

**SUSTAINABLE ENERGY FOR ALL  
ADVISORY BOARD**

**UPDATE ON THE SE4ALL HIGH IMPACT OPPORTUNITY:  
UNIVERSAL ADOPTION OF CLEAN COOKING SOLUTIONS**

**(Note by the Global Alliance for Clean Cookstoves on behalf of the HIO Universal Adoption of Clean Cooking Solutions)**

**Meeting of the Advisory Board  
on 19 May 2015, New York**

*This note is an update of the HIO Universal Adoption of Clean Cooking Solutions. It outlines objectives and key activities and deliverables. It describes the Strategic Plan and the steps needed to achieve its objectives and to mobilize commitments.*

*This note is for information.*



## SE4ALL HIO UNIVERSAL ADOPTION OF CLEAN COOKING SOLUTIONS

### Context and objectives

The use of open fires and traditional cookstoves and fuels is one of the world's most pressing health and environmental problems. Globally, three billion people rely on solid fuels to cook, causing serious environmental and health impacts that disproportionately affect women and children. According to the World Health Organization, household air pollution from cooking kills 4.3 million people every year and sickens millions more. Yet, safe, affordable, and accessible clean cooking solutions exist that can dramatically reduce fuel consumption and exposure to harmful cookstove smoke, while providing economic opportunities in communities around the world.

The Global Alliance for Clean Cookstoves (Alliance) is at the forefront of efforts to promote the adoption of clean cooking solutions and spur universal adoption of clean cookstoves and fuels. Launched in September 2010, the Alliance has a 10-year goal to foster the adoption of clean cookstoves and fuels in 100 million households by 2020 toward universal adoption of clean cooking solutions by 2030. The Alliance, on behalf of the Universal Adoption of Clean Cooking Solutions HIO, is working to support Sustainable Energy for All's objectives by improving access to modern energy services for those who lack clean and efficient cookstoves and fuels. Toward this goal, the Alliance and its 1100 global partners are working to establish a thriving global market for clean cooking solutions by addressing the market barriers that impede the production, deployment, and use of clean cookstoves and fuels.

### Alliance Launches Phase 2 of Strategic Plan to Build the Sector

In 2011, the Alliance released a comprehensive sector strategy in its groundbreaking report [\*Igniting Change: A Strategy for Universal Adoption of Clean Cookstoves and Fuels\*](#). The subsequent Alliance three-phase strategic business plan provided a strategic roadmap for the creation of a dynamic market for clean cooking solutions. The Alliance made enormous progress in Phase I of the initiative and has worked with many SEFA partners under the HIO to surpass many of its original goals. To date, more than 20 million additional cleaner and more efficient cookstoves are in use and global awareness of the serious issues posed by household air pollution is growing rapidly.

While Phase 1 of the Alliance was dedicated to building global and in-country markets for clean cookstoves and fuels, Phase 2, launched at the November 2014 [Cookstoves Future Summit](#), will focus on driving investments, innovation, and operations to scale these markets and enable 60 million households to adopt cleaner cooking solutions by 2017 toward a 2020 goal of 100 million households.

### Building on Momentum from Phase 1 Achievements

The Alliance's Phase 2 goals will build from the solid foundation of achievements the Alliance accomplished in Phase 1, which include:

- Growth from 19 partners to 1,100 global partners, including 50 national governments, 12 UN agencies, global corporations, hundreds of small- and medium-sized enterprises, foundations, investors, researchers, women's groups, and scores of non-governmental organizations.

- Launch of a suite of Country Action Plans to build momentum among government leaders in Bangladesh, China, Ghana, Guatemala, India, Kenya, Nigeria and Uganda.
- \$50 million in grant funding for activities in the sector that have enabled a stronger market and another \$50 million in investment into the sector at large.
- Establishment of the Boost Accelerator, Spark Fund, Women’s Empowerment Fund, Pilot Innovation Fund, and Working Capital Fund to support the development of commercially viable enterprises and encourage innovations in clean cookstoves and fuels.
- Led the International Organization of Standardization (ISO) process to create the first-ever international guidelines for cookstove safety, efficiency and cleanliness.
- Support for 13 regional testing and knowledge centers (RTKCs) across Africa, Asia, and Latin America and coordinated training and staff development to provide high quality testing services.
- Raise global awareness of HAP issue through 100+ global, national, and local media outlets
- Support for research in child survival, climate change, fuels, gender impacts, and adoption.
- Commission 19 market assessments and 5 consumer segmentation studies.
- Creation of several high-impact resource guides and web portals including the Clean Cooking Catalog, Gender Online Knowledge Hub, Partner Country Toolkit, and Carbon Finance Platform.

### **Focus on Scale in Phase 2**

The HIO, led by the Alliance, will continue to leverage the reach and depth of the sector to achieve a thriving global market for clean cookstoves and fuels at scale. In addition, Phase 2 (2015-2017) marks a significant shift towards demand creation, while continuing work to strengthen supply and foster an enabling environment. The Alliance will also continue support for research on the needs and preferences of consumers, and use this information to launch consumer-facing awareness campaigns to increase awareness of household air pollution and drive demand for and adoption of cleaner cooking solutions.

The Alliance will also work to make cleaner solutions more affordable by brokering partnerships with financial institutions and facilitating guarantees and new consumer financing products and delivery models. And the Alliance will work with SE4All partners to increase accessibility of clean stoves and fuels by strengthening existing last-mile distribution channels and leveraging new ones through pilots, capacity-building for enterprises, and sharing of best practices. The Alliance will continue to work under the HIO to drive financing and direct enterprise capacity building, with support mechanisms ranging from early stage grant funding, through subsidized capital, to angel equity, and ultimately commercial capital.

Support for improved stove and fuel performance will also continue via the Alliance’s leadership in the ongoing ISO process to establish standards for the sector to ensure that technologies achieve the desired benefits for health, livelihoods, and environment. The Alliance will also ramp up efforts to roll out certification and labeling in our focus countries to ensure adherence to global standards and allow consumers to make informed choices. Finally, the Alliance will continue to serve as a convener and knowledge hub for the sector, and has recently launched a new website with expanded resources and information for HIO partners. Preparations are now underway for the 2015 Biennial Forum in Ghana, a country that has publically prioritized clean cookstoves and fuels in its SE4All strategic plan.

### **Steps to Meet HIO Objectives and Mobilize Commitments**

The Cookstoves Future Summit marked the first time that the international community of clean cooking supporters convened publically around a common goal – to mobilize resources for and awareness of the

clean cooking sector. More than 75 representatives from implementing and donor countries, UN agencies, investment institutions, corporations, research institutions, and NGOs made \$413 million in formal commitments to the sector to provide grant, financial, and in-kind resources for program implementation during Phase 2 of the Alliance's Strategic Roadmap (2015-2017). These commitments are expected to be deployed over the next three years to support enterprise capacity building, investment in market-based solutions, research, standards and testing, advocacy, consumer marketing, humanitarian outreach, and women's empowerment. Implementing countries were also well represented at the Summit, pledging more than \$250 million in commitments for in-country programs and policy implementation. While these commitments are impressive for the fledgling clean cooking sector long ignored by donors, the challenge remains to convert Summit pledges into cash flow for the sector to achieve impact.

Annex 1: Phase 1 report



**GLOBAL ALLIANCE FOR  
CLEAN COOKSTOVES**

**FUELING MARKETS**

**CATALYZING ACTION**

**CHANGING LIVES**

**PHASE 1 | 2010-2014**





## THE PROBLEM

Every day **3 billion** people cook food and heat their homes using solid fuels in traditional cookstoves or over open fires.



## THE IMPACT

**4.3 million** premature deaths annually are caused by exposure to smoke from open fires and traditional cookstoves.

Women and girls in particular face health, safety and economic risks.

FORESTS ARE DEPLETED AND THE ENVIRONMENT IS DEGRADED.

**21%** of global black carbon emissions are attributed to cookstove smoke.



## THE SOLUTION

Cleaner and more efficient cookstoves and fuels can reduce fuel consumption and exposure to household air pollution.

The Global Alliance for Clean Cookstoves has brought together more than

**1,000 PARTNERS**

from the public, private and nonprofit sectors to accelerate the market for clean cooking solutions.



## THE GOAL

The Alliance's 100 by '20 goal calls for **100 million** households to adopt cleaner and more efficient cookstoves and fuels by 2020.\*

Working together we can save lives, improve livelihoods, empower women and protect the environment.

\*and the good news is we are already ahead of schedule!

COVER PHOTO FAR LEFT: MINISTRY OF AGRICULTURE, P. R. CHINA

# A MESSAGE FROM RADHA MUTHIAH

EXECUTIVE DIRECTOR OF THE GLOBAL ALLIANCE FOR CLEAN COOKSTOVES



## Dear Friends,

Four years ago, when Hillary Rodham Clinton announced the launch of the Global Alliance for Clean Cookstoves, I remember thinking, "This is it. This is the issue and the approach that will galvanize women and girls around the world." She spoke movingly of the fact that, for 3 billion people who depend on open fires, the simple act of boiling a pot of water, making a meal or trying to heat a home carries a lethal health risk. The Alliance would bring together women's groups and entrepreneurs, governments and corporations, foundations and investors in a global effort to save lives, empower women and protect the environment by creating a thriving market for clean cookstoves and fuels. The goal was ambitious and the vision of a public-private partnership to create the change was pioneering.

Four years later, as the Executive Director of the Global Alliance for Clean Cookstoves, I can report that this optimism proved prescient. In just four years, the Alliance has mobilized a thousand partners who are working together to address this silent killer. It has championed policy decisions

that will enable and accelerate the clean cookstoves and fuels market. It is working with the International Organization for Standardization to create a set of standards that will help us deliver quality, effective, and independently tested products. It has driven \$50 million in grant funding and \$50 million in private investment into the sector. Most important of all, the Alliance is raising the awareness of millions of men and women who, in their very purchasing decisions, have the ability to solve the problem of household air pollution. With the desire, access, and means to own a wide variety of cleaner cooking technologies and fuels, our target audiences are becoming informed customers, not hapless victims.

I'm proud of the amazing progress the Alliance has made, and as Phase 1 of our Strategic Business Plan comes to a close, I am thrilled to report that today there are at least 20 million households using cleaner and more efficient cookstoves and fuels. This growth reflects the commitment of our partners, our organization's focus, our donors' generosity, our investors' faith and of course burgeoning consumer demand. As we move into Phase 2 of our strategic plan, we will build on that momentum. The Alliance's goal is to enable 60 million households to adopt clean cooking solutions by 2017. Toward this achievable goal, the sector will need \$500 million in grants and investment over the next three years and I am confident that we can meet this milestone!

Speed, flexibility and smart strategies are essential if we are to combat this global killer. We encourage you to deepen your commitment to the sector in 2015 and redouble your efforts to accelerate the market for cleaner cookstoves and fuels. Working together we will improve public health, empower women and girls, and protect our environment. It's an investment that promises lifesaving returns and it will pay dividends for decades to come.

THERE ARE AT LEAST 20 MILLION CLEANER AND MORE EFFICIENT COOKSTOVES IN OPERATION.



# REAL CHANGE, REAL GROWTH, REAL MARKETS

## Highlights of Alliance Achievements 2010-2014

In 2011, the Alliance released a comprehensive sector strategy in its groundbreaking report *Igniting Change: A Strategy for Universal Adoption of Clean Cookstoves and Fuels*. The subsequent Alliance strategic business plan, structured in three phases, provides a clear roadmap for the creation of a dynamic market for clean cooking solutions. As Phase 1 of the plan draws to a close, the Alliance has made tremendous progress and, thanks to the energy and commitment of its partners, it has surpassed many of its original goals. Here, in brief, are just a few of the Alliance's major achievements to date.

### ALLIANCE ACHIEVEMENT

#### RECRUITING PARTNERS AND EXPANDING THE SECTOR

The Alliance has grown from 19 to 1000 partners over the past four years and today it works with 46 national governments, 12 UN agencies, hundreds of NGOs and scores of foundations across six continents. Its multisector appeal and its now proven market-driven approach have also brought a wealth of new private sector players to the table. The

Alliance has welcomed global corporations, investors, financial institutions and hundreds of entrepreneurs and enterprises looking to build capacity, scale up production, and improve their products. Researchers across several disciplines, including climate, gender, public health, and public policy are incorporating cookstoves and fuels elements into their studies. The Alliance has also benefited from the growth of several dynamic national and regional alliances that are essential to its critical mission.

### ALLIANCE ACHIEVEMENT

#### PROMOTING CLEAN FUELS

To save lives and mitigate the environmental impacts of black carbon and deforestation, the Alliance cannot focus solely on stove distribution and manufacturing. It must factor the role of cleaner and more renewable fuels into the equation. Beyond looking at biomass, improving access to—and availability and affordability of—electricity, LPG, ethanol, methanol, biogas and solar is central to its work. In Phase 1, the

Alliance has commissioned research to identify barriers across the clean fuel supply chain, supported capacity building of clean fuel enterprises, increased the number of investors and resources to support scale and adoption in priority markets, and developed mechanisms to share best practices.

### ALLIANCE ACHIEVEMENT

#### MOBILIZING INVESTORS



At Alliance exhibitions, potential investors can view clean and efficient cookstoves and fuels and learn more about new technologies.

The Alliance and its global partners have driven \$50 million in grant funding for Secretariat activities and another \$50 million in investment for the sector at large. The Alliance has also partnered with Social Capital Markets (SOCAP) to give scholarships for clean cooking entrepreneurs to attend its annual conference. In addition, it works with SOCAP to offer networking and matchmaking opportunities for all attendees.

### ALLIANCE ACHIEVEMENT

#### FOCUSING ON WOMEN AND GENDER ISSUES

The Alliance recognizes that women will ultimately determine the use and adoption of clean cooking solutions. It is building evidence on the impact women can have on

adoption when they are engaged as entrepreneurs in the value chain. Working with its partners, the Alliance is testing the most effective gender-informed business models for scaling adoption. In addition, the Women's Empowerment Fund provides finance for partners to test ways to empower women and it funds innovative approaches to gender integration. The Alliance also provides targeted capacity building, training and other tools to help partners address gender issues and continue to integrate women in the clean cooking sector.

### ALLIANCE ACHIEVEMENT

#### TAKING ACTION AND SHARING KNOWLEDGE



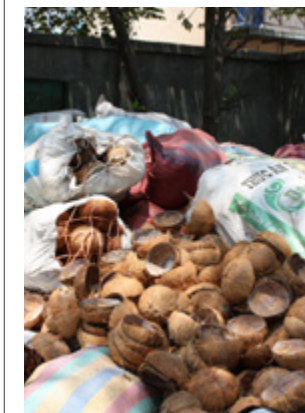
The 2014 China Cookstoves and Fuels International Conference in Beijing attracted 250 participants.

The Alliance is gathering tremendous momentum in its focus countries of Bangladesh, China, Ghana, Guatemala, India, Kenya, Nigeria and Uganda. Government leaders have built clean cooking solutions into their health, energy and environmental policies, and stakeholders have worked closely with the Alliance to develop and execute comprehensive Country Action Plans. The Alliance has helped enhance local distribution channels and strengthened the capacity of entrepreneurs to produce higher quality stoves and fuels in greater quantities. As each country works to address its unique

challenges and opportunities, the Alliance has also expanded and enriched its base of knowledge on the sector and has shared it with a wider audience. The Alliance's 6th Biennial Clean Cooking Forum in Phnom Penh, Cambodia in 2013 convened 500 participants from 60 countries and was the largest gathering to date of sector stakeholders.

### ALLIANCE ACHIEVEMENT

#### DRIVING INNOVATION AND BUILDING ENTERPRISE CAPACITY



In Cambodia, one innovative company makes briquettes out of recycled charcoal and coconut husks.

The Alliance established the Spark Fund, Women's Empowerment Fund, and the Pilot Innovation Fund in order to support the development of commercially viable enterprises and encourage innovations in design, manufacturing and distribution of clean cookstoves and fuels. Using these grants and other forms of soft and patient capital, the Alliance is preparing a pipeline of opportunities for investment and is mobilizing much larger investor interest in the sector. The Alliance also continues to create revenue streams for clean cooking enterprises by enhancing the demand for and access to carbon credits through its Carbon Finance Platform for clean cooking.

### ALLIANCE ACHIEVEMENT

#### DEVELOPING GLOBAL STANDARDS AND TESTING



The Alliance held a training workshop for 40 staff members from 16 countries at the U.S. Environmental Protection Agency's Cookstoves Testing Facility.

The Alliance, in collaboration with national standards committees and relevant organizations from 23 countries, has supported International Organization of Standardization Technical Committee 285 (ISO TC285), the first standards for cleaner and more efficient cookstoves and clean cooking solutions. The Alliance is also increasing local capacity in design innovation and testing by supporting 13 Regional Testing and Knowledge Centers (RTKCs) across Africa, Asia, and Latin America, and coordinating knowledge training and staff development within a broader network of RTKCs.

### ALLIANCE ACHIEVEMENT

#### BUILDING THE EVIDENCE BASE BY GALVANIZING AND COORDINATING THE RESEARCH COMMUNITY



Researchers in Gujarat, India evaluate the moisture in wood in order to monitor fuel use.

To date the Alliance has invested almost \$5 million in competitive research grants to support a total of 39

studies across 23 countries. It has formed a Research Advisory Committee of leading experts across different disciplines and helped build the evidence base for clean cookstoves and fuels by supporting studies on child survival, climate change, fuels, gender impacts, and market research. In addition, the Alliance has worked to share that knowledge with a broader network of advocates and stakeholders by hosting webinars and creating partner country toolkits that outline best practices and strategies. The global Research Platform also works to convene researchers, commission research, and communicate results.

### ALLIANCE ACHIEVEMENT

#### RAISING AWARENESS OF THIS SILENT KILLER AND ADVOCATING FOR CHANGE



Ghanaian football legend Stephen Appiah and musician Rocky Dawuni are influential Alliance champions.

The Alliance has been featured in more than 100 global, national and local media outlets and has mobilized hundreds of experts, authorities, and influencers to help address this issue. The Alliance's ambassadors, champions, and Leadership and Advisory Council members are a diverse group of world leaders, celebrities, executives, and experts who are actively involved in advocacy and strategic guidance, fundraising, and media campaigns for the Alliance.



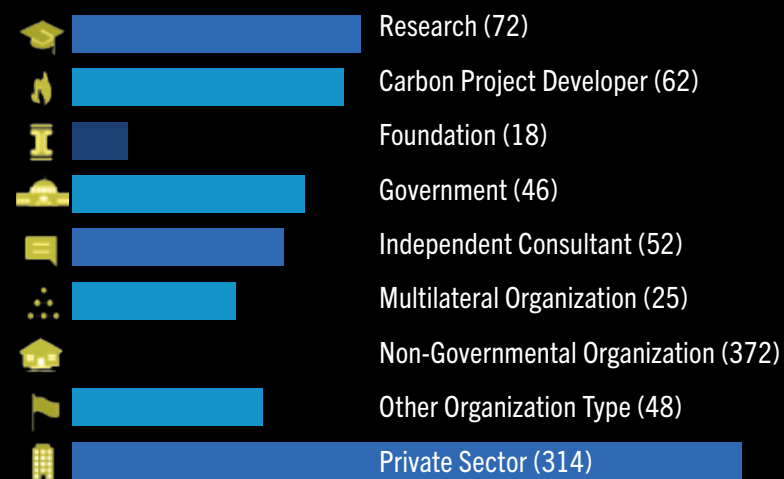
# 1,000 PARTNERS STRONG

Launched with just 19 members in 2010, the Global Alliance for Clean Cookstoves now includes more than 1,000 active partners. Together they represent a network that can provide all the resources necessary to create a thriving global market for clean cookstoves and fuels. To date, the broad reach and depth of the Alliance has helped spur the adoption of more than 20 million cleaner and more efficient cookstoves and fuels, which represents huge progress in the goal to deploy clean cooking solutions in 100 million households by 2020. The Alliance is proud of the incredible progress made by its global suite of partners and is thrilled to celebrate their incredible success.



The Department for International Development (DFID), the Alliance Secretariat's largest bilateral donor, won "Best Initiative by a Government Body" at the 2014 Climate Week Awards. DFID was recognized for its efforts to support innovation, market development, and research in the clean cooking sector. DFID funding has been instrumental in the Alliance's research, gender, and humanitarian programming.

## PARTNERS BY CATEGORY



### The Swiss Tropical Institute of Public Health

and Cayetano University in Peru are working with the Alliance to identify the key attributes that influence the acceptance and adoption of cleaner, more efficient and safer cooking products in rural Andean populations of Peru. The study will examine cooking-related practices and preferences, showcase risk perceptions, and highlight how household decisions are made. The study will also map existing improved cookstove (ICS) interventions along with national and regional policies associated with ICS promotion.



Envirofit International, a cookstove manufacturer, and EVAK, a community development and training institution, are working in partnership with Johns Hopkins Bloomberg School of Public Health as it conducts gender research in Kenya. The research will examine the impact that women entrepreneurs can have on the adoption and sustained use of clean cooking solutions.

### Eco-Fuel Africa

CEO Sanga Moses was named one of *National Geographic's* 2014 Emerging Explorers. The Explorers were recognized for making discoveries, making a difference, and inspiring people to care about the planet.

## The World Health Organization

and the Alliance are working together to develop and accelerate the release of new indoor air quality guidelines for household air pollution. The guidelines, which cover cooking, heating, and lighting, will allow government officials and others involved in policy development to better understand the relationship between levels of exposure to household air pollution and their devastating health outcomes. The guidelines can be used by governments and ministries both to promote clean cookstoves and fuels programs and as a scientific basis for legally enforceable standards.

### Project Gaia,

a U.S.-based NGO working to create a thriving market for alcohol-based fuels and stoves, has scaled up its operations in Ethiopian refugee camps, installed the first microdistillery for ethanol cooking fuel in Addis Ababa, collaborated on maternal health research in Nigeria and conducted mini-pilot studies in Asia and Central America. They are currently working on launching a new innovative stove model with Dometic and commercializing programs in Ethiopia, Nigeria, and Haiti. The Alliance continues to champion its partners in the liquid fuels space and to recognize their growth and innovation.



ClimateCare, a leader in both the climate and development sectors, has unlocked private sector finance to distribute clean cookstoves to more than 750,000 families throughout the developing world.

## THE UNITED STATES GOVERNMENT

is one of the largest bilateral contributors to the sector. Eleven of its government agencies, more than any other country, are lending their expertise on research, testing, and market development to ensure the Alliance meets its goals.



Calvert Foundation is launching the next round of their Women Investing in Women fund, WIN-WIN 2.0, with the Alliance. The focus of the \$20 million fund will be to empower women by scaling access to clean energy products, including clean cookstoves and fuels.

### Professor Tami Bond,

one of the world's leading experts in the study of the environmental and health impacts of black carbon emissions from traditional cookstoves and open fires, has won a 2014 MacArthur Fellowship, commonly known as a "genius grant." Bond, a professor of civil and environmental engineering at the University of Illinois at Urbana-Champaign, studies particles released into the air from burning many types of fuels including biomass. One of the practical low-cost interventions she recommends is training researchers in developing countries to measure and evaluate cookstoves and fuel emissions.



Shell was a finalist for the Ethical Corporation's Responsible Business Award in the category Best Business/NGO Partnership. To date, Shell has pledged \$12 million in funding and in-kind support to the Alliance and is providing staff support to attract investors to the sector and improve access to carbon finance for clean cooking enterprises. With financial and technical support from Shell and others, the Alliance has launched the Spark Fund, developed global standards for clean cookstoves, provided equipment and capacity building for regional testing centers, and funded market assessments in Alliance focus countries. Shell's support builds on the work of the Shell Foundation, an independent charity that has been a pioneer of the clean cookstoves sector for over ten years, and whose work was instrumental in creating the Alliance in 2010.



The Alliance and Deutsche Bank hosted an Investor Roundtable in New York. Representatives from major banks, financial institutions, and impact investment funds discussed the capital needs of the sector, as well as methods for scaling and structuring investment in clean cooking solutions.





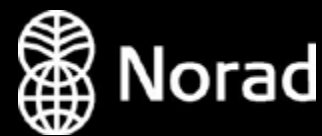
SNV Netherlands Development Organisation, a founding partner of the Alliance, has implemented biogas projects in 20 countries, and clean cookstove and fuel projects in 16 countries across Asia, Africa, and Latin America. It is also leading research studies in concert with the Alliance, to better understand and document innovative distribution models for clean cooking solutions.

**1.5 million improved cookstoves were sold by distributors and manufacturers that receive support through Alliance Partner Deutsche Gesellschaft Für Internationale Zusammenarbeit (GIZ) GMBH in 2013.**



Philips recently announced the establishment of an Africa Innovation Hub in Nairobi, Kenya. The Hub will conduct studies that facilitate innovation and ways of bringing new products such as the Philips smokeless cookstove to market.

**The Xunda Science & Technology Group Co. Ltd**, a leading Chinese manufacturer and exporter of gas and biomass stoves, attributes the popularity of its products to the company's investment in technology and innovation. The company reports that it owns more than 200 patents and in 2013, it sold 80,000 improved stoves in China, Guatemala, India, Fiji, Yemen, Bangladesh and several other countries.



Support from Norway, a founding partner of the Alliance, has been instrumental in the formation of country level alliances and the development of country action plans in focus countries. Leveraging their longstanding support for global efforts to improve energy access, Norway has been a leader in driving innovation in programs and policies to reach and include the base of the pyramid.

**Greenway Appliances**, a Pilot Innovation Fund and Spark Fund grantee, has created an innovative partnership with ESAF Retail and ESAF Micro Finance and Investments to distribute clean biomass stoves. ESAF has access to 434,000 members through its 150 branches and its loan officers have agreed to demonstrate Greenway stoves and take customers' orders. The results have been promising. In three months, Greenway sold a record 50,000 stoves to members of local women's financial self-help groups.



The Alliance granted Nokooda Solution Systems the Innovation in Clean Cooking Award at the Sankalp Un-convention Summit in 2014. Nokooda processes biomass waste from public parks and turns it into pellet fuels, which are sold in Delhi, India. In addition to diverting tons of waste from landfills in India, the company creates 'enviropreneurs' who earn an income from waste processing or from selling the pellets. Nokooda will use the \$15,000 prize to help develop an innovative cookstove with continuous refueling capabilities.

**Solar Cookers International** held a three-day conference in Sacramento, CA in July 2014. The conference brought together project directors, promoters, designers and researchers from 16 countries to discuss recent advancements in solar cooking, obstacles to adoption, solar cooker testing standards, and a number of other critical topics.

## THE CHARCOAL PROJECT

is a nonprofit that promotes biomass fuel alternatives and clean combustion technologies. It is collaborating with the Massachusetts Institute of Technology's D-Lab on The Harvest Fuel Initiative. The Initiative's technical team is currently performing comprehensive evaluations of green briquettes, wood-derived charcoal, and firewood at Lawrence Berkeley National Lab to help enterprises understand how fuel quality influences customer satisfaction.



The Alliance's health research-portfolio is enriched by productive partnerships with the National Institutes of Health and with the US Centers for Disease Control and Prevention. Their input and guidance have enabled the Alliance to leverage resources, share expertise, and maintain the highest standards of policy-relevant investigation as we work to demonstrate the many benefits of clean cooking solutions.



GERES, a French NGO that applies engineering solutions and technical expertise to environmental challenges, is working with the Alliance to accelerate and expand its successful StovePlus program in Asia and Africa. In Cambodia, where more than 3 million stoves have been disseminated to date, GERES' focus is on strengthening the association of producers and distributors of improved cookstoves, as well as launching a new model of rocket stove designed for the local market.

## THE UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES

is working closely with the Alliance to ensure that millions of displaced people will have regular and reliable access to fuel and energy without threat to their lives or personal safety. With an initial focus on energy needs for cooking and lighting in refugee camps, SAFE (Safe Access to Fuel and Energy) is a cross-sectoral issue that must be addressed in order to reduce the many risks associated with the collection and use of firewood for cooking.

**2013 Pilot Innovation Fund winner UpEnergy, a company that helps market and distribute efficient stoves in Uganda, was recognized by Fast Company magazine as one of the Top 10 Most Innovative Companies in Africa!**



Jita Bangladesh, a joint venture of CARE Enterprise Inc. and Danone Communities, is dedicated to empowering women and underserved communities by improving their access to products that promote good health. CEO Rashid Shaikh Saif AI, who was recently named one of the Schwab Foundation's Social Entrepreneurs of the Year, reports that Jita is currently reaching 2 million consumers with its unique "last mile" sales and distribution model and hopes to increase that reach to 7 million consumers in the near future. Jita saleswomen are known as Aparajita, or women "who never accept defeat."

## The Alliance is proud to partner with the following initiatives

- Global Bioenergy Partnership
- Every Woman Every Child
- Climate and Clean Air Coalition
- Roundtable on Sustainable Biomaterials
- Sustainable Energy for All
- Cooking for Life
- Energy for All
- Safe Access to Fuel and Energy
- Global LPG Partnership

# GETTING TO KNOW OUR 3 BILLION CONSUMERS

Through a combination of 19 market assessments, three major customer segmentation studies, over 100 site visits, and extensive data analysis, we understand more about the clean cookstove and fuels customer than ever before.

**E**very smart business enterprise knows that consumer needs and desires

drive purchasing decisions, and the customer is at the heart of the Alliance's work. Its consumer-centric sensibility is the starting point from which everything else follows. It is not enough that the Alliance helps stimulate the supply of clean cooking solutions. To forge a thriving global market, the Alliance and its enterprise partners must work together to produce cookstoves and fuels that offer real benefits, are used consistently, and are affordable and available to the 500 million households worldwide that still use solid fuels for cooking.

Research is critical to the success of this mission and in the last three years the Alliance has conducted market assessments in 19 countries. Information gleaned from this data, combined with research from Alliance partners, is



Electric induction stoves, which can boil water faster than electric radiant or gas stoves, are making inroads in India.



In Bangladesh, women in rural areas can spend up to a third of their day in the kitchen.

readily available on the website [cleancookstoves.org](http://cleancookstoves.org). The assessments provide partners with essential insights into preferences, price points, and usage patterns and also offer a snapshot of a customer's access to new technologies and financing. The customer segmentation research provides even richer detail. It supports researchers who make home visits and watch women

prepare their daily meals, noting the types of pots and ingredients used. In Bangladesh, for example, women will often make one huge pot of rice which will be used for every meal. It is no surprise then that a recent WASHplus study found that consumers want stoves that are powerful enough to boil water quickly and big enough to hold large pots. In West Africa, where women

pound cassava, yams or plantains into dough, cookstoves have to be durable and stable. In Guatemala, baking tortillas requires a larger Plancha-style cookstove. This stove is more expensive than other technologies, thus consumer-financing options are essential to the success of this market.

In regions where consumer awareness of the risks of household air pollution is

**FAST FACT** One cookstove marketed in Nigeria was renamed the Fast Fire because consumers like products that cook food quickly.

low, marketers cannot just tout health benefits to drive sales. The promise of savings, however, is a huge draw and the cost of charcoal or firewood in a given location will influence purchase intent. If the price of biomass fuels is high, there's a compelling financial motive to choose a more efficient technology or fuel. Some consumers see clean cookstoves and fuels as a status symbol. In Bangladesh researchers found that many women are interested in adopting new products because it increases their social standing.

The Alliance partners include several prestigious research institutes and their studies have revealed some common precepts that cross cultural and geographic boundaries. We know that a cookstove's size, ease of use, durability, and portability are critical attributes. Stoves which are too small to cook traditional dishes, or do not offer the same or improved functionality over traditional stoves and three-stone fires, stand little chance of being adopted. If it takes longer to cook on an improved or efficient stove, a user will quickly return to their familiar cooking practices or use an improved cookstove along with a traditional



Stoves must be stable, durable and designed to accommodate big pots.

cookstove, a concept known as stove stacking. Indeed in Kenya almost 70 percent of the population report that they sometimes use an alternative fuel for cooking. In rural households the most common combination is wood and charcoal; in urban areas, it is kerosene and LPG. Overall LPG is considered the most convenient and prestigious fuel, but due to the fact that it is not always available, LPG stoves are used sparingly. This clearly demonstrates the impact that supply chains have on cooking practices and it is one of a myriad of factors that influence consumer behavior.

**FAST FACT** Stove ownership in China varies greatly by region. Households in colder areas own up to 6 stoves.

## Meet The Chef Corps

One of the ways the Alliance is raising awareness of the risks of indoor air pollution is through its Chef Corps. Meet four chefs who are using their fame to promote clean cooking solutions.

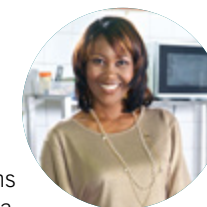
### JOSÉ ANDRÉS

Spanish-American chef José Andrés is an internationally-recognized culinary innovator, passionate advocate for economic and social empowerment and founder of World Central Kitchen, a nonprofit which seeks to find sustainable solutions to food insecurity and malnutrition.



### SUSAN KAMAU

Kenya's most celebrated chef, Susan Kamau, is the founder of *Kenyan Kitchen*, a magazine, website and TV show. Her passion for home-cooked food and ability to connect with citizens from every demographic make Susan a powerful spokeswoman for the Alliance.



### SANJEEV KAPOOR

Indian restaurateur Sanjeev Kapoor runs a successful TV Channel, has won many culinary awards, and is the author of several bestselling cookbooks. He believes that the act of cooking can help empower women.



### LUU MENG

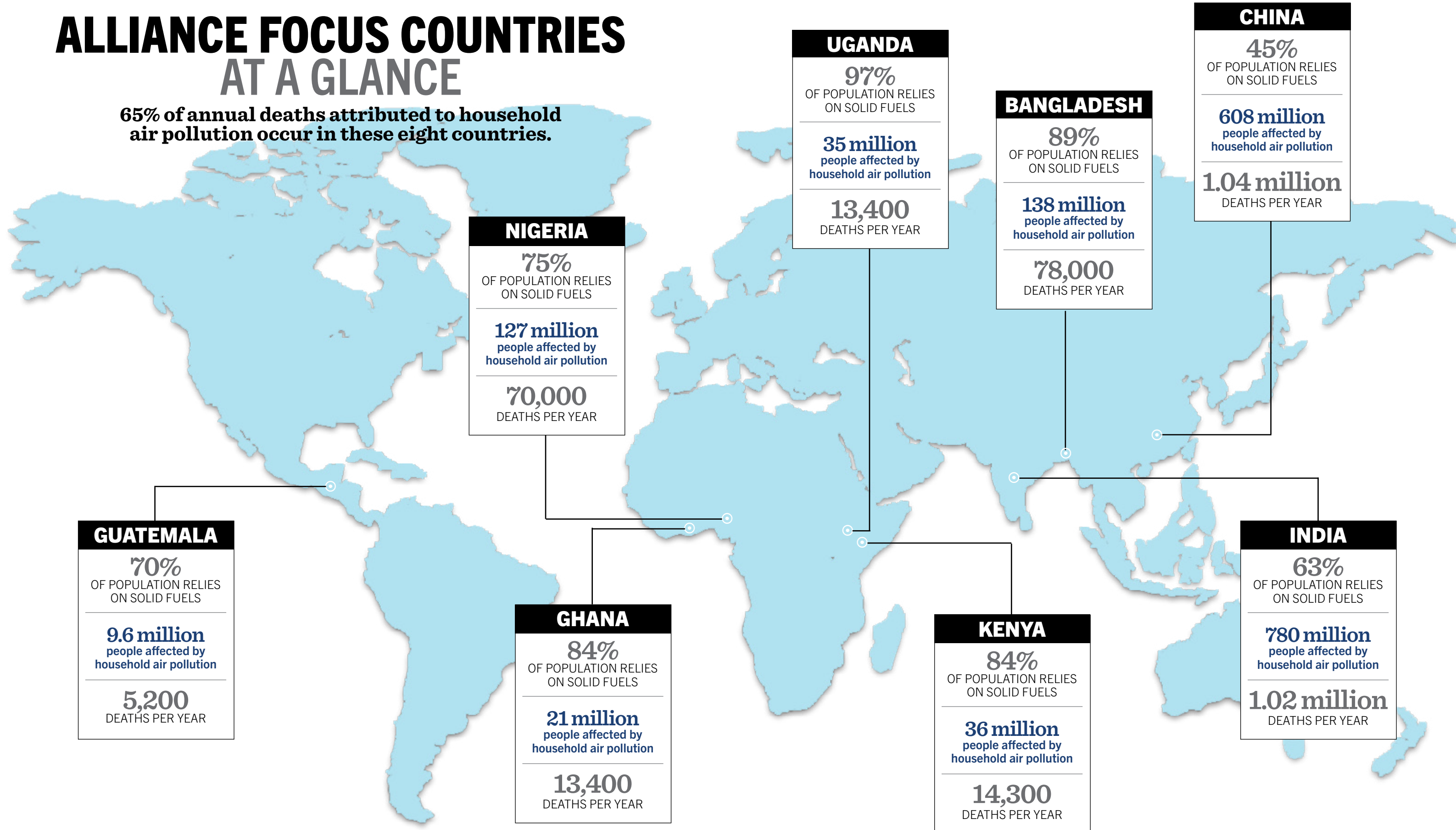
Luu Meng is Cambodia's most recognizable chef. He is the president of the Cambodia Hotel Association, sits on the board of the Cambodia Restaurant Association and is co-author of the book *Cambodia's Top Tables*.





# ALLIANCE FOCUS COUNTRIES AT A GLANCE

65% of annual deaths attributed to household air pollution occur in these eight countries.



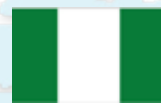


# FOCUS COUNTRY GOALS AND STRATEGIES



## GUATEMALA

Seventy percent of households in Guatemala use firewood and reducing the fuelwood deficit is imperative. **Cleaner and more efficient cookstoves and fuels play a major role in forest preservation.** President Otto Pérez Molina, a member of the Alliance's Leadership Council, has made the issue a priority across ministries. The Alliance is supporting the clean cooking sector in Guatemala through customer research, access to finance, public awareness, and by mobilizing international initiatives around household air pollution. In November 2013, the Inter-institutional Wood and Energy Roundtable, which represents 14 government agencies, released a National Strategy for Sustainable Use of Wood. The Ministries of Energy, Agriculture, and Environment are working towards the Strategy's **goal of disseminating 650,000 cookstoves over the next 10 years.** The Guatemalan Cluster for Improved Cookstoves and Clean Fuels, an active and collaborative industry association, was also established in 2013. It has helped unite the diverse enterprises in Guatemala around common interests in the clean cooking sector. Guatemalan stakeholders worked with the Alliance on a Country Action Plan (CAP), which was released in May 2014. Over 100 national and international partners contributed to the CAP, thus ensuring the strategy fully represents the needs and priorities of the sector.



## NIGERIA

Working with the Federal Ministry of Environment and the Nigerian Infrastructure Advisory Facility, the Alliance and its local partner continue to mobilize sector stakeholders. The Nigerian Alliance, a public-private partnership of government agencies, corporations, and donors, helped to develop a comprehensive National Clean Cookstove Program Plan of Action with a **target of 17.5 million households by 2020.** The National Alliance is now executing pilot programs in three states—Ebonyi, Jigawa, and Niger—and will focus on ways to enhance demand, raise public awareness, and maximize rural networks to market clean cookstoves and fuels. In addition, the Standards Organization of Nigeria is participating in the ISO process and to facilitate its work, the Alliance has helped establish a Clean Cookstoves Development Centre in Ebonyi State and a National Clean Cookstoves Testing Laboratory at the University of Nigeria, Nsukka. **Local production is critical to improving access to clean cooking technologies,** and in 2014 the Alliance awarded a Spark Fund grant to SMEFunds, a company that has developed a new type of clean cookstove. It also awarded a 2013 Pilot Fund grant to Solar Sister to support its work to empower women entrepreneurs in Nigeria. The Alliance is also in the process of facilitating a Country Catalytic Grant fund.



## GHANA

In 2012, Ghana became the first country to launch a National Action Plan for achieving the objectives under the UN's Sustainable Energy for All initiative. This early adoption, combined with the leadership of the Ghana Alliance for Clean Cookstoves (GHACCO), has spurred **considerable progress in the cookstoves and fuels market.** Foreign Minister Hanna Tetteh has prioritized the issue of clean cooking and the Energy Commission stated that the country can meet its goals by 2020. The Alliance has supported those goals by conducting a comprehensive market assessment in Ghana. It is also working with the government to develop a national LPG policy. Ghana is aligned with the ISO TC285 standards process and is working with the Alliance to bolster its Regional Knowledge and Testing Center at the Council for Scientific and Industrial Research. **There are 900,000 improved and clean stoves in circulation** and that number is expected to grow once the Alliance launches its national consumer awareness campaign. Two clean cooking ambassadors, Reggae star Rocky Dawani and soccer legend Stephen Appiah, will champion that effort. The Alliance has established a Country Catalytic Grant fund in Ghana and the GHACCO team is continuing to identify promising local enterprises and helping them become "investor ready."



## UGANDA

The Alliance is working closely with the Uganda National Alliance on Clean Cooking (UNACC) and the Ministry of Energy to increase the use of clean cooking products and fuels in Uganda. The Alliance completed a market assessment in 2011, and this informed the Country Action Plan developed by government representatives, national stakeholders and international organizations. **To date, 1.2 million improved stoves have been distributed in Uganda.** To bolster that number, the Alliance is working with the World Bank and UNACC to provide a range of capacity building products to enterprises along the clean cookstoves and fuels value chain. The Alliance has awarded \$1 million in support over the last two years through its Spark Fund, Pilot Innovation Fund, and Women's Empowerment Fund. **It has also supported two Regional Testing and Knowledge Centers (RTKCs).** The RTKC at the Center for Integrated Research and Community Development focuses on field-testing and other types of monitoring. The RTKC at the Centre for Research in Energy and Energy Conservation (CREEC) is a knowledge hub for bioenergy technologies, research, design, and development. CREEC is a key driver for the Standards and Testing taskforce of the UNACC and is working toward ISO accreditation.



## KENYA

In partnership with the Clean Cookstoves Association of Kenya (CCAK), the Alliance has driven \$20 million in grants, investment and in-kind support to enable the market for clean cookstoves and fuels in Kenya. The government has made a commitment to advancing the sector and helped formulate a **Country Action Plan that set a goal of 5 million clean cookstoves and fuels by 2020.** The Alliance is working with its global partners to develop international standards and the Kenya Bureau of Standards is playing an instrumental role as the co-secretariat of ISO TC285. In addition, the Alliance is supporting the Kenya Industrial Research and Development Institute in the establishment of a Regional Testing and Knowledge Center and has commissioned studies on consumer segmentation and on consumer access to financing in Kenya. Further, in partnership with USAID/Winrock, it is supporting the Kenya Union of Saving and Credit Cooperative Organization (KUSCCO) in establishing a credit facility for cookstove businesses and consumers. KUSCCO will lend money through its national network of over 5,000 savings and credit cooperatives. In anticipation of rising consumer demand, **the Alliance has grown the business capacity of four clean cookstove production facilities** through its Spark Fund (SF) grants. The Alliance is also in active discussions with OPIC and Equity Bank on possible ways to enable further enterprise and consumer financing. GVEP, EzyLife and Burn Manufacturing Co. were awarded SF grants in 2013 and Sim Gas in 2014. The 2014 awards were announced in February in front of an audience of entrepreneurs and sector champions at a Clean Cooking National Conference in Nairobi.



## INDIA

The Alliance has made great strides in India, especially in engaging national and state-level government officials in awareness and advocacy, standards, testing, and enterprise capacity building. Under the new government, the Ministries of New and Renewable Energy, Health and Family Welfare, and Petroleum and Natural Gas, have expressed their interest in working quickly to scale solutions using biomass, and their intention to extend the clean fuel supply chains for LPG and induction stoves to rural areas. **The Alliance has set a goal of delivering clean cooking solutions to 5 million households** in Phase 2 and is supporting enterprise capacity building through the launch of the Sankalp Award for Innovation in Clean Cooking Solutions. The 2014 winner, Nokooda, manufactures fuel pellets from horticultural waste. The Alliance has also awarded Pilot Innovation Fund (PIF) and Spark Fund grants to three Indian enterprises: Prakti Design won a 2014 PIF grant; former 2013 PIF winner Greenway Appliances was awarded a 2014 Spark grant; and Grassroots Trading Network for Women, SEWA, won one of the inaugural Women's Empowerment Fund grants in 2014. Further, **two Regional Testing and Knowledge Centers have been established** at the Indian Institute of Technology Delhi and at The Energy and Resources Institute. The Alliance has commissioned several studies such as the India Cookstove and Fuels Market Assessment and a multi-scale geospatial data map of nonrenewable fuels harvesting for biomass fuels in South West India (Karnataka). The burns and safe cookstoves working group also helped develop a global burns surveillance tool at Lok Nayak Hospital, Delhi.



## CHINA

Over 700 million people rely on solid fuels for cooking in China and the size and scope of this market is unique. Recognizing the magnitude of the issue and the considerable number of stakeholders in the sector, the Chinese Central Government has appointed the influential National Development and Reform Commission (NDRC) to shape a **long term, comprehensive clean cookstove policy.** Vice-Chair of NDRC Minister Xie Zhenhua will lead a collaborative effort with the Ministry of Agriculture, Ministry of Science and Technology and the All-China Women's Federation to advance stove adoption, technology innovation, international standards, public awareness, knowledge sharing and technology transfer. Recognizing that adoption is one of its key goals, the Alliance has signed a memorandum of understanding with China's Ministry of Agriculture. It has also committed considerable resources to launch two testing centers and fund an in-depth cookstoves and fuels market assessment. The assessment includes studies in six provinces that are representative of national variations in climate, geography, fuel availability, and stove type. Those findings will inform a pilot program to encourage adoption of clean cookstoves in 8 million households by 2017 and will ultimately be incorporated into a national clean cookstoves and fuels program under China's 13th Five Year Plan. Minister Xie was recently appointed to the Alliance Leadership Council. He has said that **Chinese stakeholders are committed to working with the Alliance** towards a shared goal: Achieving the adoption of clean cookstoves and fuels in 40 million households by 2020 and securing universal adoption by 2030.



## BANGLADESH

The Government of Bangladesh has declared its goal to make the country's kitchens smoke free by 2030. To that end, the Power Division, Ministry of Power, Energy and Mineral Resources, SNV Netherlands Development Organization, GIZ Bangladesh, the U.S. Agency for International Development, and the World Bank have worked with the Alliance to develop a **Country Action Plan to distribute clean and improved cookstoves to 5 million households by 2017.** With Alliance support, the Power Division has developed a Household Energy Platform to coordinate the sector's efforts and ensure that stakeholders are working on a cohesive strategy. In addition, the Bangladesh Standards and Testing Institute is developing national standards for cookstoves and its staff has participated in recent ISO TC285 meetings. To support that push towards standardization, the Infrastructure Development Company Ltd, a non-bank financial institution which promotes economic development by encouraging investment in energy and infrastructure projects, has funded a National Cookstove Testing Center. **The Alliance has commissioned research on consumers and on marketing strategies** and plans to launch an awareness-raising campaign in 30 districts. It has also provided capital to two enterprises through its Pilot Innovation Fund. Rahimafrooz Renewable Energy Ltd, a solar product distributor, will expand into the clean cooking market by building on the WASHplus study conducted in Bangladesh, and Prakti Design is developing a clean cooking, two-burner, multi-fuel stove in response to growing consumer demand.



# DRIVING INVESTMENT, STRENGTHENING ENTERPRISES, ENCOURAGING INNOVATION

The Alliance is using grants and other forms of soft and patient capital to prepare a pipeline of new opportunities for investors. To date, \$50 million of private capital has flowed in to the sector to support the growth of enterprises along the cookstoves and fuels value chain. In fact, the Alliance is currently leveraging a dollar of investment funding for every dollar of grant funding. Access to finance is key to scaling up a sustainable supply of cleaner and more efficient cookstoves and fuels and the Alliance has worked with investors to stimulate their engagement in the sector. It has also focused on developing a suite of financial products to bridge the “pioneer gap” and to strengthen enterprises to the point of investment readiness. The Alliance’s Pilot Innovation Fund finances creative approaches to business development and the Spark Fund provides capacity building and growth capital so that a business can become more investment ready. The Women’s Empowerment Fund provides grants to partners who offer gender and empowerment interventions within their business models. All three funds have attracted a stellar range of applicants who prove that there is no shortage of entrepreneurial talent in this market.



Sanga Moses (center), the founder and CEO of EcoFuel Africa, a maker of char briquettes.



Applied Sunshine staff demonstrate a solar stove in Guatemala.

## THE SPARK FUND

The Spark Fund invests grant capital in established but underfunded enterprises that have the ability to reach financial viability and real scale. The first round of Spark grantees in 2013 included Burn Manufacturing, EzyLife Kenya, GVEP, Impact Carbon and Relief International. Six grants totaling \$2.2 million were awarded under the second round of funding in 2014. The winners, chosen from more than 70 applicants, are profiled here:

**SimGas** is a biodigester design and manufacturing company focused on distribution in the East African market. The company’s household biogas system converts organic household waste into

cooking fuel that can be used to power biogas stoves.

**Eco-Fuel Africa** produces green charcoal from biomass waste. Based in Uganda, EFA employs local farmers, leverages local technology, and counts 260 women retailers in its value chain.

**Sustainable Green Fuel Enterprises** produces and sells clean burning, sustainable charcoal briquettes to low-income households in Phnom Penh, Cambodia. The company’s briquettes are made from compressed recycled char-ash and charred coconut husks.

**Greenway Appliances** designs and distributes efficient biomass cookstoves for rural families. The company’s flagship product, Greenway Smart Stove, is sold in 24 dis-

tricts in India and one district in Bangladesh.

**EcoZoom** has sold thousands of improved cookstoves in 18 countries. With its launch in Kenya, EcoZoom will expand its operations to include design, manufacturing, and direct distribution of wood and charcoal-fueled clean cookstoves.

**SMEFunds** is an ethanol gel manufacturing and distribution company focused on distribution in Nigeria. It has developed a method of producing cellulosic ethanol and converting the liquid into gel that can then be used in their cookstove, which is manufactured in China. SMEFunds has a distribution structure similar to that used by Avon Products and empowers individuals to sell the product at a margin throughout Nigeria.

## THE PILOT INNOVATION FUND

This year marked the second round of the Pilot Innovation Fund (PIF), which was established to spur innovation and finance game-changing ideas. The winners of the first round of the PIF in 2013 were UpEnergy, Potential Energy, Greenway Appliances, Solar Sister, Sustainable Green Fuel Enterprise and Improved Cook Stoves for East Africa Ltd. Two first round PIF grantees—Greenway Appliances and Sustainable Green Fuel Enterprise—have gone on to become Spark Fund grantees, supporting the Alliance’s hypothesis that the PIF creates a pipeline of innovative enterprises with the potential to scale. In 2014, six PIF winners shared \$400,000 to support their work:

**Applied Sunshine LLC** is a startup that has developed an innovative vacuum tube solar cooker to be marketed in Guatemala. This tube can cook various types of foods, including local staples such as tortillas.

**Prakti Design** will develop a two-burner, multi-fuel stove for Bangladeshi, Indian, and Nepalese markets. The firm hopes to quickly achieve economies



of scale with this innovative product.

**Emerging Cooking Solutions (ECS)** manufactures and distributes pellets made from agro-and forestry waste in Zambia. ECS will market test several lower-priced stoves for use with their pellets and look at several options for consumer financing.

**Rahimafrooz Renewable Energy Ltd** is a solar home systems distributor in Bangladesh. Rahimafrooz will market test several different cookstoves and develop their plan to expand into the clean cooking market.

**CleanStar Ventures** will develop an ethanol stove with a refillable fuel cartridge, complementary household appliances that can use ethanol, and a fuel distribution process that leverages partnerships with

multinational corporations in Kenya.

**C-Quest Capital (CQC)** is a private equity and carbon finance firm providing clean and efficient household energy technologies and sustainable sources of

household cooking fuels. Through TLC Green, a joint venture between CQC and the Malawian NGO Total Land Care, CQC proposes to test a new business model to couple the marketing and sale of sustainable firewood with improved cookstoves.



### 3 FUNDS TO HELP BUILD CAPACITY AND SCALE

→ Many traditional sources of capital, such as bank loans or lines of credit, are out of reach for smaller entrepreneurs who lack sufficient collateral or financial history for a loan. Even if these enterprises are able to secure a commercial loan, interest rates are often prohibitively high. To help solve this problem, Deutsche Bank's Global Social Investment Group is establishing the \$4 million **Clean Cooking Working Capital Fund** to deploy working capital loans and loan guarantees to enterprises that are unable to access more traditional forms of debt financing. The fund will offer flexible financing at reduced interest rates.

→ The **Country Catalytic Small Grant Program** helps answer the need for country-specific mechanisms that fund capacity building and growth of start-up and venture stage companies, particularly those that are locally owned and operated. Recipients are selected after undergoing an investment readiness analysis. The Alliance has launched the program in Ghana and will roll it out in other focus countries in Phase 2.

→ The Alliance's **Capacity Building Facility** is designed to fund clean cooking enterprises that are ready to scale and obtain long-term capital. These grants for capacity building are coupled with growth financing from investors.

### WOMEN'S EMPOWERMENT FUND

in 2014, the Alliance issued its first six Women's Empowerment Fund (WEF) grants to organizations that are implementing gender and empowerment interventions within their clean cooking business models. The following Alliance grantees will test and further develop the best practices highlighted in the resource guide *Scaling Adoption of Clean Cooking Solutions Through Women's Empowerment*.

**Envirofit** will examine how targeted empowerment and leadership training for women entrepreneurs in Kenya can impact their capacity to educate and support customers and scale adoption of clean cooking technologies.

**Fuego del Sol** will provide female school cooks with improved institutional stoves and train them in clean cooking techniques and maintenance, as well as support clean cooking entrepreneurs. Fuego del Sol will also work with the cooks to create central distribution hubs in Haiti for household cookstoves and briquettes.

**Mercy Corps** will analyze affordability and financing barriers for women purchasing improved cookstoves in



Uganda. They will design and test a portfolio of consumer financing mechanisms and determine which combinations have the greatest potential to scale clean cookstove adoption.

**The Paradigm Project** will apply its gender-sensitive approach to the EzyAgent program in Kenya by facilitating the recruitment of women as clean cookstove employees. Paradigm will seek to identify the primary characteristics, traits and skills that successful female EzyAgents share, as well as understand the conditions of success for female entrepreneurs in the clean cookstoves value chain.

**Grassroots Trading Network for Women** will develop a toolkit for a handheld electronic device that can be used to collect data to better understand Indian consumers' willingness to pay for clean cooking technologies. The device will also be used to show consumers the savings benefits they can achieve with improved cookstoves.

**Soluciones Apropriadas** is designing an improved cookstove for small-scale commercial food businesses in Guatemala. The group will engage home cooks in the research and development process.

### CARBON FINANCE

A clean cookstove can save 1 to 2 tons of carbon dioxide (CO<sub>2</sub>) emissions per year and some clean cooking solutions save considerably more. These CO<sub>2</sub> emission reductions can be certified and sold through global carbon markets generating an additional source of revenue for stove businesses. The Alliance's Carbon Finance Platform provides how-to guides, tools, templates, reports, case studies and other tools to assist stakeholders with varying levels of carbon expertise.

### MORE NEWS ON CLEAN FUELS

The Alliance is "fuel neutral" because it recognizes that the 3 billion people around the world who rely on biomass for fuel and heating do not have equal access—in terms of supply or affordability—to cleaner fuels. It must also be flexible in its approach since the policy contexts, barriers, and facilitators of market expansions in cleaner fuels and stoves are unique to each market. The Alliance's Phase 1 strategy has therefore focused on understanding the most appropriate cleaner fuel options for each region or country and outlining the steps needed to increase consumer access to that option.

In Ghana, the Alliance will assist the government as it seeks to transition 50 percent of the population to LPG as their primary cooking fuel. Partnering with experts in the LPG field, the Alliance has helped develop an action plan to identify the investments in supply, storage, distribution, retail, and consumer finance required to accelerate the adoption of LPG domestically.

In Nigeria, the Spark Fund is helping a local ethanol gel enterprise reach commercial viability and scale. The Alliance is also convening East African briquette producers and distributors to better understand the barriers that have kept them from penetrating rural markets.

In India, populations in several states have access to electricity and the Alliance is looking at the feasibility of extending the fuel supply chains to rural areas for both LPG and electric induction. Here the Alliance can help households "skip steps" on the fuel ladder and achieve healthier outcomes faster.

In Phase 2, the Alliance will perform a global analysis of different fuel supply chains to identify impacts and barriers, strengthen the case for investors, and identify successful initiatives.

**THE EQUATION IS CLEAR: Clean fuels plus cleaner burning stoves equals more lives saved and real progress towards our Phase 2 goal of 60 million households adopting clean cooking solutions by 2017.**



# THE IMPORTANCE OF BUILDING THE EVIDENCE BASE

Research studies create a compelling case for global action.



Women compare different stoves at the Self-Employed Women's Association test kitchen in Gujarat, India.

In order to reach its goal to spur adoption of clean cookstoves and fuels in 100 million households by 2020, the Alliance must both demonstrate that the adoption of these technologies will significantly improve public health and quantify the extent of that impact. Despite the fact that household air pollution has been linked to more than 4 million premature deaths each year, too few studies clearly demonstrate the benefits of adopting cleaner cooking technologies. As a result, the general awareness of clean cookstoves and fuels as a public health intervention remains low. Yet we know that electricity and clean fuels including

ethanol, solar and LPG, have the ability to reduce exposures to household air pollution to levels that provide health impacts. New more advanced stoves have overcome some of the technical challenges associated with earlier versions of improved biomass stoves and also promise benefits.

The Alliance believes that by providing governments, NGOs, impact investors, and donors with scientifically based information on the benefits of clean cooking technologies, it can help them quantify the impact of their investments in the sector. The Alliance set out to build

this evidence base, and over the last four years, has helped direct almost \$5 million in research grants to the sector and supported 39 studies across 23 countries. Those studies show clean cooking solutions not only protect public health, but also offer clear environmental, gender and economic benefits that when aggregated, create a compelling case for global action.

The Alliance has formed a Research Advisory Committee (RAC), which includes distinguished research experts in health, energy, standards and testing, environment, gender and economics. Its committee

members support the Alliance research team and provide oversight to ensure that its research priorities are comprehensive, balanced and globally representative. RAC members also support the review and issuance of research grants and help determine which investments will most effectively demonstrate the impact of clean cooking interventions. All members serve two-year voluntary terms and help leverage funding for research while reducing duplication of research efforts, sharing information across research areas, and providing technical assistance to Alliance partners.

**FAST FACT** Exposure to household air pollution during pregnancy is associated with a 90 gram reduction in a baby's birth weight.

**FAST FACT** Collecting fuel can take up to 5 hours per day. With an improved cookstove, women can use that saved time to care for their children, participate in income-generating activities, and rest.

studies explore how the adoption of clean cooking during pregnancy can impact pregnancy outcomes including birth weight. The studies address a range of clean cooking technologies, including biomass stoves, ethanol, and LPG. Preliminary results are clear: Adoption of cleaner cookstoves and fuels delivers substantial reductions in exposure to household air pollution. The Alliance has also strengthened research on the causes and risk factors for severe burns, which contribute to 195,000 deaths annually. While a large proportion of these are thought to be cooking related, there is limited data on the direct causes and risk factors for severe burns. To address this data gap, the Alliance, WHO, CDC, and a global network of public health experts have developed a new Global Burn Registry Form so that data collection on burns can be globally harmonized. The form has now been pilot tested in 46 hospitals within 26 countries.

The Alliance is continually attracting new researchers from different disciplines to the sector and to maximize the effectiveness of its work, it has created a Research Platform to standardize, synthesize, coordinate, and share those studies with the sector, donors, and other researchers. The Platform also makes the results more accessible and understandable to other stakeholders and it drives innovation by showcasing improvements in stove design, new materials, and factors that influence adoption.

## Health Research

In Phase 1, the Alliance supported three child survival research studies in Ghana, Nigeria, and Nepal. These

## Climate Research

Large-scale adoption of clean cookstoves, fuels and other cooking solutions can help mitigate climate change by reducing carbon dioxide emissions from non-sustainable harvesting of biomass, and by lowering emissions from short-lived climate pollutants and aerosols such as methane, carbon monoxide, and black carbon. However, the sector needs a better understanding and quantification of the net climate impact of emissions from the cooking sector. The Alliance is guiding the sector as it seeks to identify and target regions where the climate benefits from cookstoves will be greatest and is currently working with researchers on the first phase of an innovative woodfuel database and geospatial-mapping tool. Developed by experts from Universidad Nacional Autónoma de México, Yale University, and the UN's Food and Agriculture Organization, it will enable program developers to incorporate environmental concerns, including sustain-

ability of fuelwood, into their planning and identify areas where scaling clean cookstoves and fuels could provide the greatest benefits to the environment. The next phase of research will involve in-depth analyses of the effects of biomass harvesting in 'hot-spot' areas of Africa, Asia, and Latin America, namely Honduras, Kenya, and India.

## Gender Research

The Alliance is gathering data on the impacts of clean cookstoves on women's livelihoods, social status, financial situation and overall empowerment. It has funded studies on gender impacts in South Asia, the Andean region, and Kenya, and is supporting research that sets out to understand socio-cultural factors such as how time saved from use of clean cookstoves is spent. The Alliance is also supporting research on the impact that women entrepreneurs working in the cookstove and fuels value chain have on clean cooking adoption rates in Kenya.

## HOUSEHOLD AIR POLLUTION INTERVENTION TOOL

Policymakers, donors, NGOs and researchers now have access to a simple web-based tool that can compare the impacts of various cooking technologies on health at the national level. With the Household Air Pollution Intervention Tool (HAPIT), users can compare the lifesaving impact of available interventions and make evidence-based decisions. HAPIT was developed at the University of California, Berkeley, with support from the Alliance and funding from the UK's Department for International Development and Environment Canada.



# THE GROWING IMPACT OF GLOBAL STANDARDS AND TESTING

One of the Alliance's key value propositions is its work to lead the development of standards and testing in the clean cooking community. From its engagement in the ground-breaking 2012 International Standards Organization (ISO) International Workshop Agreement, to its work in 2013 with ISO Technical Committee 285 on clean cookstoves and clean cooking solutions, the Alliance has played a strong leadership role. The development of consensus standards is essential if the Alliance is to drive health and environmental gains. Common standards provide a set of indicators against which to rigorously measure the performance of a technology. And ratings, based on data gathered during a consistent and independent testing process, are a valuable benchmark for stakeholders across the sector.

## 5 REASONS WHY ISO STANDARDS ARE CRITICAL



A stove is tested at the Centre for Research in Energy and Energy Conservation (CREEC), one of two RTKCs in Uganda.

## THE CLEAN COOKING CATALOG IS NOW A DYNAMIC RESOURCE

The Alliance's online global database of cookstoves, fuels, specifications, prices, manufacturers, performance testing and geographic distribution is the go-to resource for distributors, investors and innovators. The latest version has features like the Submit a Stove Form to ensure that the catalog evolves as technologies continue to improve. The Alliance has also worked with RTKC partners to develop standardized templates for collecting and sharing data. These reports will be uploaded into the catalog, allowing for faster data sharing and anonymous test results.

## A GLOBAL NETWORK OF TESTING EXPERTS

Regional Testing and Knowledge Centers (RTKCs) support local producers and manufacturers, helping them to improve their products and communicate information on stove performance to their customers and investors. Testing centers provide independent and unbiased reports on emissions, fuel efficiency, safety, and durability. The Alliance has supplied lab and field-testing equipment to build the sustainability and capacity of 13 RTKCs across Africa, Asia, and Latin America, and provided support for the training and development of staff in centers in other countries. For example, the Alliance has helped organize intensive training workshops at the US Environmental Protection Agency's (EPA) lab in North Carolina and at Zamorano University in Honduras. It is also coordinating knowledge sharing and improvements in testing methodologies. To ensure the reliability and value of the RTKCs as a resource for producers and manufacturers, the Alliance is coordinating 25 centers in a round-robin

testing, in which the same set of cookstoves and fuels are tested by different organizations. Alliance partners like EPA have also held regional field testing and cookstove performance capacity-building workshops for more than 50 stove developers in Benin, India, Mexico, Nepal, and Vietnam.

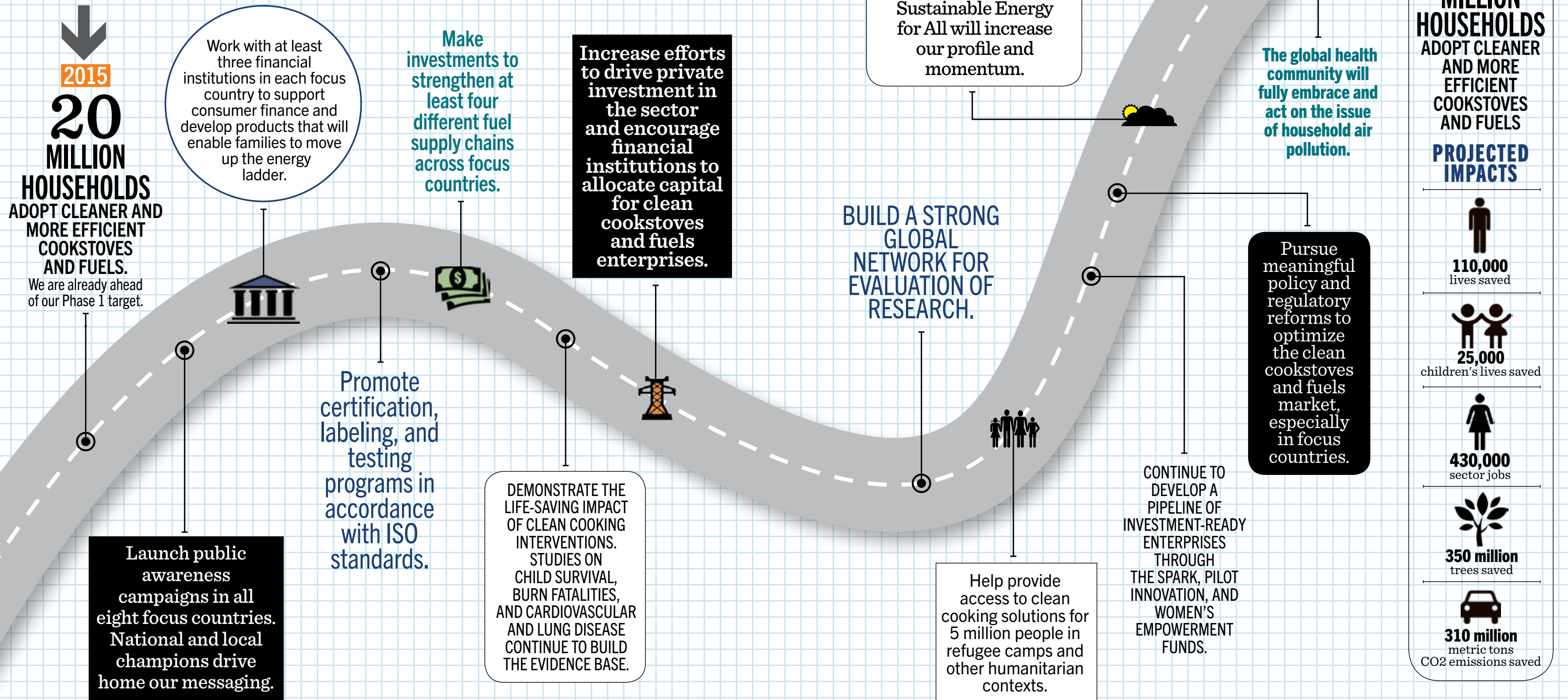
## THE LATEST ON ISO

The International Standards Organization (ISO) Technical Committee 285 on clean cookstoves and clean cooking solutions was approved in June 2013 with Kenya and the United States serving as Co-Secretariat, and a representative from the Alliance as committee chairperson. In 2014, at the first ISO meeting in Nairobi, committee members from 35 participating and observing countries discussed issues such as laboratory testing, field testing, durability and social impacts, which led to the launch of Working Groups that will have detailed discussions on the highest priority issues. Since then, countries have been nominating experts to participate in these Working Groups to ensure the proposals are relevant for the individual countries and their stakeholders. These four Working Groups, as well as Fuels and Communications Task Groups met in October 2014, for a ISO TC 285 meeting in Guatemala, to address comments from stakeholders and develop drafts.

PHOTO BY CREEC

# ROADMAP FOR PHASE 2

The Alliance's strategic plan includes a goal for 60 million households to adopt cleaner and more efficient cookstoves and fuels by 2017. These strategies will raise awareness to create that demand, bring smart products and ideas to market, build the evidence base for clean cookstoves and fuels, and fully engage impact investors. Working with its partners, and following this action plan, the Alliance will make great progress towards defeating this silent killer.








Use research results to continue to demonstrate the environmental and climate benefits of clean cooking. Affirmation of global energy goals in Post-2015 SDGs, Beijing +20, and Sustainable Energy for All will increase our profile and momentum.

Increase efforts to drive private investment in the sector and encourage financial institutions to allocate capital for clean cookstoves and fuels enterprises.

Pursue meaningful policy and regulatory reforms to optimize the clean cookstoves and fuels market, especially in focus countries.

**2017**  
**60 MILLION HOUSEHOLDS**  
ADOPT CLEANER AND MORE EFFICIENT COOKSTOVES AND FUELS  
**PROJECTED IMPACTS**

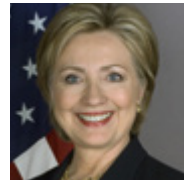
-  **110,000** lives saved
-  **25,000** children's lives saved
-  **430,000** sector jobs
-  **350 million** trees saved
-  **310 million** metric tons CO2 emissions saved



## Leadership Council & Champions



**Michelle Bachelet**  
President of Chile



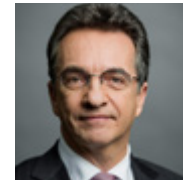
**Hillary Rodham Clinton**  
Former U.S.  
Secretary of State  
Leadership Council Chair



**Lynne Featherstone**  
MP, Parliamentary  
Under-Secretary of State  
for International  
Development, UK



**António Guterres**  
UN High Commissioner for  
Refugees



**Friedrich Kitzchelt**  
State Secretary of the  
Federal Ministry for  
Economic Cooperation and  
Development, Germany



**Gina McCarthy**  
Administrator of the U.S.  
Environmental Protection  
Agency



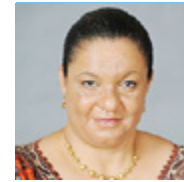
**Otto Pérez Molina**  
President of Guatemala



**Mary Robinson**  
President and Chair of the  
Board of Trustees, Mary  
Robinson Foundation –  
Climate Justice



**Bukola A. Saraki**  
Chairman, Senate  
Committee on Environment  
& Ecology of Nigeria



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The Global Alliance for Clean Cookstoves is a public-private partnership hosted by the United Nations Foundation that seeks to save lives, improve livelihoods, empower women, and protect the environment by creating a thriving global market for clean and efficient household cooking solutions. The Alliance's 100 by '20 goal calls for 100 million households to adopt cleaner and more efficient cookstoves and fuels by 2020. The Alliance is working with its public, private and non-profit partners to help overcome the market barriers that currently impede the production, deployment, and use of clean cookstoves and fuels in developing countries.

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