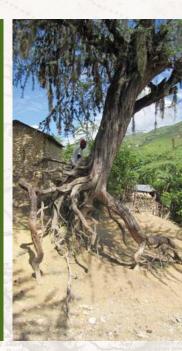






In 2010, after a decade focused on its home city of Boston, the Barr Foundation launched a pilot in global grantmaking. Over the next three years, guided by a vision for a vibrant, just, and sustainable world with hopeful futures for children, the foundation engaged with over 20 organizations striving to improve the lives of children and families living in poverty in East Africa, India, and Haiti. This booklet summarizes our approach, grant investments, and learning from this initiative.



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From local to global

I am pleased to introduce this booklet, which shares the Barr Foundation's early work and learning from a three-year pilot in global giving. In 2010, after a decade focused on our home city of Boston, we set out to learn whether a small Bostonbased team could find meaningful ways to engage with efforts to improve the lives of children and families in the Global South.

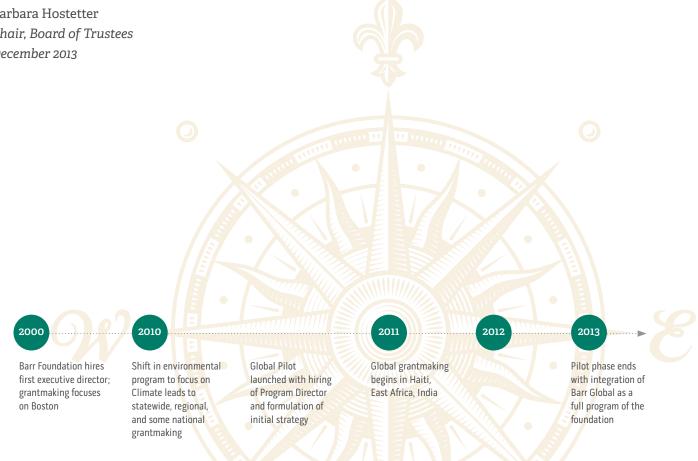
We began with many questions. Over three years, we have answered some of them. Yet in this work we have found there are always questions beyond questions. The one thing we know for certain is that our learning has only begun.

So, this is not a how-to manual or case study on best practices in international philanthropy. It is our humble effort to document and share our experience and learning thus far. If this booklet conveys even a hint of the energy, optimism, and ingenuity I have been fortunate to witness in our global partners (and in a terrific Barr Global Team), I will count it a great success.

Thank you for reading.

Sincerely,

Barbara Hostetter Chair, Board of Trustees December 2013



4 BARR FOUNDATION :: FROM LOCAL TO GLOBAL :: LETTERS

Building a boat while sailing

I am incredibly grateful to the Barr Foundation and its trustees for the opportunity to co-create a new grantmaking program focused on reducing global inequity. From the beginning, we have had two priorities: impact and learning. For impact, we gravitated to organizations with proven leaders and innovative, scalable models. To maximize learning, we were intentionally broad in selecting geographies, types of partners, investment approach, and portfolio areas. In all of these, we concentrated on areas critical for people to thrive: health, livelihoods, and the environment.

In the face of severe poverty and environmental degradation in our target geographies, and of fragile livelihoods made even more vulnerable by climate change and population growth, we felt an urgency to act as quickly as possible. For us, that meant conducting intensive research and rigorous landscape analysis in a limited timeframe. We also compared the cost-effectiveness of different interventions and identified innovative organizations with execution capabilities. Finally, we dedicated time for learning and refining our approach in parallel with developing new grants.

In other words, we have been building a boat while sailing. Yet we have been carefully studying existing maps. We have also had a steady wind at our backs from trustees who gave us their trust and the latitude to try new things; from colleagues at the Barr Foundation who gave us the administrative support we needed; and from all those whose time, expertise, and critical thinking helped shape our work.

Since January 2011, we have made 23 grant investments totaling \$20.5 million across East Africa, Haiti, and India. Our partners support smallhold farmers to improve their crop yields and manage their natural resources, train community health workers to improve the health of mothers and young children, introduce and scale business models that create sustainable markets for important household goods, such as solar lights and irrigation pumps. All of our activities are planned and implemented in close collaboration with community members, local organizations, and governments with a strong focus on capacity building.

Most of these efforts are still ongoing. This booklet offers a snapshot of Barr's emerging international portfolio at a moment in time and of a group of organizations with whom we have been honored to forge relationships. Above all, our purpose is to spotlight them as they create lasting, positive change, and to encourage others to join the growing fleet already sailing into this work.

Heiner Baumann Director, Global Programs







Four Interconnected Portfolios

Barr funds initiatives that deliver results in four portfolio areas.



COMMUNITY HEALTH

Our community health portfolio aims to increase access to quality health care in rural areas, with particular attention to mothers and children under five years of age. We focus on increasing the number of appropriately trained and supported community health workers, addressing barriers to the availability of essential medicines, and supporting the use of mobile technology to improve the quality of care.



SUSTAINABLE AGRICULTURE

In our sustainable agriculture portfolio, we seek to increase agricultural productivity and market access for smallholder farmers in an environmentally responsible manner. We also recognize the need to help farmers strengthen their resilience to climate change. Investments aim to introduce new farming practices, rehabilitate degraded land, and expand access to markets and irrigation technologies.



How did we arrive at these four portfolios?

At the start of Barr's global pilot, we decided to focus on rural areas and to invest in efforts that improve livelihoods, health, education, and the environment of families living in poverty. Since the majority of people living in rural areas in our target geographies depend on agriculture for their livelihoods, and many utilize unsustainable farming practices, we have developed an explicit focus on sustainable agriculture.

The majority of illnesses affecting rural populations can be prevented and/or cured with existing solutions, yet too many rural households lack access to quality care when they need it. We created a **community** health portfolio to improve the skills of community health workers and to address the barriers to accessing drugs and health commodities.

CLEAN ENERGY

The goals of our clean energy portfolio are to improve the health and economic welfare of families in rural areas by introducing new technology and to reduce their environmental footprint. We invest in organizations with potential to increase access to affordable and clean energy by developing markets for clean cookstove technologies and solar lights, launching demonstration projects, and utilizing existing rural distribution platforms.





EXPLORATION & LEARNING

The Exploration and Learning portfolio provides Barr with flexibility as new issues and areas for investment are considered and special opportunities for engagement are identified.



Meeting the energy needs of rural populations is a priority. Cooking makes up roughly 70% of all energy consumption in our target geographies. More than 90% of this is derived from wood, charcoal, dung, or other biomass. Producing such cooking fuels has led to massive deforestation. It has also led to poor soil health, as organic matter and nutrients are burned rather than returned to the soil. The inefficient burning of biomass and use of kerosene for lanterns also

create indoor air pollution and greenhouse gas emissions. These considerations led us to establish a **clean energy** portfolio.

Finally, we established a portfolio devoted to exploration and learning to allow for flexibility to support promising opportunities that might lead to new portfolio areas.

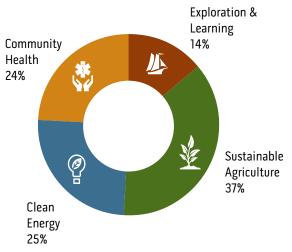
Three Priority Geographies

How did we choose these countries? An analysis of global poverty and health data, and other factors led us to focus on East Africa, India, and Haiti.

By Country Ethiopia 19% Haiti 22% Malawi 15% Multiple Kenya Countries 8% 15% Uganda India 5% 16%

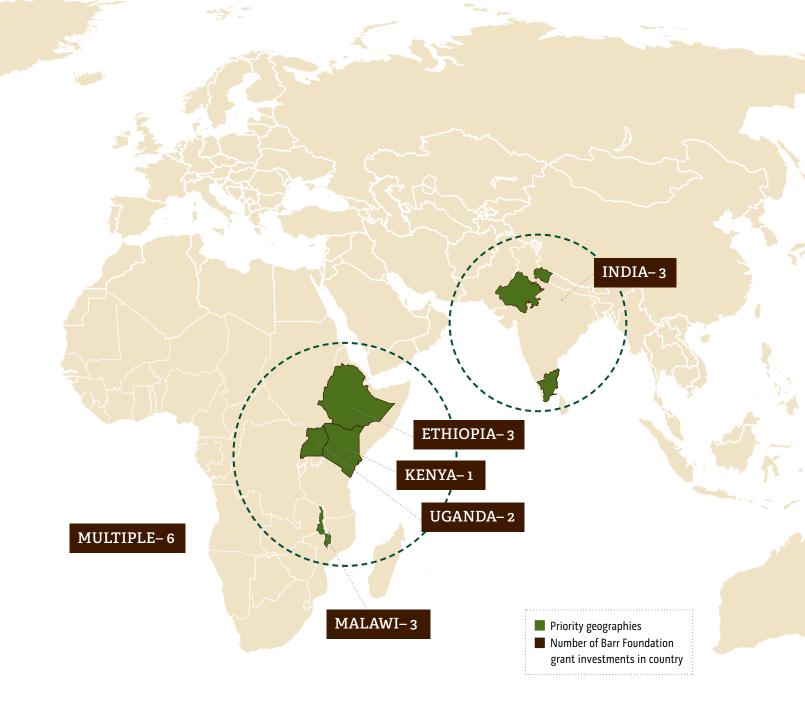
\$20.5 MILLION GRANT INVESTMENTS (JANUARY 2011-SEPTEMBER 2013)





Several factors propelled Barr to develop a special initiative focused solely on **HAITI**. The poorest country in the Western Hemisphere, Haiti faces a mix of chronic and acute challenges. The devastating earthquake of 2010, which occurred only a few months before we launched Barr's Global Pilot, made a fragile nation even more vulnerable to environmental and economic shocks. The Boston area is also home to an estimated 70,000 Haitians — one of the largest populations of Haitians living outside of Haiti.

HAITI – 5



Studies indicate that **EAST** and **WEST AFRICA** carry the highest burden of poverty and poor health. Since the first members of the Barr Global team had work experience in East Africa and existing networks that we could depend on to get traction quickly, we focused our activities there. We also decided not to explore investment opportunities in unstable countries, because we did not feel we had sufficient experience or capacity to effectively manage and mitigate the risks of investments in highly volatile environments. While **INDIA** has made significant gains over recent decades, the bottom third of its population struggles with many of the same challenges facing Sub-Saharan Africa. In fact, malnutrition is even more widespread in India. Beyond these challenges, we were attracted to India by the breadth of individuals, organizations, and civic societies that are fighting poverty and environmental issues in old and new ways. Some of these have already been adopted in Africa. Others originated in Africa and have been adopted in India to great effect. We were intrigued by the potential to facilitate even more exchange of effective practice and collaboration between India and Sub-Saharan Africa.



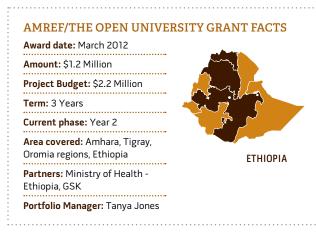
PROFILES IN

Community Health

- AMREF/OPEN UNIVERSITY Amhara, Tigray, Oromia regions, Ethiopia 12
 - D-TREE INTERNATIONAL Ntchisi and Mchinji districts, Malawi 14
 - LIVING GOODS Uganda and Nairobi, Kenya 16
 - SAVE THE CHILDREN Ntchisi and Mchinji districts, Malawi 18
 - VILLAGE REACH 10 districts of Malawi 20

Globally, every year, over six million children die before their fifth birthday. Nearly half die from preventable or curable causes, yet access to effective healthcare is limited, especially in rural areas. The leading causes of childhood mortality and morbidity are pneumonia, diarrhea, malaria, and neonatal complications, with nearly half of these deaths attributable to undernutrition. This loss of life can be dramatically reduced with the adoption of appropriate preventative measures and through the greater availability and use of curative services. Barr Foundation has invested in initiatives aimed at building the skills of community health workers, ensuring the supply of essential medicines, and improving the quality of care available in the most hard-to-reach areas of Malawi, Ethiopia, Kenya and Uganda.

AMREF/The Open University



PROBLEM

Globally, every year, more than six million children die before they are five years old. Nearly half of these children succumb to preventable and curable illnesses. Lack of access to primary health care services among rural residents prevents many parents from accessing appropriate care for their sick children.

OPPORTUNITY

Improved availability and access to preventative and curative care can significantly reduce these numbers, especially in rural areas. If properly trained and equipped, community health workers can respond appropriately to the health needs in communities, preventing and treating the leading causes of child mortality and morbidity.

OUR PARTNER

Headquartered in Nairobi, Kenya, the African Medical and Research Foundation (AMREF) is a development organization that provides health care to the most marginalized and vulnerable communities in Kenya, Uganda, South Sudan, Ethiopia, Tanzania, and South Africa. Since its founding in 1957, AMREF has trained over 500,000 healthcare workers, and its doctors have performed over 100,000 operations. The Open University (OU), founded in the United Kingdom in 1971, offers modern distance learning and is dedicated to making quality learning accessible to all. Today, the Open University is the UK's largest university. In 2011, the OU developed a one-year curriculum, authored by African medical experts and with an emphasis on reducing child and maternal mortality and morbidity, to train community health workers in Ethiopia.

BARR ENGAGEMENT

Nearly ten years ago, the Ethiopian government established the Health Extension Worker program. This is now a network of 30,000 community health workers trained to provide access to preventative healthcare services in rural communities. While the Health Extension Worker program has made a significant impact on health promotion in rural Ethiopia, participants are in the process of being equipped with the curative skills to treat the illnesses that lead to the majority of child deaths. Barr's partnership with AMREF and the Open University is focused on this gap to ensure that community health workers have the skills to provide the curative care necessary to save lives.

Barr Foundation's support is for the theoretical and practical training for 2,000 Health Extension Workers, refinement of training materials and curriculum quality assurance, support to 20 regional health training institutions, and monitoring and evaluation to create an evidence base for program strategy.

- 2,000 Health Extension Workers trained to provide curative care and improved prevention services to five million people in six regions of Ethiopia
- Improved capacity of 20 health training institutions and six regional health administrations to sustainably improve the quality and quantity of the rural healthcare workforce
- Improved livelihood of Health Extension Workers due to annual income gain of \$312 per individual resulting from a 35% salary increase





Ethiopian Health Extension Workers graduate from a year-long upgrading program Photo credit: AMREF Ethiopia

Over the medium term, this effort will improve maternal and child health outcomes in communities served by Health Extension Workers who have received this additional training.

PROGRESS TO DATE

- Institutional capacity assessment completed of 20 Health Science Colleges
- Technical support to 20 Health Science Colleges in six regions
- Training conducted for 259 trainers and Health Extension Worker instructors in three Barr-supported regions
- Training of 2,215 Health Extension Workers in a one-year program underway
- Teaching equipment and materials provided to Regional Health Bureaus

- Sub-awards to Regional Health Bureaus to support student and instructor expenses
- National Health Extension Worker Taskforce established

66 The role of our flagship health sector program, the Health Extension Program, which embraces more than 38,000 government salaried Health Extension Workers, has been pivotal in the achievements of remarkable results such as in family planning and Millenium Development Goals #4 and #6. **99**

— H.E. DR. KESETEBIRHAN ADMASU, MINISTER OF HEALTH, ETHIOPIA

D-Tree International



PROBLEM

Globally, every year, over six million children under five die. Nearly half of these deaths are from preventable or curable causes. Yet access to effective health care is limited, especially in rural areas. The leading causes of childhood mortality and morbidity are pneumonia, diarrhea and malaria, malnutrition, and neonatal conditions. Many of these can be dramatically reduced with appropriate preventative measures and greater availability and use of curative services. Trained community health workers can manage the treatment of childhood illnesses but require support to provide high quality care. Too often, community health workers are unable to accurately diagnose sick children. Many also lack the supportive supervision that would enable them to improve their caregiving.

OPPORTUNITY

Emerging mobile technologies can be used to help community health workers provide more accurate diagnoses, to enable their supervisors to provide more informed and useful guidance, and to improve pharmaceutical management information systems.

OUR PARTNER

Founded in 2004, D-Tree International brings evidencebased medicine to frontline health workers worldwide. Currently operating in Tanzania, Malawi, Sri Lanka, and India, D-Tree's mission is to develop and support electronic clinical protocols that enable health workers to deliver high quality care. At the core of these "e-protocols" are clinical algorithms that lead health workers through step-by-step clinical assessments to a diagnosis and specific treatment. D-Tree's e-protocols have been shown to be effective at enabling health workers at both the community and facility levels to make accurate diagnoses of malaria, pneumonia, diarrhea, and dehydration.

BARR ENGAGEMENT

In 2012, Barr-approved a two-year grant of \$600,000 to improve effectiveness and efficiency of community health workers' caregiving. The goal is to demonstrate the efficacy of mobile technology to ensure more accurate diagnoses, to improve supervision of community health workers, and to strengthen the Logistics Management Information System at the community level.

- 100 community health workers trained and operating D-Tree's newly developed integrated maternal and child health support tool in two districts
- 25 community health worker supervisors trained and supported to use D-Tree's newly developed e-supervisory support tool
- Improvements in quality of care at community level due to stronger supportive supervision of community health workers in pilot districts
- Improved availability of essential medicines in rural clinics of the pilot district and in the hands of community health workers through prediction of, rather than reporting on, drug utilization





A Community Health Worker in Malawi attends to a sick child using D-Tree's e-protocol on her mobile phone Photo credit: Megan Collins

PROGRESS TO DATE

In the first year, D-Tree has

- Developed decision-support software for community health workers that is improving the accuracy of diagnoses and treatment of sick children
- Integrated drug inventory software (in partnership with John Snow International, a public health management consulting and research organization) to ensure availability of appropriate drugs needed to treat children
- Developed a reporting dashboard for both local and national supervisors to track and improve reporting and care

Malawi is quickly becoming one of the world leaders in the use of mobile health technology to increase access to quality care on a national level.
 MARC MITCHELL, M.D., M.S., PRESIDENT, D-TREE INTERNATIONAL

Living Goods



PROBLEM

Every year, millions of young children in East Africa die unnecessarily from preventable and curable causes. In Uganda, the mortality rate for children under five is 69 per 1,000 live births. In Ugandan public clinics, particularly in rural areas, essential medical supplies are routinely unavailable. These same medicines are sold at significantly inflated prices by private chemists, sometimes 350% of factory costs, due to a byzantine supply chain. Counterfeit products abound. As a result, many children never receive the treatments that would allow them to make a full recovery. Meanwhile, simple life-changing, money-saving innovations have yet to reach the vast majority of the two billion people who need them.

OPPORTUNITY

The deployment of private micro-entrepreneurs is emerging as a sustainable way to increase adoption of appropriate prevention measures and the availability of both curative health services and otherwise unevenly distributed pro-poor products.

OUR PARTNER

Living Goods (LG) trains and equips networks of agents to sell essential health products door to door at prices affordable to the poor. In Uganda, LG has recruited and deployed over 400 agents into their direct network and over 500 agents through a partnership with BRAC, a global leader in creating opportunity for the world's poor. Much like Avon representatives, LG agents sell multiple items – over 70 in all, including treatments for the leading childhood illnesses, prevention and nutrition products – as well as consumer goods. The LG model combines the latest and best practices from the fields of micro-enterprise and public health to create a sustainable system for improving access to basic health products. LG aims to reduce child mortality and morbidity rates by at least 15% and make better living products, such as solar lanterns and cook stoves, available at reduced prices.

BARR ENGAGEMENT

Barr provided Living Goods with \$600,000 over two years to refine and strengthen the LG business model in Uganda, expand operations to Kenya, and facilitate LG replication/adoption in other countries.

Living Goods will expand its operations by nearly tripling the number of agents, moving from 300 agents to 1,100. This will increase their client base from 150,000 clients to over 400,000 clients. Additionally, Living Goods will launch operations in Kenya and build a national network of 1,045 agents. LG will build partnerships with established NGOs in Kenya to support these expansion plans.

- Deliver 340,000 total treatments and 200,000 treatments to children under five
- Identify and support 70,000 healthy pregnancies
- Generate meaningful savings for poor families on basic health products and consumer goods
- Generate \$200/year income per Living Goods agent
- Initiate and support new partnerships to replicate the Living Goods model and methods
- Expand Living Goods' operations to Kenya





Top: A Living Goods agent attends to a newborn baby in rural Uganda Photo credit: Tanya Jones

Bottom: Mobile phones are empowering Living Goods agents to earn more, delivering targeted health messages to clients, dramatically lowering costs to market and monitor, and enabling real time salesforce management Photo credit: Living Goods

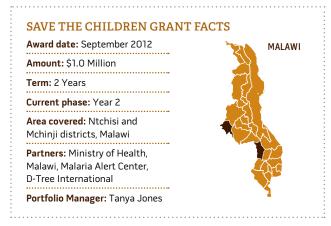
PROGRESS TO DATE

In the first six months of the award, the following has been achieved

- LG agents delivered 160,000 total treatments and 100,000 treatments to children under five
- LG agents identified and supported 25,000 pregnancies
- LG agents sold 25,000 improved cook stoves that will generate \$75 in savings by year end per household
- Living Goods officially opened for business in Kenya in July 2013 with a first branch in Kariobangi, Nairobi

66 Empowering Micro-Entrepreneurs to deliver life-changing products to the doorstep of the poor. **99** - LIVING GOODS WEBSITE

Save the Children



PROBLEM

Globally, every year, six million children under age five die. Nearly half of these deaths are from preventable or curable causes. Yet access to effective health care is limited, especially in rural areas. While curative services are present in most remote areas of Malawi through a cadre of frontline health workers known as Health Surveillance Assistants, the quality of care they provide needs improvement. In Malawi, all children who present with fevers in village health clinics are treated for malaria because malaria diagnostic testing is not yet available in the community. This can lead to over-treatment, waste, cost-inefficiencies, and increased drug resistance. Infrequent and poor quality of routine and clinical supervision of the Health Surveillance Assistants also limits their ability to deliver appropriate care.

OPPORTUNITY

In 2011, the Malawian Ministry of Health (mHealth) approved the use of rapid diagnostic tests for malaria (mRDT). However, this tool has thus far only been employed in health facilities. Introducing mRDT and pre-referral treatment for severe malaria at the community level could save many children's lives. Evaluative studies could generate evidence to catalyze malaria testing in village clinics throughout the country. To address infrequent and low-quality supervision of frontline health workers, the Malawian Ministry of Health (with Save the Children) introduced a new training package in 2011 for supervision, which could be used in mobile format to help supervisors more effectively assess and address performance issues.

OUR PARTNER

Founded in 1919, Save the Children works in 120 countries on health and nutrition, food security and livelihoods, education, protection, HIV/AIDS, and emergency humanitarian response. Save the Children has been active in Malawi since 1983 and currently works directly or through partners in 20 of the country's 28 districts. In 2010, Save the Children's programs reached over two and a half million Malawians and informed national policy for maternal, newborn, and child health.

BARR ENGAGEMENT

Barr awarded Save the Children \$1,000,000 over two years to help the Malawian Ministry of Health 1) introduce malaria diagnostic technology and treatment for severe malaria in village health clinics and 2) collaborate with D-Tree International to pilot a technological innovation to improve supervision of frontline health workers in one district. The goal of the initiative is to improve the quality of care provided by frontline health workers in rural Malawi.

- Improved diagnosis and treatment of children with malaria and pneumonia
- Improved adherence to standard case management through use of e-supervision tools
- 100 community health workers (CWHs) and 25 supervisors using mobile phone technology to support clinical diagnosis of children under age five, stock management, and staff supervision at community level
- Evidence-based research conducted assessing the feasibility of introducing rapid diagnostic testing for malaria and pre-referral treatment for severe malaria at the community level
- Malawian Ministry of Health poised to roll out the use of mRDTs at the community level and e-supervisory tools to a national scale in Malawi





A Health Surveillance Assistant (pictured in blue uniform) with infant, being held by his mother, he recently treated at village clinic Photo credit: Save the Children, Malawi

PROGRESS TO DATE

In the first year of the program, the following progress has been made.

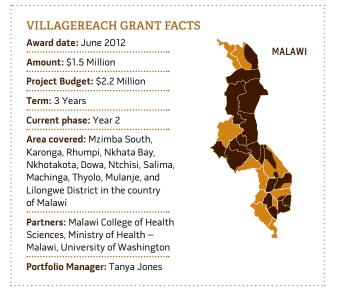
- Research protocol on a feasibility study of mRDT and pre-referral treatment for severe malaria approved by Ethical Review Board and key stakeholders
- Enumerators for the research study recruited and trained
- mRDT user guidelines, standard operating procedures, training manuals, job aides for CHWs, and reporting tools developed
- Baseline assessment of district health providers for mHealth activities conducted

- E-supervisory protocol with nine frontline health workers (six community health workers and three supervisors) in use of cellphones to manage ill children piloted
- Supervisors trained to use the mHealth application for conducting field supervision

66 All partners in the country are keen to see the results from this very important study; findings will inform the roll out of interventions to all districts in Malawi. **99**

 MR. NSONA, HEAD OF IMCI UNIT, MALAWI MINISTRY OF HEALTH

VillageReach



PROBLEM

Malawi is experiencing an acute crisis in drug procurement and distribution and a shortage of pharmaceutical staff. This means that stock-outs of essential medicines are common, particularly in rural areas. As a result of lack of access to medicine and other health system challenges, the mortality rate for children under five in Malawi is 112 per 1,000. This is 10 times higher than in the United States and other developed nations.

OPPORTUNITY

In resource-limited settings like Malawi, improving access to medicines can directly result in saved lives. One approach that has a measurable impact is to train and place dedicated staff to assist medical officers in rural public health facilities. Training a cadre of Pharmacy Assistants with the skills to manage medical logistics will ensure that pharmaceutical supplies are properly inventoried, stocked, and requested from district health teams. In addition, having qualified pharmacy personnel dispensing medications will ensure that patients receive the appropriate medications and counseling.

OUR PARTNER

Barr's lead partner in this work is VillageReach, which is coordinating efforts with the Malawian Ministry of Health, the Malawi College of Health Science, and the University of Washington Global Medicines Program to launch a Pharmacy Assistant program. Established in 2001, VillageReach develops and improves logistics systems that optimize performance at the point of service. This is also known as the "last mile" of medical care, where infrastructure and resource constraints typically present the greatest barriers. VillageReach systems are now measurably improving outcomes for women and children in sub-Saharan Africa.

BARR ENGAGEMENT

In 2012, Barr provided \$1.5 million over three years for VillageReach to develop and launch an innovative certificate-level training program for 150 Pharmacy Assistants with the Malawi College of Health Sciences. At the conclusion of their training, these Pharmacy Assistants will be deployed to rural public health clinics in districts throughout Malawi, where they will improve access to and availability of essential medicines. This represents 25% of rural public health posts in the country.

- 1,200 lives saved
- Improved pharmaceutical human resource capacity in Malawi's public health sector (150 Pharmacy Assistants trained and deployed to 150 rural health facilities)
- Improved functioning of health facility drug distribution (reduction in incidents of stock-outs of essential medicines)
- Serves as a model for roll-out to complete training of 450 additional Pharmacy Assistants





Ester Kantwela, a Pharmacy Assistant trainee in Malawi during her practical assignment at Salima District Hospital Photo credit: Village Reach staff

PROGRESS TO DATE

In the first year, our partners have

- Enhanced the Pharmacy Assistant curriculum in collaboration with Malawi College of Health Science and University of Washington's Global Medicines Program to emphasize practical learning
- Identified 12 districts and sites for Pharmacy Assistant placements and developed practical training support tools
- Recruited and selected the first cohort of 50 Pharmacy Assistants, who began their training in March, 2013
- Deployed 25 Pharmacy Assistants in 12 practicum sites at district hospitals to undergo five months of practical training

- Secured new donor investments for 60 additional Pharmacy Assistant trainees
- Designed an evaluation to determine potential impact of this supply chain strengthening program on morbidity and mortality due to malaria, pneumonia, and diarrhea among children under five years of age

66 We have 640 health centers in the country with no trained pharmacy staff to handle issues of drugs and medical supplies management. **99**

MR. GODFREY KADEWELE, DEPUTY DIRECTOR,
 PHARMACEUTICAL SERVICES AT THE MINISTRY OF HEALTH,
 GOVERNMENT OF MALAWI



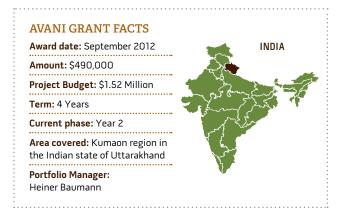
PROFILES IN

Sustainable Agriculture

- AVANI India 24
- FAIR TRADE USA Uganda 26
 - KICKSTART Kenya 28
 - MERCY CORP Haiti 30
- ONE ACRE FUND Kenya, Rwanda, Burundi 32
 - OXFAM Haiti 34
- **RELIEF SOCIETY OF TIGRAY** Tigray, Ethiopia 36
 - **ROOT CAPITAL** Mexico, Caribbean, 38 Central America, South America, East Africa & West Africa
 - ROOT CAPITAL Haiti 40

In East Africa and Haiti, growing populations, increased pressures on the land, and outdated farming techniques have led to significant degradation of natural resources. In Africa, 65% of the labor force is engaged in agricultural production, though the sector is not as productive as it must be to drive economic growth and reduce dependence on food aid. In addition to the uncertainties introduced by climate change, smallholder farmers are also constrained by limited access to finance and markets. Barr Foundation has supported initiatives in India, East Africa, and Haiti that improve crop yields, offer financing to smallholder farmers, provide access to export markets, and rehabilitate denuded lands.

Avani



PROBLEM

A major problem for rural poor smallholder farmers is the lack of opportunities to generate income. The Kumaon region in the Indian state of Uttarakhand is remote and underdeveloped, yet it is home to 3.6 million people. Most rely on farming as their sole source of income. Population growth and the negative effects of climate change have made it increasingly difficult for families to sustain themselves. As a result, men typically migrate to urban areas in search of wage labor, leaving women in the village to raise children and manage farms.

OPPORTUNITY

By advancing women-centered, environmentally sustainable, economic initiatives in rural communities, these dynamics can change. If supported adequately, people in the rural mountain communities of India's Kumaon region can manufacture high-end, all-natural products. Using resources they already have ready access to, including local plants and trees, wool from Tibet, and traditional skills, it is possible for them to produce valuable finished nonperishable goods, provide access to markets, and maintain local ownership of these small and growing enterprises. By capitalizing on the growing market in India and beyond for all-natural products, women and families of the Kumaon region can significantly increase their livelihoods, meaning in turn that they can afford to invest in health care and education.

OUR PARTNER

In 1997, Avani began as the Himalayan Chapter of Barefoot College. In 1999, Avani was registered as an independent organization and continues its work in the Kumaon Region of the Central Himalayas. Its mission is to help sustain rural lifestyles by creating opportunities for economic gain while conserving and enhancing the local resource base. Over the last 15 years, Avani has developed an all-natural handmade silk and wool textile production enterprise that is creating income-generating opportunities for mostly women-headed households.

BARR ENGAGEMENT

Barr provided Avani with a two-year grant of \$490,000 to expand its organic hand-made textiles business, launch new product lines, build storage and production facilities, install machines, and help train other textile units in the use of Avani's natural dyes. This will enable Avani to produce new product lines, including natural dyes, art supplies, wood stains, and soap nut powder.

- Sustainable local employment created for 2,400 community members, primarily economically vulnerable rural women from Other Backward Classes and Scheduled Tribes (Central Government of India classifications)
- Empowerment of rural women through employment opportunities, business and/or bank account ownership, skills development, and improved socioeconomic status
- Environmental and cultural stewardship through land rehabilitation, organic agricultural production, and the preservation of traditional skills





Left and top right: Avani Program Participant Chandra Bora in Chankana village is applying her newly learned weaving skills to prepare the warp for production of high quality all-natural handmade shawls in her village Photo credit: Heiner Baumann

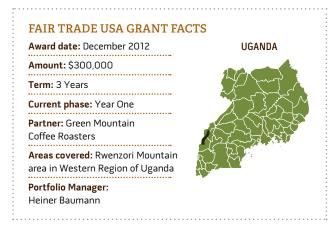
Bottom right: Rashmi Bharti, Co-founder of Avani Photo credit: Heiner Baumann

PROGRESS TO DATE

- Machinery purchased and installed, new looms constructed, and nurseries partially completed
- 60 farmers started cultivation of dye yielding plants (indigo, madder, harada, soap nut)
- 58 program participants, predominantly from marginalized castes, trained in traditional weaving or spinning or silk rearing and have started to earn income
- \$31,000 earned over six months in local wages and salaries
- 50 rural women participants opened bank accounts
- Three acres of wasteland rehabilitated and 350 trees planted

66 Avani provides a new set of eyes on the resources, skills, and earning potential hidden in rural places like the Himalayas. It helps rural women build businesses out of traditional practices like weaving, and it links their products to urban markets. Economically vulnerable women and girls build skills and enhance their incomes. And urban consumer can link to, and invest in rural traditions through their purchases of fashionable, eco-friendly goods.

Fair Trade USA



PROBLEM

In Uganda, most smallholder farmers producing coffee for the global commodities market struggle to survive. While specialty coffee is valuable, farmers face challenges to consistently produce quality products. The majority lack the capacity, resources, and the direct market access that would allow them to capture a reasonable portion of the value they create. As a result of low profits, many of the coffee farmers replaced coffee cultivation with other crops that require more sun than coffee bushes, which grow optimally in the shade of large trees. Consequently, the removal of shade trees has intensified and soil erosion has increased. This is particularly acute in the Rwenzori Mountains.

OPPORTUNITY

With the help of technical experts from one of Africa's leading independent family coffee businesses and the enthusiastic support of the King and Queen of the Rwenzori Mountains, the certification and market access capacities of Fair Trade can help address quality consistency issues and help local farmers meet Fair Trade standards. As a result, farmers can increase the quality and quantity of their coffee production and be protected from inequitable trade.

OUR PARTNER

Launched in 1998, Fair Trade USA (FTUSA) is the leading nonprofit, third party certifier and promoter of Fair Trade Certified products in the United States. FTUSA enables sustainable development and community empowerment by cultivating a more equitable global trade model that benefits farmers, workers, consumers, industry, and the environment. FTUSA employs 65 full-time staff in addition to a strong network of NGO service partners around the world.

BARR ENGAGEMENT

In 2012, Barr approved a \$300,000 grant over three years to bring the economic, social, and environmental benefits of Fair Trade certification, capacity building, and market linkages to 4,000 small holder coffee farmers in the Rwenzururu Region in western Uganda to achieve the following outcomes.

- Increases in coffee production and higher prices from better quality coffee will increase individual farm income from coffee by at least 80% by 2015
- Fair Trade Certification will allow farmer organizations to earn an extra \$0.20 per pound in Fair Trade premiums for investment in community development projects of their choosing; this will generate an estimated \$640,000 in 2015 alone
- By 2015, an estimated 15,000 acres of existing coffee fields will come under more sustainable farming practices, as required by Fair Trade standards for continued certification; this means protected forests and higher soil fertility
- At least 60% of participating farmers will be women, trained and organized under Fair Trade standards; anticipated income gains will contribute to the economic independence of female farmers
- Quality improvement efforts will contribute to improved perception of Ugandan coffee





Visual inspection of new quality coffee from the Mountains of the Moon in the Rwenzururu Region Photo credit: Heiner Baumann

PROGRESS TO DATE

- Fair Trade identified four producer organizations (representing 4,250 Rwenzori farmers) to participate
- 85 trainers and 57 farmers have been trained on improving coffee quality and productivity, and the farms used will be demonstration plots for other coffee farmers
- Monthly trainings for over 1,950 farmers took place from April to September 2013 on soil and water conservation techniques, coffee disease and pest management, and coffee harvesting techniques
- A third party impact measurement group has been hired. Mobile-based technology will be used to capture household impact and other key metrics throughout the project duration. In March and April 2013, 160 participants took a baseline survey on socio-economic data, including household income from coffee.

66 Most small-scale family farmers live in remote locations and lack access to credit so they are vulnerable to middlemen who offer cash for their coffee at a fraction of its value. **99** — PAUL RICE, PRESIDENT AND CEO, FAIR TRADE USA

KickStart

KICKSTART GRANT FACTS

Award date: September 2011

Amount: \$1,017,273

Term: 2 Years

Current phase: Completed

Area covered: Mt. Kenya and the Aberdare Mountains in West Aberdare Region, the Mau Escarpment in the Rift Valley Region and Mt. Elgon in the Western Region of Kenya Portfolio Manager: KENYA

PROBLEM

Heiner Baumann

Over 70% of the poor in Africa are smallholder rural farmers. Many have limited or no access to critical agricultural inputs such as water and fertilizer. This severely limits their ability to feed their families adequately or to educate their children. The combined pressures of population growth, large-scale deforestation, and climate change also contribute to a vicious cycle of degraded, increasingly unproductive lands and compromised aquifers.

OPPORTUNITY

Irrigation technologies for smallholder farmers enable them to transition from rain-dependent subsistence agriculture to year-round cultivation of higher-value crops. Farmers can then adequately feed their families and also sell their surplus for a significant profit, thereby moving families out of poverty. Incorporating sustainable water management practices is also essential to restore denuded lands and compromised aquifers.

OUR PARTNER

KickStart International, Inc. (formerly ApproTEC) was founded in 1991 to design and develop technologies for entrepreneurs to establish and run profitable businesses that permanently lift them out of poverty. KickStart has successfully provided farmers with access to very low-cost agricultural water pumps that become essential to their survival and enable them to secure their livelihoods. KickStart's MoneyMaker human-powered irrigation pumps are an irrigation solution with limited environmental impact that can quickly enable very poor farming families to access water and grow cash crops year round, including during times of limited or variable rainfall. Since 1998, more than 230,000 MoneyMaker pumps have been sold across Sub-Saharan Africa.

BARR ENGAGEMENT

Barr provided \$1,017,273 over two years to demonstrate the value of low-cost irrigation technologies and strengthen a scalable business model that supports agricultural entrepreneurship and increases rural household income. The major components of the project include

- Promotion of the MoneyMaker irrigation pumps
- Increased access to pumps for "Base of Pyramid" farmers
- Empowerment of female farming entrepreneurs
- Finalizing development of a "Deep-Lift Pump"

- Increased income for 5,300 smallholder farmers, who generated \$8.1 million in new profits over three years, lifting 22,500 individuals out of poverty
- Finalization of Deep-Lift Pump design and 100 Deep-Lift Pumps ready for sale in a market test
- Increased female ownership of MoneyMaker pumps from 11% to 22% of new owners, leading to establishment of women-led, small-scale family farm businesses
- Increased access to irrigation technology by farmers from income strata lower than current KickStart customers through introduction of the Mobile Layaway product
- Indirect impacts include
 - 4,000+ new jobs
 - Improvement in gender equity
 - Accelerated adoption of mobile financial services
 - 6,750 more children in attendance at schools
 - A wide range of environmental benefits





Top left: Regina saved to buy a pump through KickStart's Mobile Layaway program and now sells fruits and vegetables from her farm directly to her neighbors to support her growing family — Nakuru, Kenya

Top right: Benson and Winnie expanded their farm with the Money Maker Hip Pump, increasing the number of tree seedlings they grow from 2,000 to 30,000 in just one year - Rift Valley, Kenya

Bottom right: Two women use KickStart's Money Maker Hip Pump to irrigate cabbages in Kenya Photo credits: KickStart

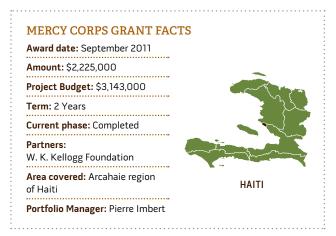
PROGRESS TO DATE

To date, outcomes include the following

- 18,000 people have been lifted out of poverty
- 4,071 MoneyMaker pumps were sold in the Barr project areas (Western, Rift Valley, and West Aberdares)
- 3,500 family businesses and 3,200 jobs created with \$3 million in new profits and wages generated annually
- 5,200 more children are now attending school or improved schools
- 3,200 farmers growing tree seedlings with 1.5 million new tree seedlings planted

66 By enabling farmers to access water year-round with KickStart's MoneyMaker pumps, KickStart not only empowers farmers to increase their crop production and incomes, but also enables them to build resilience to the effects of climate change and increasingly variable natural rain patterns. **99** — MARTIN FISHER, FOUNDER OF KICKSTART

Mercy Corps



PROBLEM

Smallholder farmers in Haiti face many challenges, and external shocks such as severe hurricanes, floods, and earthquakes have made their livelihoods even more tenuous. Additionally, widespread use of outdated, environmentally destructive farming methods has accelerated depletion of arable lands in nearly all of Haiti's watersheds. The country's forest coverage now stands at only 2%. These factors combine to make it nearly impossible for smallholder farmers to generate sustainable livelihoods.

OPPORTUNITY

Mercy Corps' solution to breaking the vicious cycle of poverty and environmental degradation in rural Haiti focuses on strengthening local capacity to implement sustainable farming practices and energy efficient technologies in order to increase resiliency and improve the lives of farming families.

OUR PARTNER

Mercy Corps was founded in 1979 and has been active in over 100 countries around the world providing humanitarian services and leading development initiatives that benefit 19 million people each year.

BARR ENGAGEMENT

Barr Global provided \$2,225,000 over two years to Mercy Corps to support its "Vie, Te & Eneji" ("Life, Land & Energy") program. The initial phase of this work began in two farming communities. It focused on restoring parts of the Arcahaie/Matheux watershed, introducing new farming techniques and sustainable natural resources management practices and generating new opportunities to improve livelihoods with the production and sale of high-value crops.

EXPECTED OUTCOMES

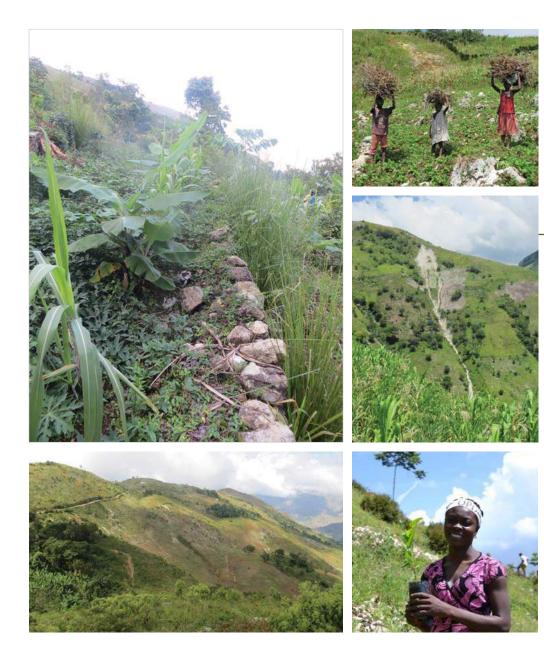
- 600 families double their income
- 600 hectares of land rehabilitated with soil conservation and tree planting and on track to sequester 12,060 tons of carbon dioxide
- 75% increase in soil retention on agroforestry plots
- 400 families (2,000 individuals) gain improved access to clean energy technologies
- Model to be refined, scaled up, and replicated elsewhere

PROGRESS TO DATE

Mercy Corps is reaching the end of the first two-year phase of the program. Despite recurring challenges to Haitian smallholder farmers who have experienced drought and successive hurricanes, notable accomplishments include

- 927 farmers gained \$218 or more of additional income through short-term employment in soil conservation activities and tree nurseries
- Over 618,930 meters of mechanical soil conservation structures built in gardens
- Over 9,298 square meters of ravine stabilization structures built
- 164,960 fruit and timber trees produced by 19 local tree nurseries
- 944 agroforestry parcels established through the planting of 209,000 trees
- 190 families adopted clean energy technologies introduced by the project
- 927 families are more food secure through crop diversification
- Over 450 farmers invested in high value crops
- 91 acres (38 hectares) converted into sustainable fuel wood forests





Top left: Lower side of stone walls are reinforced with deep root sturdy grasses that keep stone walls in place, fill in gaps in between stones, and increase water storage in soil; grasses can be used for animal fodder and roof thatching materials. Upper side of stone wall is used for planting new high value cash crops such as bananas, papayas, congo peas, pineapples and sugarcane

Bottom left: Mechanical soil conservation structures (note horizontal stone walls in distance) prevent soil erosion in Sibase program area

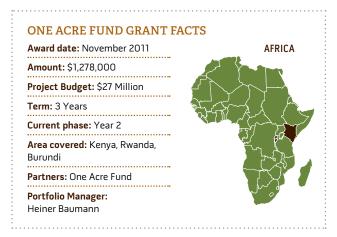
Top right: Declining soil fertility is closely linked with the necessary collection of biomass for cooking – these children have collected brushes for fuel as trees have already been cut

Middle right: After vegetation has been removed and soil has washed away, ravines and gullies begin to form Photo credits: Heiner Baumann

Bottom right: Member of Agroforestry Brigade ready to plant a tree Photo credit: Liz Hummer, Mercy Corps

66 VTE is seeking the create a scaleable, locally-led and cost-effective model for economically driven natural resource management practices that can break the cycle of poverty in rural Haiti by rehabilitating land and diversifying livelihoods. **99** — ELIZABETH SIPPLE, PROGRAM MANAGER, VIE, TE & ENEJI

One Acre Fund



PROBLEM

Most of Africa's poor are smallholder farmers, living in rural areas with limited access to improved seed, high-quality fertilizer, training, or markets. As a result, yields are low and poverty persists. Degradation of environments and a changing climate make life even more challenging. Droughts have grown more frequent and severe, directly impacting livelihoods, health, and education. Additionally, less than 20% of farm families in East Africa have in-home electricity, forcing them to rely on costly kerosene and flashlights.

OPPORTUNITY

Restoring degraded lands through tree planting, creating access to more reliable, renewable energy sources, introducing drought-resistant crops and rain-index insurance, and increasing access to reliable low-cost solar lighting are all proven methods for improving livelihoods and quality of life. While traditional reforestation efforts rely on specialized tree nurseries and dedicated public lands, an alternative strategy is for farmers to plant tree seeds to reforest their land, contribute to the local wood supply, and prevent soil erosion.

OUR PARTNER

Launched in Kenya in 2006, One Acre Fund works with 135,000 farmers in Kenya, Rwanda, Burundi, and Tanzania. On average, these families double profits on every planted acre. One Acre Fund envisions a future where every farm family has the knowledge, materials, and support necessary to satisfy basic needs. The organization provides farmers with financing, seed and fertilizer, training, and post-harvest market support. One Acre Fund also delivers climate resilience and mitigation interventions, such as tree seeds, rain index insurance, and solar lighting.

BARR ENGAGEMENT

In 2011, Barr provided One Acre Fund a three-year \$1,278,000 grant to enhance its agricultural development model to support efforts to improve the livelihoods of smallholder farmers in Kenya and Rwanda by helping them adapt and prepare for climate change and providing them with access to solar lighting.

- 8,000 households gain access to solar lighting, reducing consumption of kerosene and improving light quality
- \$43 of savings per family per year and 4,082 tons of CO2 emissions avoided per year from reduced kerosene use
- 90,000 One Acre Fund farmers have rain index insurance
- Three million trees planted and cultivated over five years, sequestering 40,900 tons of carbon and providing participating farmers with at least \$250 profit after five years
- One Acre Fund model and effective practices shared at international forums





Top: Morgan is the son of a farmer in Bungoma District, Kenya, who purchased a solar lantern alongside agricultural inputs from One Acre Fund Photo credit: Marcus Bleasdale/VII.

Bottom: A farmer in Rwanda, standing in front of her first maize harvest with One Acre Fund and the largest yield of her life Photo credit: Stephanie Hanson, One Acre Fund

PROGRESS TO DATE

- Over 30,000 households gained access to solar lighting and are projected on track to double sales of more than 56,000 solar lights
- 60,000 farm families achieved food security by diversifying crops and planting tree nurseries
- 70,000 families protected through weather insurance
- 1.69 million trees planted by June 2012, with projections of up to 4.79 million trees planted by 2014
- \$120 of average incremental profits earned each year by each farm family

66 Rural farm families make up one of the most vulnerable populations on the planet. They rely fully on their environments for survival, yet in the face of climate change, their environments are rapidly deteriorating. One Acre Fund is facing this global humanitarian challenge head-on: we are working to place critical tools and support into the hands of rural farmers, enabling them to increase their resilience against climate change and secure the long-term sustainability of their livelihoods.

Oxfam



PROBLEM

Haiti is one of the world's poorest and most food insecure countries. Seventy-two per cent of Haitians survive on less than \$2 per day. As recently as the 1960s, agriculture was the backbone of Haiti's economy and Haiti was a net exporter of agricultural products; the sector accounted for 50% of its GDP. Today, however, Haiti produces only 25% of its own food. The decline of rice production in the Artibonite Valley is one example. Less than 20% of the rice consumed in Haiti – a staple food – is produced locally. Reliance on imported rice makes the whole country vulnerable to supply and price shocks and negatively impacts the livelihoods of rice farmers. Several factors contributed to this situation, including reduction in productivity.

OPPORTUNITY

The System of Rice Intensification (SRI), an emerging rice cultivation technique, typically results in more than a 50% increase in yields while simultaneously reducing input costs and improving product quality. The result is a significant improvement in incomes for farmers. Smallholder farmers are eager to adopt the techniques, while the government of Haiti has also indicated that increasing cultivation and consumption of locallygrown rice is a top priority.

OUR PARTNER

Oxfam America is a global relief and development organization headquartered in Boston. Together with partners around the world, Oxfam works to save lives, develop long-term solutions to poverty and hunger, and campaign for social change. Oxfam has maintained a presence in Haiti since 1978 but significantly scaled up its activities in response to the humanitarian crisis caused by the 2010 earthquake.

BARR ENGAGEMENT

In 2012, Barr provided \$421,320 over two years for Oxfam America to introduce SRI and improvements to the rice value chain with two farmers' associations in the Artibonite Valley (Asyasyon Irigan Lyankou-Latibonit/ AILA and Mouvement d'Aide aux Femmes Liancourt-Payen de la Commune de Verrettes/ MAFLPV, which is a women-only association). The initiative's objective is to increase the income of smallholder farmers in the Artibonite Valley by improving production, processing, sales, and marketing of locally-grown rice.

EXPECTED OUTCOMES

- 75% increase in income for 150 farmers and at least 20% income increase for 575 farmers through production and sale of better quality rice products and reduction in production costs and post-harvest losses
- Reduced dependency on water and chemical agricultural products for rice cultivation
- Significant reduction in methane gas emissions
- 50% reduction in fertilizer use, including reduced use of environmentally harmful pesticides and herbicides
- Capacities and structures of farmers' associations strengthened to support farmers' production, processing, and marketing

PROGRESS TO DATE

One year into this project, Oxfam has reported tangible progress toward the expected outcomes, even as the initial uptake of SRI was lower than expected. The following results are being reported.





Local farmer begins to process the recent harvest of rice grown with SRI practices, introduced by Oxfam America Photo credit: Anna Fawcus / Oxfam America

- 141 farmers who took up SRI crop management practices more than doubled their harvest yield during the first cropping season in comparison to previous years
- SRI farmers had a significant reduction of rice production cost as farmers used fewer seeds, less fertilizer, and less water
- Increased collaboration among local partners, including regional agriculture ministry and other value chain stakeholders
- Local implementing partners AILA and MAFLPV are responding to skills training, applying them to strengthen their organizational and managerial capacities

66 Where Oxfam intervened [with SRI], the yields have been greater — up to seven tons per hectare. Previously, we were getting three to four tons. **99**

 MARIE MELISENA ROBERT, PRESIDENT AND FOUNDER OF MAFLPV

Relief Society of Tigray



PROBLEM

Ethiopians rely heavily on farming and other agricultural activities for their livelihoods. A growing population, increased pressure on the land, and outdated farming techniques have led to significant degradation of an already depleted ecosystem. This has contributed to declining agricultural productivity, widespread food insecurity, and poverty.

OPPORTUNITY

A promising solution is to train and support local communities to restore and protect the ecosystems upon which their livelihoods depend. Additionally, improving farming techniques and crops for increased productivity, value, diversity, and climate resilience is essential.

OUR PARTNER

The Relief Society of Tigray (REST) is an Ethiopian nongovernmental organization (NGO) founded in 1978. REST's vision is to combat the root causes of poverty and promote self-reliance through community-led sustainable development. REST has a track record of leading effective development projects ranging from natural resource management to community health programs.

BARR ENGAGEMENT

Barr provided \$876,224 over three years to REST to significantly and sustainably reduce the number of food insecure households, with special attention and support given to female-headed households. With this grant, REST will increase and diversify farm and household food production and incomes while reducing demands on natural resources and restoring the Bete Gabriel watershed.

EXPECTED OUTCOMES

- Restore and protect 2,157 hectares of Bete Gabriel watershed and its natural resources
- Reduce soil erosion by 70% and increase vegetation cover by 60%
- Increase average yield of staple crops by 40% per hectare
- Reduce food aid recipients from 3,210 to zero
- Increase income of targeted households by 50%

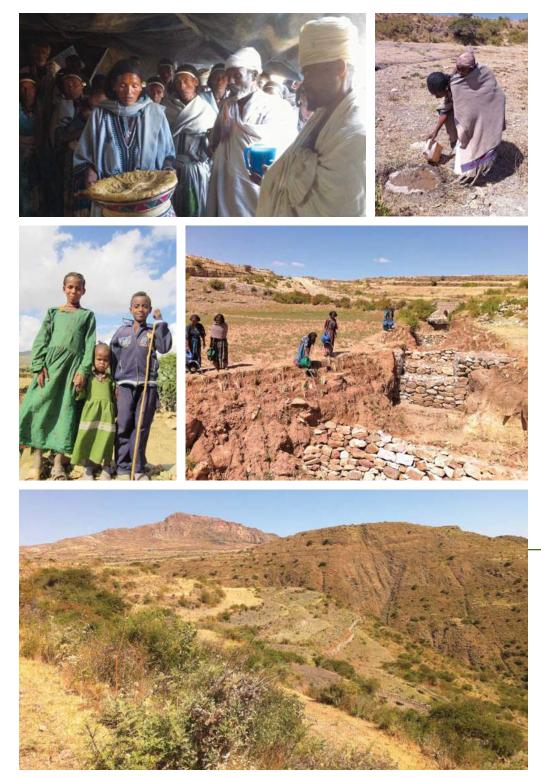
PROGRESS TO DATE

- Over 3,200 community members (52% of whom were female) participated in the construction of 119 km of catchment treatment works (such as terraces and trench and stone bunds – essentially, embankments) covering about 140 hectares, and in the treatment and reclamation of 2.25 km of gully in the watershed, improving soil and water conservation
- 36 percolation channels and 270 deep tranches completed, involving the participation of more than 1,100 community members, male, female, and the youth
- Horticultural development strengthened through introduction of organic fertilizers and offering farmers improved vegetable, fruit, and garlic seeds and sweet potato cuttings
- Over 130 community members trained in new types of crop development
- 92,000 tree seedlings planted on hillsides and farmland covering about 300 hectares

66 Tigray's food insecurity is primarily a function of severe environmental degradation brought about by the increasing pressure of population and the overuse of land. **99**

— PROPOSAL TO BARR FOUNDATION





Top left: Preparing for the blessing and celebration upon reaching year one milestone in restoring the Bete Gabriel watershed

Top right: Watering recently planted fruit and timber trees in upper part of Bete Gabriel watershed

Middle left: Children from Bete Gabriel

Middle right: Gully reclamation and soil stabilization work in upper Bete Gabriel watershed

Bottom: Soil conservation structures in upper part of Bete Gabriel watershed Photo credits: Heiner Baumann

Root Capital

ROOT CAPITAL GRANT FACTS

Award date: December, 2012

Amount: \$183,000

Project Budget: \$364,000

Term: 1 Year

Current phase: Completed Area covered: Mexico, Caribbean, Central America, South America, East Africa, West Africa

Portfolio Manager:

Heiner Baumann

PROBLEM

The absence of capital, limited financial literacy, and isolation from markets exclude the rural poor from the formal economy. As a result, many resort to survival measures such as illegal logging and slash-and-burn agriculture that stress the environment, contribute to global warming, and generate a cycle of ecological degradation and economic poverty. Small and growing businesses that aggregate hundreds or thousands of small-scale farmers can create economies of scale to provide market linkages, collective action, and training to transform smallholder farmers into environmental stewards. Yet they can still remain trapped in the gap between microfinance and commercial banks. Rural businesses that require loans ranging from \$25,000 to \$2 million are too large to access credit from microfinance institutions but considered too small and too risky to secure financing from commercial banks.

OPPORTUNITY

Financiers of farmer cooperatives can provide incentives and training for smallholder farmers on methods that improve yields in environmentally sustainable ways. These agricultural financiers can incorporate rigorous standards of environmental due diligence. They can also offer sustainable services and products (e.g., loans for clean technologies, agro-forestry farm renovation, or drought-tolerant seeds). In such ways, they serve as catalysts for wider adoption of environmentally sustainable practices by smallholder farmers.

OUR PARTNER

Boston-based Root Capital is a nonprofit pioneer in financing for grassroots businesses in rural areas of developing countries. Root Capital provides capital, financial management training, expertise in agricultural business, and industry networks. By supporting the growth of small and growing agricultural businesses that incentivize and train small-scale farmers on environmentally beneficial practices (such as soil and nutrient conservation, reforestation, and sustainable harvesting), Root Capital helps small-scale farmers adopt sustainable practices that can be applied to reach more of the world's 500 million smallholders.

BARR ENGAGEMENT

In 2012, Barr made a one-year grant of \$183,000 to help Root Capital develop its "Climate-Smart Agricultural Initiative." The purpose of this initiative is to enable Root Capital to 1) invest in small and growing businesses that meet rigorous environmental standards and 2) facilitate adoption of agriculture practices that improve livelihoods and preserve the environment.

EXPECTED OUTCOMES

- Environmental due diligence lending tools and methodologies developed across Root Capital's lending portfolio
- Application of the new "climate-smart" due diligence methodology and industry-specific guides allowing responsible financing of business in value chains other than coffee and cocoa, projected to include 81 small and growing businesses reaching 98,000 producers sustainably managing 289,000 hectares of land
- Introduction of climate-friendly services and products
- Indirect outcomes include
 - contribution to mainstreaming rigorous environmental due diligence and perspective in financing small and growing businesses in developing countries
 - contribution to discussions on appropriate, effective environmental impact assessment tools and methodologies among impact investors through publication of environmental impact assessment studies







Inspecting the pest on a green coffee bean Photo credit: Heiner Baumann

PROGRESS TO DATE

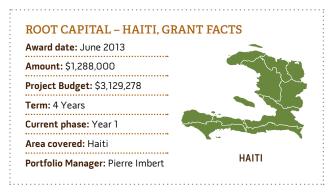
Root Capital has

- Launched its Environmental Scorecard and created 14 industry-specific due diligence guides
- Held field-based trainings in sustainable agriculture in Costa Rica and Peru
- Approved 34 new loans to rural small and growing businesses outside of the coffee and cocoa sectors, representing 25,000 producers sustainably managing 54,000 hectares of land
- Approved four loans for climate-smart services or products
- Documented environmental and social due diligence processes, with the intention to publish an issue brief
- Piloted and deployed an impact assessment module on agronomic practices and the environment in Guatemala

66 Across the developing world, the absence of capital, limited levels of financial literacy and isolation from viable markets exclude the rural poor from the formal economy. As a result, they often resort to survival measures, such as illegal logging and slash-and-burn agriculture that stress the natural environment, contribute to global warming, and generates a cycle of ecological degradation and economic poverty. **99**

— WILLY FOOTE, FOUNDER & CEO OF ROOT CAPITAL

Root Capital – Haiti



PROBLEM

In 2012, over 58% of Haitians were undernourished and 55% were living on less than \$1.25 a day. Until two decades ago, coffee was Haiti's principal farm export, representing as much as 70% of foreign agricultural sales. Since then, domestic and international factors have contributed to sharp declines in output. While the potential still remains for coffee to be a profitable crop for Haiti, there are challenges including lack of access to credit, poor infrastructure, limited market access, and a lack of government investment in the coffee sub-sector.

OPPORTUNITY

Access to credit, improved financial management capacity, and access to international markets will enable Haitian co-operatives of smallholder farmers to take advantage of a rapidly growing market segment of specialty coffees. Improved access to financing will increase export quantities of Haitian coffee (and cocoa), leading to positive impacts for farmers, cooperatives, and the environment.

OUR PARTNER

Root Capital is a nonprofit social investment fund based in Boston. Root Capital provides capital, delivers financial trainings, and strengthens market connections for small and growing agricultural businesses in rural areas of developing countries.

BARR ENGAGEMENT

In 2013, Barr provided a four-year \$1,288,000 grant for Root Capital's work with 20,000 smallholder Haitian farmers of coffee and cocoa. The project will focus on building credit management capacities that enable agribusiness to export more coffee and cocoa; developing partnerships with agronomic technical assistant providers that improve yields; promoting climate smart crop management as a means of reducing lending risk and building supply chain resiliency; building buyer-supplier relationships through better quality, certification, and "training + credit" opportunities; and conducting impact assessments of coffee and cocoa cooperatives to understand how farmer involvement in producer organizations can improve household income, gender equality, and environmental practices.

EXPECTED OUTCOMES

- 20,000 farmers increase improve yields by 20% and incomes by at least 70%
- Ten coffee and cocoa rural enterprises have a) greater access to working capital and increase their purchases of raw materials from farmers and b) operational and financial management capacity increased, such that they are able to reduce operating expenses by 10%
- Exportable produce increased by 50% and number of containers exported increased by 200%
- International network of buyers for Haitian coffee and cocoa established and minimum price set of \$3 per pound for Haitian coffee
- Environmental conditions in areas of small scale coffee and cocoa production improved, including 20,000 hectares under sustainable management through integrated agroforestry and intercropping, leading to improved tree coverage by 20%, rehabilitation, and improved agroforestry practices
- Female cooperative membership increased to 30% and female leadership promoted through targeted delivery of managerial training





CoopCab member offering high quality Haitian green coffee for sale Photo credit: Root Capital

PROGRESS TO DATE

Six months in to the project, Root Capital has successfully launched "Building Resilient Supply Chains" in Haiti.

66 Without access to capital and viable markets for their crops, millions of small-scale farmers in the developing world are trapped in a cycle of poverty. **99** – WILLY FOOTE, FOUNDER & CEO OF ROOT CAPITAL

PROFILES IN

Clean Energy

ACUMEN – India, Pakistan, Kenya, Tanzania, Nigeria 44

- ENVIROFIT Global 46
- **Ethiopian Ministry of Water and Energy** Amhara, Oromia, Tigray, 48 Southern Nations, Nationalities, and Peoples' Region (SNNPR)
 - Partners in Health Mirebelais, Haiti 50

Three billion people rely on solid fuels like wood, dung, coal and kerosene to meet basic household energy needs. These resources are neither harvested sustainably, nor burned efficiently, resulting in insufficient and expensive energy for the poor, severe health problems caused by indoor air pollution, and greenhouse gas emissions and deforestation. While new technologies have been developed, consumer use has remained low. Barr Foundation seeks to increase the uptake of affordable clean energy technology to improve the health and economic welfare of families and to improve their environmental footprint by reducing greenhouse gas emissions and deforestation.

Acumen

ACUMEN GRANT FACTS

Award date: May 2011

Amount: \$2 Million

Project Budget: \$6 Million (Energy Fund 2)

Term: 5 Years

Current phase: Year 3

Area covered: India, Pakistan, Kenya, Tanzania, Nigeria

Portfolio Manager:

Heiner Baumann



PROBLEM

To meet basic energy needs, three billion people globally rely on solid fuels such as biomass and coal. Additionally, one and a half billion people have no access to electricity. Of these people, 80% live in Sub-Saharan Africa or South Asia. Reliance on low-quality light and fuel sources is hazardous. Two million people die each year from diseases associated with indoor air pollution caused by use of solid fuels in unventilated kitchens and rooms (UNDP/WHO 2009).

OPPORTUNITY

Providing investment capital to small and growing businesses can provide appropriate clean energy products that meet the energy needs of low-income households and communities. Reliable affordable energy can be transformational. It means lighting in homes and schools, functioning health clinics and refrigeration equipment, pumps for irrigation, drinking water and sanitation, mechanized mills for milling grains, incomegenerating opportunities, cost savings from reduced fuel use, access to news and market prices, cleaner air, and reduced carbon emissions.

OUR PARTNER

Acumen raises charitable donations to invest "patient capital" in business models that deliver critical goods and services to the world's poor. Since 2001, Acumen has improved the lives of millions by investing in companies providing agricultural inputs, education, clean energy, healthcare services, housing, safe drinking water, and sanitation services to low-income customers in India, Pakistan, East Africa, West Africa, and Latin America. Acumen defines "patient capital" as a debt or equity investment in an early-stage social enterprise. The aim is not to seek high returns but to bridge the efficiency and scale of market-based approaches and the social impact of pure philanthropy. Acumen started investing in energy in 2007. Since then it has invested \$13.4 million in 12 companies, including d.light design, which makes high-quality, affordable solar lighting products, and Husk Power Systems, which brings electricity to remote villages in India's rice belt through rice-husk fueled bio-gasification.

BARR ENGAGEMENT

Barr provided Acumen with \$2,000,000 over five years to support its second energy fund to cover the sourcing, investment, and support of at least four innovative enterprises across Africa and South Asia that improve access to affordable and clean energy for poor households.

EXPECTED OUTCOMES

- Lives of three million people at the "base of the pyramid" significantly improved
- Nearly \$35 million in household savings on recurring expenditures for fuels
- Over 320,000 tons of CO2 emissions offset

Additionally, these enterprises will contribute to the following indirect outcomes:

- Breakthrough insights in new business models and approaches to fighting poverty
- Millions of dollars of additional capital raised to bring affordable products and services with social impact to previously underserved markets
- Energy industry transformed to include low income individuals

CLEAN ENERGY



Doing homework in the evening hours is made possible with a solar lamp from d. light design Photo credit: d. light design

PROGRESS TO DATE

- Investments made in eight companies in Acumen's Energy Portfolio
- Lives of 2.9 million low income individuals improved with new high quality, affordable, essential products
- 289,000 tons of CO2 emissions avoided and nearly \$80 million in household savings realized from declining use of solid fuels
- Insights about ways in which private sector organizations can deliver critical energy goods and services to the poor shared across Acumen and with the sector more broadly

66 At Acumen, we believe that we have a chance to build a world in which all human beings can live with dignity, freedom and choice. It starts with imagining that world and then working together. **99**

 JACQUELINE NOVOGRATZ, FOUNDER AND CEO OF ACUMEN FUND

Envirofit

ENVIROFIT GRANT FACTS

Award date: July 2012 Amount: \$1.5 Million

loan guarantee

Term: 7 Years

Current phase: Year 2

Area covered: Global

Partners: Shell Foundation

Portfolio Manager:

Heiner Baumann

PROBLEM

Nearly half of the world's population cook their daily meals by burning wood, charcoal, animal dung, or agricultural waste. Most of these meals are cooked on open fires or rudimentary inefficient stoves that release high levels of toxic emissions into people's homes. As a result, over four million people die each year from illnesses associated with indoor air pollution. In many regions, the gathering of wood also causes deforestation, leading to increased soil erosion, landslides, and habitat destruction. Increasing deforestation also means that wood gatherers, who are primarily women and children, must travel greater distances, an often dangerous task, to collect the firewood to feed their family.

OPPORTUNITY

While non-solid cooking fuels offer a cleaner option, these fuels are often unaffordable and inaccessible to people living at the base of the economic pyramid. The best interim solution is to introduce efficient clean cookstoves that significantly reduce biomass fuel consumption and emissions. In order for families to adopt new stoves at scale, cookstoves must be durable, affordable, readily available, and meet the demands of consumer preferences.

OUR PARTNER

Envirofit International is a social enterprise that designs, manufactures, and sells a line of high quality, durable, and affordable clean cookstoves. Envirofit was created to unite top tier clean energy research with consumerdriven product design to bring sustainable and scalable market-based solutions to emerging markets. Using a hub and spoke model Envirofit works with large distribution partners across the private, public, and social sectors to reach last mile entrepreneurs. At the time of Barr's investment, Envirofit was transitioning from a purely nonprofit organization to a for-profit social enterprise.

BARR ENGAGEMENT

In 2012, Barr approved a \$1,500,000 loan guarantee over seven years to enable Envirofit to access a commercial loan that, in addition to a second loan guarantee from Shell Foundation, will allow the business to refine and broaden its products, further develop the global markets for clean stoves, and bridge operations to financial sustainability.

EXPECTED OUTCOMES

- Envirofit transformed from a heavily subsidized, subscale nonprofit into a sustainable, self-funding social enterprise able to effectively and efficiently sell at scale affordable, durable, clean cookstoves around the globe
- More than 3.8 million clean cookstoves sold within five years
- Each stove will reduce toxic emissions by at least 60%, reduce fuel consumption by at least 50%, and endure for a minimum of five years
- Aggregate wood savings of 5.4 million tons and carbon savings of 6.4 million tons over five years

PROGRESS TO DATE

- Establishment of for-profit entity completed
- 207,716 clean stoves sold in 2012 (ahead of targets by 12%, with gross margins slightly below plan at 7%)
- 145,998 clean stoves sold in first nine months of 2013 with 95% of buyers being female
- Targets met for reducing toxic emissions and fuel consumption in individual stoves
- Wood savings of 1.2 million tons and carbon savings of 1.3 million tons over first nine months of 2013
- Expanded product line of clean cookstove models







Top: Switching from an open fire to an Envirofit G-3300, Lakshmi Bai in Maharashtra, India, saves 15% of her income a month for her family while improving her family's health and reducing her impact on the environment Photo credit: Envirofit

Bottom right: The chef and principal of the Ngelani Ranch Primary school in Machakos district, Kenya, stand in front of their new institutional stove, which saves them 70% in fuel use and two hours of cooking time and feeds more than 300 students five days a week Photo credit: Envirofit

Bottom left: Stoves on the move – Envirofit has sold more than 700,000 stoves to date Photo credit: Michael Benedikt

66 We envision a world in which everyone can enjoy durable, affordable, aspirational, wellengineered technology products that offer economic payback incentives, while improving health and the environment. **99** — ENVIROFIT VISION

Ministry of Water and Energy Government of Ethiopia

MOWE GRANT FACTS

Award date: December 2012

Amount: \$1.8 Million

Project Budget: \$32 Million

Term: 4 Years

Current phase: Year 1

Area covered: Amhara, Oromia,

Tigray, SNNPR regions in Ethiopia

Partners: United Nations Development Program, Governments of Norway and Ireland, Ethiopian private sector stove producers and distributors

Portfolio Manager: Heiner Baumann

PROBLEM

In Ethiopia, 84% of rural and 65% of urban households use firewood for cooking on mostly open fires or inefficient cookstoves. Many mothers and young children die needlessly each year from illnesses associated with indoor air pollution. Additionally, over the last century forest cover in Ethiopia has shrunk from 35% to only 3% today. Such extensive deforestation has set off a vicious cycle of drought and environmental decline. As tree cover vanishes, the land dries out and the soil erodes and becomes barren. This is a major cause of Ethiopia's periodic famines and increasing vulnerability to climate change.

OPPORTUNITY

The optimal long-term solution is for Ethiopian households to transition to non-solid cooking fuels. During that transition, however, significant health and environmental benefits can be derived from dramatically scaling the use of more efficient, cleaner cookstoves. The widespread use of clean cookstoves would also contribute to the Ethiopian government's stated goal of elevating the nation to middle-income country status by 2025, without increasing greenhouse gas emission and while building resilience of the economy and agricultural production to climate shocks.

OUR PARTNER

The Ministry of Water and Energy of Ethiopia manages the nation's water and energy resources. Its policies and strategies include promotion of efficient, clean cook stoves and development of alternatives to solid fuels as energy sources.

BARR ENGAGEMENT

In November 2012, Barr provided the Ministry of Water and Energy a \$1,800,000 grant over four years to support the dissemination and adoption up to 2016 of nine million improved cookstoves in Ethiopia through building relevant institutional capacity and developing a sustainable and vibrant market for improved cookstoves. The program has introduced a new market-driven and demand-responsive approach with a strong capacity building element that cuts across policy, regulatory, and operational issues. Barr contracted a local consultant and international experts to assist the Ministry of Water and Energy to identify improved cookstoves development and promotion barriers and to develop a national improved cookstoves support program document and a detailed implementation plan.

EXPECTED OUTCOMES

- Improved supply and increased demand, leading to at least nine million improved/clean cookstoves sold and used by end of 2016
- Consistent use of clean cookstoves, avoiding consumption of 2.1 tons of woody biomass per year per household for a total saving of 27 million tons and a reduction of 30-50% of typical firewood expenses and a total abatement potential of 14 million tons of carbon
- Widespread use of clean cookstoves, leading to a significant reduction in respiratory infections and complications from indoor air pollution
- Improved cookstove market, creating or maintaining 5,000 rural jobs and contributing to positioning Ethiopia to become the first African country to achieve double-digit economic growth with no increase in carbon emissions





Local Entrepreneurs in Addis Abeba producing and storing two types of improved cookstoves. Each significantly reduces biomass fuel consumption and carbon emissions per cooked meal Photo credit: Getu Shikur

PROGRESS TO DATE

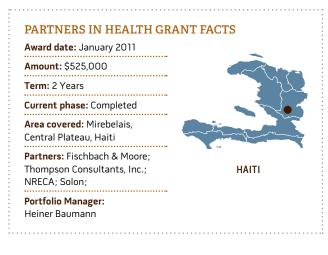
- Established Steering Committee and program management office within the Ministry of Water and Energy
- Hired staff and developed detailed implementation plan
- Raised additional funds for program from Governments of Norway and Ireland

66 Ethiopia has embarked on a path to achieving economic development in a sustainable way. **99**

— ETHIOPIA'S CLIMATE-RESILIENT GREEN ECONOMY (CRGE) STRATEGY

BARR FOUNDATION :: FROM LOCAL TO GLOBAL :: CLEAN ENERGY 49

Partners In Health



PROBLEM

Nearly 300,000 people died in Haiti's 2010 earthquake. Much of the country's infrastructure, hospitals, schools, businesses, and homes were destroyed. As Haiti rebuilds, it must also improve how it is built to better meet the country's needs. One critical need is electricity. Even before the earthquake, Haiti's power grid was only able to meet a fraction of electricity demand, with higher costs than in the US and with frequent power outages. In Haiti, buildings that require reliable electricity, such as hospitals, typically operate their own diesel generators as a main or secondary power source. This is costly as Haiti needs to import and distribute all fossil fuels. Diesel also produces toxic fumes, noise, and significant greenhouse gas emissions.

OPPORTUNITY

One approach to addressing Haiti's energy problem is to harness its abundant clean energy source: the sun. To do this most effectively also requires energy efficient buildings and for the public energy grid to allow for private energy entrepreneurs to sell new power into the public system.

OUR PARTNER

Partners In Health (PIH) was founded in 1987 to deliver high-quality health care in Haiti's mountainous Central Plateau region. Since then, PIH has expanded in Haiti and initiated health programs in disadvantaged regions around the world. PIH draws on the resources of leading medical and academic institutions and works with local organizations, national and regional governments, and other partners.

BARR ENGAGEMENT

In 2011, Barr approved a \$525,000 grant to design and implement a solar energy and linked battery storage system for University Hospital of Mirebalais, an innovative public teaching hospital in rural Haiti. When operating at full capacity, the hospital and its energy system will have six fully-equipped operating theaters and 300 beds, and it will serve at least 500 patients daily with high-quality comprehensive care.

EXPECTED OUTCOMES

- Ample and reliable energy provided to the newly-constructed public teaching hospital in Mirebalais, Haiti
- Annual operating costs reduced by an estimated \$250,000-\$375,000 in diesel fuel cost savings
- At least 273 metric tons of carbon emissions averted each year
- Largest hospital in the world that can be powered entirely by solar energy

PROGRESS TO DATE

- Innovative 300-bed national teaching hospital completed in December 2012
- Treatment of patients initiated in early 2013
- Solar energy system with 364 solar modules operating reliably and producing more electrical power than the hospital needs
- 454 MWh (Megawatt hours) produced as of November 2013
- 253 metric tons of carbon emissions averted since the system has been commissioned
- Excess energy fed back into Haiti's national grid, generating electrical power for the country
- Energy savings defray operating costs for the hospital



Top left: With 300 beds and six modern operating theaters, University Hospital is the largest solar-powered hospital in the world that produces more than 100 percent of its required energy during peak daylight hours Photo credit: Partners in Health

Top right: Detail of hospital roof Photo credit: Partners in Health

Bottom: Engineers from U.S.-based companies traveled to Haiti and trained six local electricians to install and maintain the system Photo credit: Partners in Health.

66 This hospital is the culmination of a dream that dates back a quarter-century and underlines our commitment to the country and people of Haiti, which is stronger than ever after the earthquake. **99** — PAUL FARMER, CO-FOUNDER, PARTNERS IN HEALTH



PROFILES IN

Exploration and Learning

- AID INDIA Tamil Nadu, India 54
- BAREFOOT COLLEGE Rajahastan State, India 56
 - EDUCATE! Uganda 58
 - RARE Global 60
 - UNIVERSITY OF MIAMI Haiti 62

The Exploration and Learning portfolio provides Barr with flexibility as new issues and areas for investment are considered and special opportunities for engagement are identified.

Aid India



PROBLEM

Even though access to schooling has greatly improved in India over recent decades, learning outcomes have not. In the southern state of Tamil Nadu, for example, 98% of children ages six to 13 were enrolled in school in 2011. Yet 47% of children in fifth grade could not read a simple story and 30% could not subtract two-digit numbers (ASER Report, 2010). One reason for this is limited accountability of teachers, principals, and government officials.

OPPORTUNITY

Out-of-school time classes with a focus on learning and strong parent engagement can be an effective intervention for improving learning outcomes and strengthening advocacy for improved quality of education in both government-run and private schools.

OUR PARTNER

Aid India was founded in 1991 as an independent nongovernmental organization with the mission to ensure every child in India receives a quality education. For its first ten years, Aid India designed and implemented quality improvement programs in primary and secondary education. In the last decade, through Aid India's primary initiative Eureka Child, it has also established community learning centers, from where it has deployed community tutors and developed ways to educate and mobilize local youth and parents as advocates for greater accountability and improved student outcomes.

BARR ENGAGEMENT

In 2011, Barr approved a three-year grant of \$962,000 to Aid India to demonstrate the feasibility and benefits of parent and community engagement in children's learning by building a high quality out-of-school time learning program in 1,000 villages in India.

EXPECTED OUTCOMES

- Improved learning outcomes for 60,000 children, including at least 15% absolute average increase in language, math, and science competencies for 1st to 8th standard students, and at least 15% increase in kindergartners ready for school
- Measurable increase in 75,000 parents' understanding of children's needs (measured through pre- and post-qualitative surveys), with more than 20% of parents actively engaged in children's education
- 3,210 jobs (tutors and parent engagement organizers) created in mostly rural villages, with total earnings of more than \$3 million over three years
- Eureka Child model adopted by other organizations

PROGRESS TO DATE

- Conducted after school classes and parental engagement programs in 675 villages, with 30,765 children enrolled
- Increased children's performance in math and language, including an increase from 5% to 81% of children able to read Tamil sentences, and an increase from 3% to 72% of children able to recognize threedigit numbers (versus gains of 3% to 52% and 1% to 35%, respectively, in control group)
- Created 1,903 jobs







Left: 6 year old girl in Aid India Eureka program learning the mathematical concept of place value

Top right: Charts like these that are put on walls in out-of-school Eureka classrooms allow uneducated parents to track their children's progress in acquiring skills

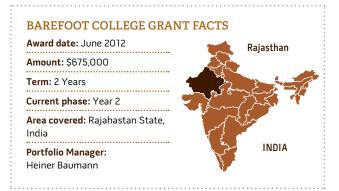
Bottom right: 7 year old girl in Eureka out-of-school class is demonstrating her newly learned skills of writing full paragraphs Photo credit: Heiner Baumann

- Reorganized its program implementation and fundraising strategy after challenges imposed by Government of India. Key elements of this strategy include
 - Building on success of program in first two years by working with NGOs, training them on Aid India materials and methodologies, and increasing local ownership. While NGOs will implement the program, Aid India will provide training, monitoring, and evaluation to ensure focus on learning outcomes
 - In this academic year (2013-14), Aid India has already identified ten such organizations that have started implementing the program in about 200 villages. In the next two years, Aid India plans to work with 40 NGOs in 2,000 villages and reach 80,000 children

66 When I see my students reading confidently and doing math well, I believe that they will be able to escape from poverty and not suffer the way that I have.

 SOPHIA, A EUREKA CHILD TUTOR FROM POOVALUR VILLAGE, TRICHY DISTRICT.

Barefoot College



PROBLEM

Too many development projects leave the rural poor with no decision-making authority. If there is local input, it is from educated men with social standing. Women and those from marginalized castes are rountinely excluded. Similarly, rural communities often have limited or no access to new technologies. When such technologies and trainings are offered, young men are the first beneficiaries. Once these young men master new skills, most move to cities in search of greater opportunity, leaving their families and communities no better off.

OPPORTUNITY

An effective way to empower women and marginalized groups is to allow them to select the technologies that are most useful to train them on their use, maintenance, and applications. This tends to increase their own livelihoods and quality of life but also yields benefits to whole communities.

OUR PARTNER

Since 1971, Barefoot College has worked from its base in rural Rajasthan, India, training semi-literate and illiterate villagers to become skilled professionals, including solar engineers, health workers, teachers, architects, and masons. Barefoot College also facilitates access to national and international markets for local crafts. This model has been adopted and replicated in over 20 community-based organizations throughout India. With support from the Indian government, Barefoot College has also trained villagers from other countries. At the time of Barr's investment, these international scholars had solar electrified 45,000 houses in 1,081 villages in 64 countries. Rainwater harvesting technologies have spread to eight countries and 1,638 schools, providing clean water for 500,000 school children and collecting more than 1.4 billion liters of rainwater.

BARR ENGAGEMENT

In 2012, Barr approved a two-year grant of \$675,000 to increase Barefoot College's capacity to train female solar engineers and create adequate space for further vocational trainings. The grant also provided support for Barefoot College's night school to enhance measurement and evaluation capabilities and strengthen the College's network of affiliates.

EXPECTED OUTCOMES

- New training campus, including dormitory space, constructed by December 2013
- 160 women, mostly grandmothers from poor rural villages, trained as solar engineers each year and collectively solar electrifying at least 80,000 rural homes, leading to reduction of 26 million liters of kerosene use, cost savings of \$17 million, and the avoidance of 65,000 tons of carbon emissions
- Recommendations developed for improved effectiveness and financial sustainability of Barefoot Night Schools
- New data management and communication system allowing Barefoot College to collect data, measure, and evaluate programs and achievements from all villages where Barefoot Engineers are deployed
- Barefoot College network revitalized, helping affiliates share information and replicate successful practices and creating a more powerful collective voice for empowerment of rural poor, especially women





Top: 40 women, mostly grandmothers, from 10 countries are being trained as solar engineers in Tilonia, Rajasthan Photo credit: Heiner Baumann

Bottom: Children in Barefoot College Night Schools enjoying the presence of visitors Photo credit: Pat Brandes

PROGRESS TO DATE

- Construction in advanced stages of new training facility and dormitory for solar engineers, with training and dining facilities open for use as of September 2013
- A new class twice as large as any previous class has been enrolled as solar engineers; most are grandmothers
- Analysis of night schools completed and recommendations developed

• Barefoot College affiliates convened for a five-day workshop, during which they exchanged ideas and practices, identified ways to better communicate and collaborate, and developed a joint \$2.5 million proposal to the Government of India to amplify their collective voice and work

Listen to the people on the ground –
they have all the solutions in the world.
BUNKER ROY, FOUNDER OF BAREFOOT COLLEGE

Educate!

EDUCATE! GRANT FACTS

Award dates: June, 2011 and March 2013

Amounts: \$100,000 & \$150,000

Terms: 1 Year; 2 Years

Initial grant (2011): Completed

Renewal grant (2013): Year 1 Area covered: Uganda

Portfolio Manager:

Heiner Baumann & Tanya Jones

AFRICA

PROBLEM

Uganda has the youngest population in the world; over 50% are under the age of 15. Uganda's young people face imposing challenges, including a youth unemployment rate of 83% and the highest youth poverty rate worldwide, with 94% living on less than \$2 a day. Yet the current education system in Uganda leaves young people unprepared to create and lead solutions to social problems or develop commercial enterprises.

OPPORTUNITY

Entrepreneurship and leadership development training can help prepare young people to create businesses that generate revenue, increase employment opportunities, and respond to many pernicious social problems facing their communities. Mentorship is a critical pathway in the process of developing students by instilling confidence in their ability to become change-makers and imparting the skill sets needed for them to accomplish their goals.

OUR PARTNER

Educate! works to transform education in Uganda so that, as a result of their education, young people can start businesses and improve their livelihoods. Educate! provides business and leadership training and experience starting business. Educate! teachers, who are all experienced entrepreneurs themselves, work with high school juniors and seniors. Their approach has gained national attention. In 2012, the Ugandan Ministry of Education incorporated the Educate! curriculum into the national A-level Entrepreneurship curriculum, which reaches 25,000 students annually. Educate! has proven itself to be a nimble organization that leverages valuable partnerships with international and local organizations and utilizes external expertise to drive its work forward. The organization is on an impressive growth trajectory since it placed its first staff on the ground five years ago. Currently, Educate! is working in 54 secondary schools with 7,000 students across Uganda. It aims to expand to 200 schools and 20,000 students in 2014.

BARR ENGAGEMENT

Barr Global provided two grants totaling \$250,000 to Educate! to build an internal monitoring and evaluation system and to launch an independent impact assessment of program implementation in 24 high schools in Uganda.

EXPECTED OUTCOMES

- Internal impact measurement system built and used to make program improvements and communicate impact externally
- Educate! program established in 30 new schools with 600-800 youth participating actively in the program, starting new businesses and/or community projects
- Program impacts of 30 new schools measured and used in an International Labor Organization's randomized controlled trial

PROGRESS TO DATE

- Monitoring and evaluation system established, enabling Educate! to begin systematically measuring the impact Educate! scholars have had in their communities, including job creation and revenue growth (with recent data indicating graduates earn 160% more than students starting the program)
- Educatel's strategy and theory of change refined based on findings from the monitoring and evaluation system, putting Educate! on track for significant growth and greater impact in 2014





Educate! scholars at a meeting to discuss business ideas in their student business club Photo credit: Educate!

66 Educate! aspires to be the Grameen Bank of the education to employment space and believes it can transform the education system in Uganda, and beyond, to truly prepare all young people to take leadership initiative, create small businesses and improve their livelihoods. **99**

— BORIS BULAYEV, EXECUTIVE DIRECTOR OF EDUCATE!

Rare

RARE GRANT FACTS

Award date: June 2013 Amount: \$200,000 Project Budget: \$436,000 Term: 1 Year Current phase: Launch Area covered: Global Partners: The Nature Conservancy Portfolio Manager: Heiner Baumann



PROBLEM

Climate change threatens the wellbeing of communities in many ways, including livelihoods, food security, water resources, land use, and risk management. People are aware and concerned about climate change when it negatively impacts the ecosystems on which they depend. Protecting ecosystems and adapting to the changes within them reduces community vulnerability to climate change. While many locally-focused solutions exist that could be successfully adopted on a more global scale, they are often little known beyond their communities.

OPPORTUNITY

Globally-sourced contests can be used to help find, promote, and facilitate locally-driven solutions for enhancing resilience to climate change.

OUR PARTNER

Based in the United States, Rare is a global conservation organization that inspires change so people and nature thrive. Rare looks for proven conservation solutions and trains local leaders to inspire communities to adopt them and make them their own. Rare provides the tools and training that communities can use to shift from being resource users to natural asset managers. Rare partnered with The Nature Conservancy (TNC), a leading conservation organization, to leverage the knowledge and networks of TNC's 500 staff scientists and harness TNC's offices worldwide to incubate and test the ideas surfaced during their Solution Search contest.

BARR ENGAGEMENT

In June 2013, Barr approved a one-year grant of \$200,000 to support Rare's Solution Search contest, which they conducted in partnership with TNC. The focus of the 2013 contest is "Adapting to a Changing Climate." It aims to accelerate the replication of ecosystem-based adaptation strategies that improve social and ecological resilience to climate change. Solution Search supports effective solutions through monetary awards, totaling \$70,000, to seven contest winners.

The use of monetary prizes is restricted to expansion and/or replication of innovative adaptation strategies. Rare will also allocate its own organizational resources to test identified solutions (regardless of standing in the contest) at its program sites, along with authoring a white paper documenting lessons from replication of Solution Search innovations. All submissions, including those that do not earn awards, are featured on an open-access database to promote global knowledge sharing and discussion on effective adaptation strategies.

EXPECTED OUTCOMES

- Identification of effective community solutions that build resilience to climate change and that can be replicated in other geographies and shared globally via an open-access database
- Expand global awareness of climate change adaptation issues and bring attention to local organizations. Media engagement target: 150 million media impressions
- Replication and expansion of Solution Search solutions within Rare sites and among Solutions Search participants
- Demonstration of how conservation-focused organizations can become important contributors to advancing the field of climate change adaptation/resilience





Left: Documenting the plantain harvest at SOIL's experimental farm in Port-au-Prince, Haiti

Top right: Two girls participate in a SOIL Sakala tree planting day in Port-au-Prince, Haiti

Bottom right: Hot peppers grown in SOIL's EcoSan compost in Haiti (Konpòs Lakay is the Haitian Creole brand-name for SOIL's EcoSan compost.) Photo credits: SOIL

PROGRESS TO DATE

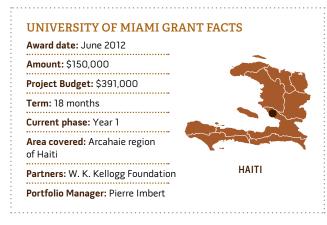
- 88 entries of locally-driven climate adaptation solutions received
- Ten finalists and seven prize winners with outstanding climate resilience solutions identified
- Initial promotion of participating organizations and their solutions through multiple media channels
- 11,000+ votes cast for the ten finalists
- Capacity-building workshop and Awards Ceremony held in October 2013

66 For too long the conservation community has focused on problems. But there are a lot of working solutions in remote parts of the planet. Local communities are the R&D labs of conservation. We have to find what's working and make it available where it's needed. **99**

— BRETT JENKS, PRESIDENT AND CEO, RARE

Sustainable Organic Integrated Livelihoods (SOIL) SOIL, one of the winners of the 2013 Rare Solution Search Contest, is dedicated to protecting soil resources, empowering communities, and transforming wastes into organic compost and resources in Haiti.

University of Miami School of Architecture



PROBLEM

Most recent development efforts in Haiti have been planned and executed with little or no community input or participation. As a result, knowledge and skills are not transferred, and local capacity does not improve. This limits the impacts of development efforts and threatens the sustainability of any benefits derived from them. Marginalization can lead to disengagement and undermine people's sense of efficacy and responsibility for their own future.

OPPORTUNITY

Deeper community engagement is essential for achieving a stronger and more sustainable Haiti. Such engagement will eventually strengthen local organizations and enable them to lead community development efforts and serve as change agents in their respective localities.

OUR PARTNER

The Center for Urban & Community Design (CUCD) at the University of Miami's School of Architecture (a national leader in sustainable urban design) was established in 1992 to respond to the social, economic, and physical aftermath of Hurricane Andrew. Since then, CUCD has engaged in community outreach work, fostering a collaborative interdisciplinary approach that supports the preservation, retro-fitting, and/or creation of environmentally responsible sustainable communities and buildings. Through community engagement, CUCD promotes a holistic approach to sustainable design. It facilitates constructive collaborations with nonprofits, government, citizen groups, public school systems, and professional associations, and it provides tools for sustainable design.

BARR ENGAGEMENT

In June 2013, Barr approved an 18-month grant of \$150,000 to the University of Miami's Center for Urban and Community Design to support the engagement of residents of the Arcahaie micro-region into a collective and participatory process to create a vision and plan for sustainable development of their communities.

EXPECTED OUTCOMES

- By the end of the participatory planning process, a vision and plan addressing the multiple concerns of the residents of Arcahaie will be produced
- Increased capacity of local participants to conduct comprehensive integrated planning and development efforts
- Participation by women in collective community processes and decision making increased





Residents writing down their ideas for Arcahaie future as part of a University of Miami-led participatory process to create a vision and plan for sustainable development of the region Photo credit: Guerda Nicolas

PROGRESS TO DATE

The University of Miami's School of Architecture's Center for Urban and Community Design has launched the Arcahaie Region Planning Initiative.

66 I am excited to participate in this project because it brings people together from different parts of Arcahaie to develop a vision for our community. Every action counts and every voice matters and that's a big difference from the past. **99**

- ZETTE, FEMALE PARTICIPANT FROM CORAIL REFLECTING ON WORKSHOP

Looking Back, Looking Forward



When we launched the Barr Global pilot in 2010, our aim was to improve the wellbeing of children and families in the Global South. We were open about the best ways to do this, and we used the pilot to explore what Barr's most constructive role might be. We hope that the grantee profiles on the preceding pages have offered insights and inspiration about what is possible, and that they encourage other funders to give these remarkable organizations a closer look.

The pilot answered many of the early questions we had about the potential for modest investment to generate substantial good. As we move beyond our pilot phase, we intend to continue learning from other foundations that have more experience, even as we are open to share with others who are new to this work. In that spirit, we have outlined some of the most important things we have learned. The first three are reflections on critical considerations for engagement in the Global South. The remaining six are reflections on some of the benefits and challenges of how we structured the Barr Global team and grantmaking during the pilot.

Women are a powerful lever for change

Observations in the field and many discussions with experts strengthened our belief that an explicit focus on gender disparities is critical to improving lives of women and children. From Living Goods agents in East Africa to rural grandmothers training as solar engineers at the Barefoot College in India, we witnessed how investments in women contributed to positive changes that had multiplying effects throughout their households and communities. Women are unquestionably a powerful lever of change. Going forward, we intend to support more initiatives that have an explicit focus on reducing gender inequity and increase opportunities for women and girls to build health, economic, social, educational, and other assets.

For the poor in the Global South, the effects of climate change are real and the need for remedies acute

In our work, we have observed that rural smallhold farmers in all our geographies are very aware of and focused on climate change. They are already living with its effects; fragile livelihoods are becoming even more vulnerable. While climate change has been a major focus of Barr's work in Boston and Massachusetts since 2010, in the coming years we will explore how climate resilience might serve as an overarching frame for our work in the Global South. Barr will continue to support communities to develop adaptations and support organizations that reduce, mitigate, and manage climate change risks, especially related to economic and ecosystem losses as well as negative impacts on food security, nutrition, and gender equality.

Population pressures cannot be ignored

From villagers in the highlands of Haiti who cultivate beans on the steepest and rockiest faces of their mountains to the increasing number of landless rural youth in northern Ethiopia, we have seen how population growth is increasing pressure on the land. Existing crop land is being split in ever smaller parcels; farmers are forced to cultivate areas considered unusable only a few years ago. Moreover, with no lands lying fallow and crop waste used for cooking or energy production, soils are depleted of vital nutrients. Going forward, it is clear we will need to continue investing in more sustainable practices. We are also mindful that educating girls has proven to be one of the most effective ways to delay marriage and to curb unchecked population growth.

Acting locally and globally brings credibility

As we started to explore climate-related projects internationally, we came to realize (from feedback from potential local partners) how valuable it was for the Barr Global team to be part of a foundation that is also investing significantly in U.S.-based climate efforts. While demand is high for ways to adapt and become more resilient to a changing climate, we observed that efforts to engage countries in the Global South in reducing emissions (to prevent more severe climate change in the future) often meet with resistance, particularly by governments. Focused on promoting economic development, it is understandable that governments in developing countries would resist pressure to forego the same technological advances that drove growth in more affluent countries, especially when many such countries have been reluctant to curb their own emissions. Since Barr has been acting locally on climate change, we could engage more credibly in conversations about global action.

Intermediaries can expand reach and capacity, but limit learning and control

Relying on intermediary organizations for some of our grantmaking allowed us to test alternatives to grantmaking, such as issuing debt and equity. This allowed us to support organizations we might not have otherwise, including for-profit social ventures that will eventually raise funds from capital markets. However, not having Barr staff directly engaged in these projects made it more difficult to learn and gain familiarity with the work since our partners conducted the site visits and due diligence. As a result, we were less familiar with the actors and the context in comparison to other projects where we managed all aspects of the grantmaking internally. We are a small team and certainly value intermediary partners as capacity extenders. Yet we are also cognizant of the drawbacks.

Innovation springs from diversity

Our decision to build a multi-country portfolio overseen by staff who travel widely allowed for important cross-fertilization among our projects. This broad exposure enabled Barr staff to make connections between and among our grantees and to share with them our growing awareness of relevant innovations in different geographies. We have found that operating in six different countries on three continents is manageable even for a small team based in the U.S.

On-the-ground people are irreplaceable

Having trusted people on the ground in our various geographies has been vital. These individuals became

indispensable interpreters of changing landscapes and complex relationships, especially with local organizations, be they NGOs or governments. Our work in Haiti benefited greatly from having one of our program staff on site in Haiti for the majority of his time. Conducting intensive site visits is an important part of due diligence before making grants. Yet, to effectively monitor and support grantees towards achieving desired impacts, on-the-ground presence is also critical. To effectively oversee the high-risk, potentially high-return national improved cookstove program in Ethiopia, for example, we have engaged a highly skilled Ethiopian consultant to provide ongoing support.

Partnering with governments can be high reward, but higher risk

Over the course of the pilot, we had opportunities to work with a range of partners, from small local organizations and social entrepreneurs to international NGOs and governments. In general, we found that, as the opportunity for scale and leverage increases, so too does complexity. Partnerships with governments and ministries can hold potential for scale and impact beyond that of more grassroots efforts. However, political considerations, turnover of government staff, competing priorities, and administrative hurdles all increase the risks that progress stalls.

Boston is strong and getting stronger as a hub for global giving

Our home base of Boston has proven to be a remarkably advantageous place from which to launch Barr's global program. During the pilot, we became increasingly aware of the breadth and depth of international development initiatives that are being supported from Boston, including by internationally-recognized educational institutions and hospitals, cutting-edge development organizations, and many generous individuals. We are grateful to the New England International Donors (NEID) network for convening Boston's international donor community and providing us with avenues to amplify and strengthen our work. We see the opportunity for more Boston-based philanthropists to engage in international grantmaking and to join in collective efforts to reduce the global inequity that is so injurious to us all.

Logic Models

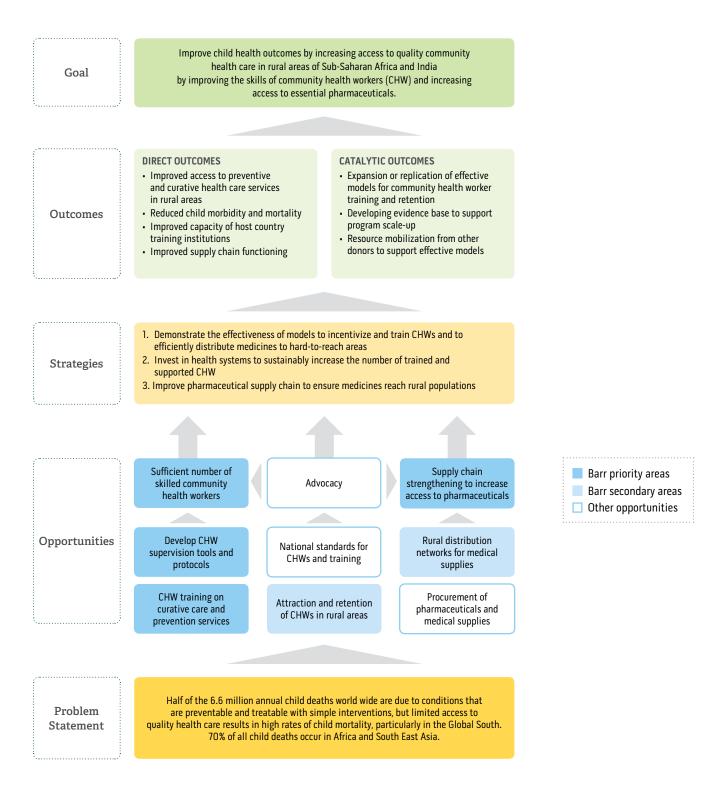
On the following pages are the logic models we developed for our three primary portfolios: sustainable agriculture, clean energy, and community health. These represent our best efforts to synthesize our research and lengthy discussions about the nature of the challenges, opportunities for addressing those challenges, and both observed and anticipated cause and effect relationships. Our research combined extensive readings, learning sessions with practitioners, issue experts, and other funders, and also our own first-hand observations from field trips.

Creating these logic models helped us clarify what strategies we intended to pursue, the most constructive roles we thought we might play, and how we expected our actions to contribute to impact. They also made clear the assumptions we would test and refine as part of our ongoing learning agenda.

Since our Learning and Exploration portfolio is not focused on a specific issue area or set of challenges and opportunities, we did not create a logic model for it.



COMMUNITY HEALTH LOGIC MODEL





SUSTAINABLE AGRICULTURE LOGIC MODEL

Improve the income and long-term welfare of smallholder farming households by helping them to improve productivity, access markets, and reduce the environmental risks they face by increasing their access to knowledge, skills, and tools needed to implement sustainable agriculture practices.

 DIRECT OUTCOMES

 • Increased household food production, income, and resilience

 • Improved water, soil, and vegetation health

 • Increased adoption of effective sustainable agriculture practices

 • Increased access to knowledge, tools, and farming inputs

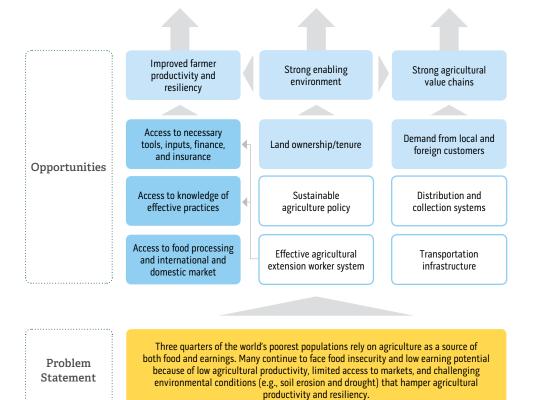
Strategies

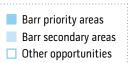
CATALYTIC OUTCOMES

- Expansion or replication of effective models to increase access to critical tools, inputs, and knowledge of sustainable agriculture practices
- Resource mobilization for effective models and practices

 Invest in organizations that have potential for impact, scale and sustainability to increase market access and adoption of income-generating sustainable agriculture practices
 Demonstrate effective models of watershed and environmental renewal and disseminate learnings to encourage replication and adoption by others

3. Leverage existing platforms to distribute agricultural inputs







CLEAN ENERGY LOGIC MODEL

Goal

Improve uptake of affordable clean energy technology to improve the health and economic welfare of families and to improve their environmental footprint by reducing greenhouse gas emissions and deforestation.

 DIRECT OUTCOMES

 Improved household welfare (lower fuels costs, improved lighting)

 Improved health outcomes (reduction of indoor air pollution and burns)

 Improved environmental impact (lower emissions and deforestation)

 Reduced fuel collection workload for women and children

clean technology

Widespread

distribution network

CATALYTIC OUTCOMES

 Expansion or replication of effective models and adoption of effective practices for sustainable clean energy product manufacture, distribution, and installation

clean technology

Consumer affordability

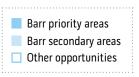
 Resource mobilization for effective models



Environment

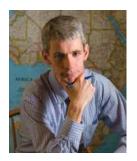
Sector research

and advocacy



Opportunities Technology Product quality and Consumer awareness commercialization use standards Technology Carbon finance market Consumer acceptance development Three billion people rely on solid fuels like wood, dung, coal, and kerosene to meet basic household energy needs. These resources are not harvested sustainably nor burned Problem efficiently, resulting in insufficient and expensive energy for the poor, severe health Statement problems caused by indoor air pollution, and greenhouse gas emissions and deforestation. While new technologies have been developed, consumer use has remained low.

Barr Global Staff





Tanya Jones

Portfolio Manager

Heiner Baumann Director of Global Programs



Pierre Imbert Senior Advisor for Haiti



Emily Sidla Program Assistant (2013 – present)

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- Mary Robinson Foundation Climate Justice
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- New England International Donors
- NoVo Foundation
- Omidyar Network
- Pershing Square Foundation
- Population Council
- Population, Health and Environment Ethiopia Consortium
- Rockefeller Foundation
- Segal Family Foundation
- Shell Foundation
- Skoll Foundation
- W. K. Kellogg Foundation
- Women Thrive Worldwide

Grantee Websites

COMMUNITY

HEALTH



AMREF http://www.amref.org/

D-Tree International http://www.d-tree.org/

Living Goods http://livinggoods.org/

Save the Children http://www.savethechildren.org/

The Open University http://www.open.ac.uk/

Village Reach http://villagereach.org/



Avani http://www.avani-kumaon.org/

Fair Trade USA http://fairtradeusa.org/

Kickstart http://www.kickstart.org/

Mercy Corps http://www.mercycorps.org/

One Acre Fund http://www.oneacrefund.org/

Oxfam America http://www.oxfam.org/

Relief Society of Tigray (REST) http://www.rest-tigray.org.et/

Root Capital http://www.rootcapital.org/



Acumen http://acumen.org/

Envirofit http://www.envirofit.org/

Ethiopian Ministry of Water and Energy (MoWE) http://www.mowr.gov.et/

Partners in Health http://www.pih.org/



Aid India http://www.eurekachild.org/

Barefoot College http://www.barefootcollege.org/

Educate! http://experienceeducate.org/

Rare http://www.rare.org/

University of Miami http://www.miami.edu/

Contributors

Authors: Barr Global staff Editors: Stefan Lanfer, Jane Joyce Designer: one[visual]mind

Photo Credits

Front Cover: Moraq Nyamboke of Kitale, Kenya, after purchasing a KickStart manual water pump enabling farmers to grow more crops and earn more income. Photo credit: KickStart

Inside Front Cover: Left to right: Boy in Matheux Mountains, Haiti, on his way back from school. Photo credit: Heiner Baumann; Erosion in hamlet below Tibwa, commune of Arcahaie, Haiti. Photo credit: Heiner Baumann

Page 5: Top to bottom: Regina, a KickStart water pump client, with here growing family – Nakuru, Kenya. Photo credit: KickStart; Farmer harvesting rice grown with new practices introduced by Oxfam America – Liancourt, Haiti. Photo credit: Anna Fawcus / Oxfam America; Girl of Bete Gabriel watershed – Tigray, Ethiopia. Photo credit: Heiner Baumann

Page 64: Children of Bete Gabriel watershed – Tigray, Ethiopia. Photo credit: Heiner Baumann

Back Cover: Left to right: Local farmer from MAFLPV in Haiti who for the first time practices the system of Rice Intensification, introduced by Oxfam America. Photo credit: Anna Fawcus / Oxfam America; A Health Surveillance Assistant in Malawi (pictured in blue) provides treatment to an infant. Photo credit: Save the Children, Malawi; Children of Bete Gabriel watershed in Tigray, Ethiopia. Photo credit: Heiner Baumann









Barr Foundation The Pilot House Lewis Wharf Boston, MA 02110 www.barrfoundation.org