed the new Trek device, and made other associated technical upgrades.

REVENUE BY SOURCES

Foundation	$1,559,794	40.9%
Earned	$1,030,967	27.0%
Corporate	$1,003,100	26.3%
Individual	$221,270	5.8%
Total	$3,815,131	100%

EXPENSES BY PROGRAM

Vaccines	$1,480,579	60.8%
Air Pollution	$617,233	25.3%
Operations	$217,608	8.9%
Innovation	$69,337	2.8%
Fundraising	$51,584	2.1%
Total	$2,436,341	100%

NEXLEAF'S GOALS ARE GLOBAL GOALS

Our program work focuses on expanding clean energy access, improving public health, and enabling responsive interventions in support of 11 UN Sustainable Development Goals.

At Nexleaf, our mission is to preserve human life and protect our planet by designing sensor technologies, generating data analytics, and advocating for data-driven solutions to global challenges.

Nexleaf Analytics is a non-profit technology company with a unique bottom-up approach for bringing data-driven impact to public health and climate change interventions in low- and middle-income countries. Our diverse team of computer scientists, software engineers, mechanical engineers, data scientists, public health experts, environmental advocates, and field managers design and deploy technology to ensure sustainable impact. We work directly with end users and iterate on our technology in the field to ensure that our sensors are customized to meet the specific needs in each country.

Nexleaf Analytics is a 501(c)(3) non-profit tech company (Tax ID #90-0514027). We're headquartered at 1964 Westwood Blvd, Ste. 410, Los Angeles, CA 90025.