

FRONTLINES

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SEPTEMBER/OCTOBER 2012

The Idea Incubator:
Calling on Bright Young Minds

Big Choices on a Small Screen



Youth Storm the **MOBILE FRONTIER**

Youth/Mobile Technology Edition



INSIGHTS

From Administrator Dr. Rajiv Shah

MANY PEOPLE will tell you that global challenges today are simply too big and complex to overcome. Challenges like ending extreme poverty or ending preventable child death. Challenges like ensuring all children are learning in their classrooms, or expanding access to clean, off-grid energy.

But the truth is that today, more than ever, we have the technologies and knowledge to confront these challenges and brighten the future for millions of people around the world. In fact, one of the most powerful tools for development in existence is also one of the most ubiquitous.

Today, thanks to cell phones, poor farmers can use text messages to compare prices and sell what they grow at higher prices. Community health workers can use phones to collect information and track disease outbreaks in real time. Protestors can use them to document and share videos of electoral violence. And mobile banking can give billions without an account the opportunity to save money for the very first time.

Technology can't solve every problem we face, but new tools can change the reality of what's possible. In fact, in the last few years, some of our best ideas have come from young people who have the optimism and determination to harness these new tools and change the world for the better.

Through our Development Innovation Ventures fund, we're investing in a team of young graduates who started a company called EGG-energy to help provide off-grid electricity to homes across Tanzania. They call it the "Netflix solution." Low-income families rent out portable, rechargeable, affordable batteries to power their homes for five nights at a time.

In Tanzania, where 90 percent of people lack access to electricity—but 80 percent live within 5 kilometers of the power grid—this could be a unique solution to a pervasive problem in development.

That's the purpose of our Innovation Ventures fund—to support entrepreneurs who have a great idea and need the resources to test it. If they can prove through rigorous evaluation that their idea works, we can also provide funding to help them bring their solutions to scale.

That isn't the only way we're reaching out to young innovators. Last year, we launched a series of global competitions called Grand Challenges for Development that encourage scientists, researchers and entrepreneurs to generate game-changing solutions to particularly difficult problems in development.

Our first Grand Challenge—called Saving Lives at Birth—attracted more than 600 ideas to help mothers give birth safely in remote or impoverished settings. One of those applicants was a young graduate in bioengineering who had designed a simple, affordable alternative to an expensive machine that helps resuscitate newborns suffering from respiratory failure.

In Western hospitals, that machine costs up to \$6,000, and it requires specialized training and a stable source of electricity. Using a plastic bottle and household aquarium pumps, the young

innovator helped build an easy-to-use, battery-run resuscitation device at one-fortieth the cost. With a USAID grant, her team took that device to Malawi, where they had it on hand when a non-responsive infant girl arrived at a local hospital.

Within minutes, the device had saved her life.

These solutions didn't come from professionals who've been in the field for three decades. They came from young people, and astoundingly, they arrive from everywhere—from entrepreneurs, universities and research labs across the developing world.

But in order to effectively realize the power of these innovations and truly leave behind generational legacies of success, we have to recommit ourselves to incorporating new technologies into our work from the very beginning.

Instead of collecting information using paper surveys, which is often expensive and results in data-entry errors, we can use mobile devices. Instead of paying contractors to collect baseline data, we can crowd-source information and combine it with sector-specific and demographic data sets. Instead of relying on the use of cash in our own development projects, we can save money, reduce corruption, and drive greater efficiencies through the use of electronic and mobile payments.

These strategic decisions will not only be more efficient. They will also amplify the voices of the poor, enabling their input to be incorporated back into program design and evaluation so that we continue to improve as an organization dedicated to advancing human welfare and opportunity. ■



Follow @rajshah on Twitter

"I realize that there are among us those who are weary of sustaining this continual effort to help other nations. But I would ask them to look at a map and recognize that many of those whom we help live on the 'front lines' of the long twilight struggle for freedom—that others are new nations posed between order and chaos—and the rest are older nations now undergoing a turbulent transition of new expectations. Our efforts to help them help themselves, to demonstrate and to strengthen the vitality of free institutions, are small in cost compared to our military outlays for the defense of freedom."

—John F. Kennedy, Special Message to the Congress on Foreign Aid, March 13, 1962

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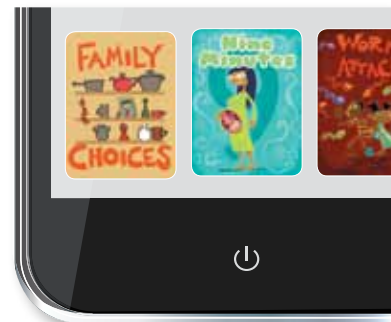
Looking for the Old 'Where in the World?'

USAID staff movements are now published by the USAID Alumni Association at www.usaidalumni.org/alumni/usaid-staff-movements.

Cover: An Afghan Youth takes a picture with his mobile phone. With more than 18 million subscriptions, the explosion of mobile users has created a network that bridges the country's formidable urban-rural divide.

Photo by Dmitry Kostyukov, AFP

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MESSAGE FROM THE

Senior Adviser and Chair, Youth Policy Task Team,
Bureau for Policy, Planning and Learning

ELEVATING A DEMOGRAPHIC ON THE RISE

By NICOLE GOLDIN

WITH more than half the world's population under the age of 30, youth issues have taken center stage on the global agenda. That includes education and employment, health care and family life, and civic engagement and political participation. While large, idle youth populations have often been associated with instability or crime and violence, young productive labor forces have been associated with economic growth in East Asia, and are routinely discussed as the heart of Africa's potential to reap the so-called demographic dividend.

At the same time, youth-led global Occupy and Arab Spring movements, and a new class of young innovators and CEOs like Ushahidi's Ory Okolloh, are inspiring belief and support for young people as partners and leaders in development, peace and prosperity. In his Aug. 12 International Youth Day message, USAID Administrator Rajiv Shah reminded us all that "with vision and passion, youth serve as vital change-agents in their communities and countries."

Building on decades of youth programming in nearly 40 countries,



USAID is elevating youth issues with: activities that support, protect, prepare and engage young people; renewed efforts to mainstream and integrate youth across sectors throughout the program cycle; expanded dialogue, outreach and partnerships with and for young people; more research and evaluation; and a forthcoming policy on youth in development. These efforts are grounded in the belief that youth hold great potential, and the understanding that achieving

core development objectives is increasingly dependent on them.

The projects presented in this issue of *FrontLines* demonstrate many of the best practices and principles that are informing and guiding our expanding youth program and policy portfolio. For example, a number of articles highlight how embracing technology and innovation by and for youth can not only empower and engage young people everywhere, but also bring new development solutions to the table.

We hear from USAID/Kenya about how community parliaments, or *bunges*, are driving democratic participation and

fomenting tomorrow's leaders (see page 4). Similarly, the story about teacher-training in Braille from Montenegro, a bonus story in the online

FrontLines, embodies our commitment to account for the diversity of youth in our programming and design projects that recognize differences and similarities in striving to

provide opportunity for all.

Promoting gender equality among young people is critically important to youth development and is illuminated

GO ONLINE

for a *slideshow of youth photos*

in the story of our work in the Democratic Republic of Congo reducing gender-based violence (see page 8), and our work in Yemen educating girls. Finally, the articles on improving land administration in Liberia (see page 22) and education activities in Lebanon (see page 20) spotlight the importance of taking a systems-level approach in order to affect young people at scale.

In her February “Youth Rising” remarks earlier this year in Tunisia,

Secretary of State Hillary Rodham Clinton said: “[T]here are underlying dynamics that are affecting young people everywhere—changes in demographics and technology, economics and politics that are bringing together this unique moment in history. Young people are at the heart of today’s great strategic opportunities and challenges, from rebuilding the global economy to combating violent extremism to building sustainable democracies.”

In April, the Agency participated in Global Youth Service Day, and last month we celebrated International Youth Day, this year themed “Building a Better World: Partnering with Youth.” Let us leverage this momentum and continue to shine a light on successes. And let’s create new initiatives in our portfolio to seize the promise in young people and advance our youth development work towards a brighter future for all. ■



Photo by Malak Shaher, USAID

School girls in Sana'a, Yemen. Visit the *FrontLines* digital edition to read how USAID is helping Yemen to improve its primary-school education.



In Kenya's

The Taita Taveta County Bunge Forum formed in October 2011. It is one of 26 county youth forums launched across Kenya in the past year.

The country's 'bunges,' or democratic youth groups, are serving as a powerful counterweight to widespread apathy, unemployment and election violence, all the while fomenting tomorrow's leaders.

THE VILLAGE of Mariaini spreads out across steep slopes of emerald tea, straggly corn and clumps of eucalyptus trees. It is deep in rural Kenya's heavily populated Central province, a place where

land is fragmented into small plots for subsistence farming and where there is little outside assistance. Only rutted dirt roads connect Mariaini to bigger towns.

Three thousand people live here, and according to the local chief,

three-quarters of them are teenagers and young adults. Unemployment for that group hovers above 90 percent.

George Ngethe, 25, is the chair of the local youth group here or *bunge*, Swahili for parliament. His dark suit is draped loosely on his thin frame, giving him the look of an elegant yet earnest businessman as he hikes down the narrow path to the bottom of a hill where bunge youth are clearing ground for a



Community ‘Parliaments,’ Youth Find a Voice

By Donatella Lorch

Photo by Donatella Lorch, USAID

greenhouse. Other members are tending 6,000 tea seedlings under plastic tarps that will be sold at a profit of three cents each.

“Before, no one recognized that youth could do anything,” explains Ngethe. “We have projects now. We have a voice. Now we are consulted. We have influence.”

The village, Ngethe and almost 50 other youth belonging to the Mariaini

Pamoja Bunge are on the brink of a major transformation by USAID’s largest youth program in the world. Since 2011, under the rallying cry “Yes Youth Can,” more than 700,000 young people from thousands of villages have come together across ethnic, linguistic, religious and cultural lines to become youth bunge members. So far, 15,000 village-level youth bunges are officially registered with the Government of

Kenya as self-help groups. Registering with the Ministry of Gender, Children and Social Development enables the bunges to open bank accounts, organize public events, and receive funding from government agencies. Bunges serve as a youth-owned, youth-led and youth-managed space for young Kenyans to develop new leadership skills and promote transparent decision-making about their priorities.

“By supporting the formation of the youth bunge structure, USAID has helped advance one of the key reforms envisioned in the new Constitution of Kenya, namely that youth have a mechanism for engaging the government on every level,” says Dr. James Nyikal, the permanent secretary of the Ministry of Gender, Children and Social Development.

USAID INTRODUCED the bunge model based on significant research into the causes of Kenya’s post-election violence during 2007 and 2008, where youth were both victims and perpetrators. “The research showed that youth had no confidence in civil society or in the existing public or private institutions in Kenya. They wanted to run their own organizations and to help

strengthen Kenya’s post-election recovery. Simply put, they wanted to be empowered,” says Dwaine Lee, director of the Education and Youth Office at USAID/Kenya.

The Kenyan Government officially defines youth as 18 to 35 years old. Out of a national population that numbered 40 million in the 2009 census, over a third are youth and the vast majority—like Ngethe and his fellow bunge members—are out of school with no regular work or income, and are vulnerable to recruitment into political campaigns and criminal gangs. Nearly 2.5 million young people are unemployed and barely 125,000 are absorbed annually into formal employment.

“Youth are critical to Kenya’s future political and economic stability. With national and local elections coming in



Photo by Nichole Sobecki, USAID

The Mariaini bunge has assisted 30 youth to get a national ID, essential for employment and voting.



Photo by Nichole Sobecki, USAID

Mariaini bunge chair George Ngethe (suit jacket) works at the youth group’s nursery.

March 2013, it is urgent for youth to coalesce around what they need and expect from Kenya’s elected leaders,” says Ahmed Issack Hassan, chairman of the Kenya Independent Electoral and Boundaries Commission.

BUNGES MOTIVATE youth to improve their own communities with the resources they have in their villages and to use these assets as leverage to build new partnerships with donors, private businesses and government agencies. Youth elect their own leaders at the village level as well as individuals to represent them at the county level and to become members of the National Youth Bunge Association.

Berem Risper, 27, is the county bunge forum president from Elgeyo-Marakwet. A lecturer with a Ph.D. in economics, Risper represents the talent and leadership that the bunge movement has attracted.

“We are the majority,” she said. “I learned that we can mobilize a mass of youth and that we can solve our own problems. We have unique solutions to our unique problems. But we can also be a time-bomb . . . We are tired of the same old promises from Kenyan politicians. They just keep on talking and never do anything.”

A critical part of the success of the program, which is implemented nationally by Mercy Corps, is the ability of youth to gain the support of local government officials, in particular the village chiefs. In Mariaini, Stephen Kio, the sub-location chief, is a huge fan of the local bunge.

“We had a lot of hopelessness and lack of purpose with the youth because they didn’t have a hope for a better

future,” Kio said. “I’m very happy because of the initiative. I’ve seen that the youth have been given a future.”

Mariaini shares similar problems with many other Kenyan villages: dire poverty, serious alcohol and drug abuse and, in the current election cycle, a stream of politicians prepared to rent a crowd for their rallies and buy votes.

Since joining the bunges and participating in discussions about their future and their role in their communities, many members are creating their own jobs. In addition to the tea seedlings they cultivate, members run a village “milk bar” in a tiny room on Mariaini’s only street. The milk bar is a source of income and provides a market that never existed before: Farmers have a place to sell their surplus milk,

and families without cows have a place to purchase milk.

“At first the farmers only brought us 10 liters a day of milk,” Ngethe explains with a smile. “Then they discovered we have a real market and now we sell 165 liters a day.”

The milk is delivered at 6 a.m. in bright yellow plastic jerry cans. By noon on one day, there were only four liters left. For 13 shillings (15 cents), anyone can buy a steaming hot glass of milk and sip it on the wobbly wooden benches outside the shop.

Isabella Kihui, 28, one of the 17 women bunge members, is a trained baker. She has transformed her family kitchen into a mini-bakery and shares her profits with several of the bunge men

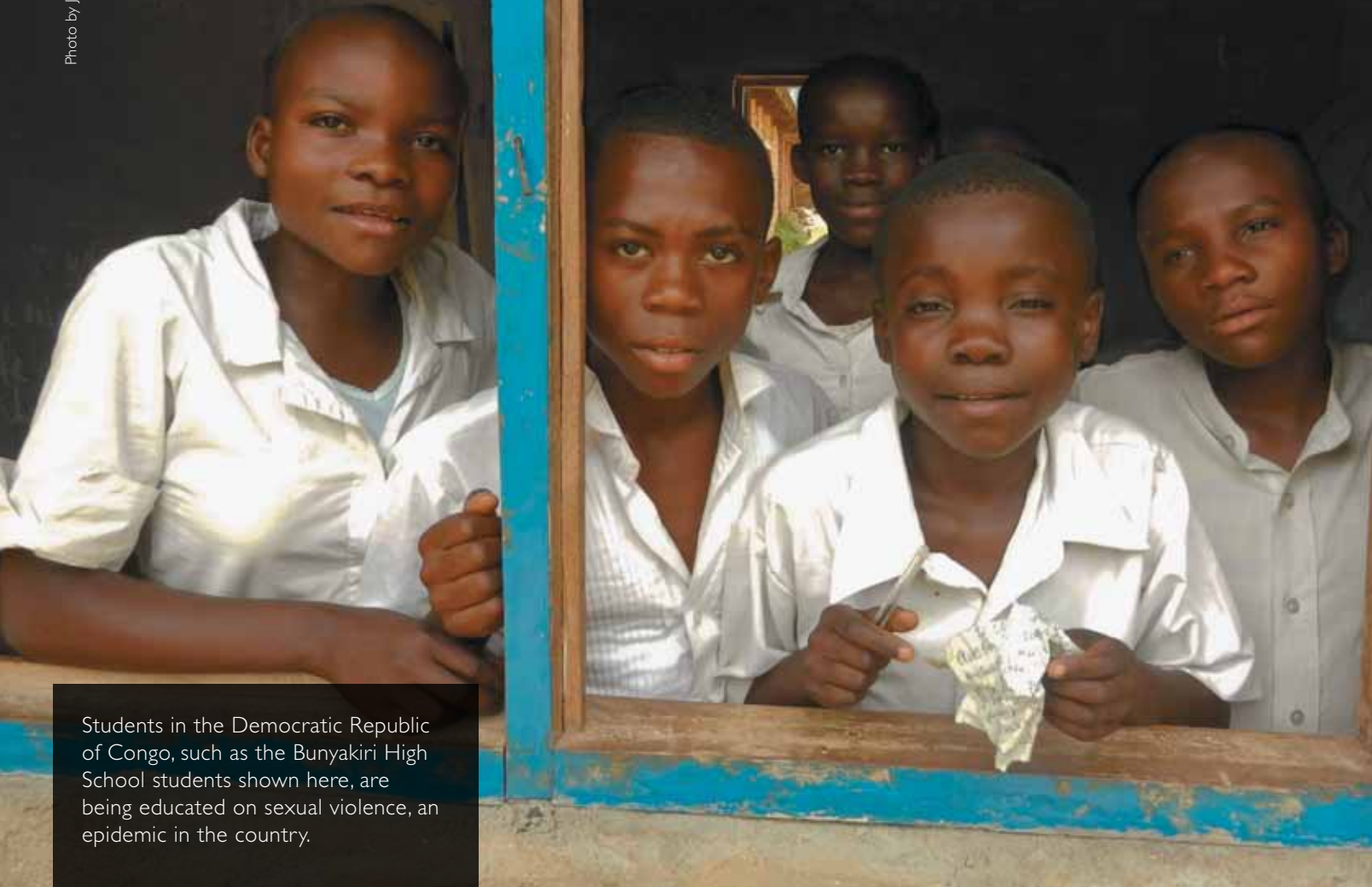
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The Mariaini bunge’s milk bar buys and sells 40 gallons of milk per day.

Photo by Nichole Sobocki, USAID

EARLY LESSONS AIM TO END RAPE EPIDEMIC



Students in the Democratic Republic of Congo, such as the Bunyakiri High School students shown here, are being educated on sexual violence, an epidemic in the country.

By Josh Harris

Gender-based violence prevention program targets youth with messages of equality in the Democratic Republic of Congo.

MOST OF the girls and boys of Bunyakiri High School in eastern Democratic Republic of Congo (DRC) have spent their entire lives at the center of one of Africa's most brutal conflicts.

Even after the 2003 ceasefire between the government and the largest rebel groups—including the Movement for the Liberation of the Congo, the Congolese Rally for Democracy, the national opposition parties and others—South Kivu province has

been plagued by outbreaks of violence among rival armed groups.

Sexual violence has become a constant threat for women and girls—many of them under age 18. Hundreds of young girls have reported being victims of sexual violence in eastern DRC, where rape is considered an epidemic. But the actual number of victims is likely much higher. No teenage girl wants to face the social ostracism that can come with surviving a sex assault. And, while less publicized,

domestic violence and early and forced marriage also add to an environment of inequality for females in this region.

Since 2002, USAID and its partners have been working to improve services to sexual assault survivors in eastern DRC. While treatment is crucial, the Agency is also now working on prevention with a project designed to change attitudes and behaviors among the next generation.

The program, implemented by the International Medical Corps, started in 2010 and is based on an understanding that young people are still developing ideas about gender and relationships, which tend to be more engrained in adults.

“By engaging young people to develop positive beliefs and attitudes, the project can prevent future acts of violence, and can ultimately contribute to a more peaceful and equitable future for DRC,” commented Alessia Radice, International Medical Corps’ senior behavior change communications adviser in DRC.

THE EFFORT WORKS like this: Girls and boys between the ages of 10 and 16 are invited to participate in several activities such as mobile educational movies, sensitization sessions, quizzes and soccer matches for girls. The mobile cinema educational films address rape and sexual violence. The screenings are followed by discussions, led by trained facilitators, to help young people consider the causes and consequences of violence. Sensitization sessions help to increase young people’s awareness of their rights, explore inequalities in their communities, and challenge dominant attitudes around gender norms and masculinity. Quizzes give girls and boys a

chance to show off their knowledge of sexual and gender-based violence while also encouraging discussion around the subject.

Though the events are kid- and teen-friendly, they relay important information, including laws that prohibit forced marriage for children under age 18 and where survivors of sexual assault can find help.

“We have to be sensitive to how we approach discussions on sexual violence when speaking to young people, but I am constantly amazed at how enthusiastic and committed to action these boys and girls are,” said Radice. “The participatory and entertaining format of the activities is often what attracts young people—playing soccer, competing in quizzes, watching

movies and so on—but they are also genuinely interested in the issues. There are always requests for more sessions and we hear the young people talking about the messages outside of the formal activities. Informal exchanges with their peers is where these issues really come alive for young people, and it’s where the deep-rooted change is likely to come about.”

Early childhood experiences influence the likelihood of people later becoming perpetrators or victims of sexual violence, so it is important to give young people the tools to break away from this cycle of violence. In Bunyakiri, for example, domestic violence is viewed as normal to the extent that parents expect their daughters to

continued on p. 25



The view from outside Bunyakiri High School, South Kivu, Democratic Republic of Congo. The village of Bunyakiri is more than a two-hour drive from the nearest big city, surrounded by dense jungle.

Photo by J. Harris, International Medical Corps

THE IDEA INCUBATOR

By Kelly Bluth

Several USAID innovation-seeking programs are giving young visionaries with big plans for development a major boost.

AN AQUARIUM pump, a toilet and a battery are devices not usually associated with revolutionary ideas. But then again, following the norm is not usually how transformation occurs. Through a breathing device with an aquarium pump that saves the lives of preterm infants in Malawi, sanitation centers in Kenya that translate waste into money and a pocketbook-sized battery that electrifies remote villages in Tanzania, several young innovators are shedding light on the resources their generation brings to finding solutions to the world's greatest problems.

These young people were given opportunities to expand their ideas into

proven solutions through USAID funding and support.

Recognizing the unique potential of these young visionaries, USAID has made tapping into the youth idea pool a top priority in recent years. Several Agency programs are jump-starting entrepreneurs' global innovations and allowing for worldwide implementation: among them, the idea incubator Grand Challenges for Development; the proven solution-to-scale Development Innovation Ventures (DIV); and the USAID/NASA/Nike sustainable solution accelerator LAUNCH. Though they are not aimed exclusively at the youth demographic, within these grant programs, young people are taking on a starring role.

Bright individuals and like-minded teams of youth have introduced breakthrough ideas with the power to reach millions of people at a fraction of the usual cost, says Will Schmitt, a 29-year-old open innovation adviser from USAID's Office of Science and Technology.

"Not only have innovators under 35 been shining through USAID's highly competitive selection process, but their winning development solutions are among the stars of the portfolios," says Jeff Brown, division chief for DIV. "We are eager to support more young innovators as they test their ideas and bring successes to scale."

The DIV program has awarded \$5.4 million since it was created in 2010. Around 30 DIV projects have ranged from a campaign to reduce greenhouse gas emissions in India to a credit-scoring



1. Sanergy (featured on page 13) hosts a marketing event in a Kenyan community to generate demand for its low-cost, hygienic sanitation centers. The toilet facilities are proving to be one solution to the long-standing problem of sanitation in developing countries. Photo by Sanergy
2. A newborn with respiratory distress at Queen Elizabeth Central Hospital in Blantyre, Malawi, breathes easier with the help of the Pumani bCPAP device (page 15). Photo by Jocelyn Brown. **3.** EGG-energy (page 17) developed a portable rechargeable battery that can be transported easily to

screening tool used to unlock private-sector lending in Africa.

AFTER DECADES of progress, the development sphere is changing—a more proactive approach to partnerships with a results-oriented, environment-friendly and cost-effective mentality has emerged with the rising generation. A stronger emphasis on technology and innovation has gone hand in hand with the need for young innovators' fresh ideas and initiative. This attitude is prevalent in the younger generation, which has developed a unique personal charge to answer the challenges of the world.

Between 2009 and 2010, applications for Teach for America, the nonprofit that sends recent college graduates into America's classrooms, rose by a third from the prior application period; and AmeriCorps positions nearly tripled in 2010 from 2008, according to *The New York Times*. This surge in nonprofit, volunteer and public service

commitments from young people has stimulated a response from USAID—an agency eager to tap into this trend to foster international development.

USAID's various innovation grant programs send a clarion call to which countless across the world have responded, many of them young people. For example, in the March 2011 applicant call for the first Grand Challenge for Development, called Saving Lives at Birth, there were over 600 total applicants. The challenge, supported by a consortium of partners, asked global innovators to come up with solutions to help decrease the number of developing-world deaths during the perilous time between labor and just after birth for both mother and baby. Over five years, the partners aim to invest at least \$50 million in groundbreaking ideas to save lives at birth. The consortium is comprised of USAID, the Government

of Norway, the Bill & Melinda Gates Foundation, Grand Challenges Canada and the U.K. Department for International Development.

Recently, the work of William Kethman, a surgical resident at Stanford University, was nominated for a grant by USAID. His low-cost device—called Safe Snip—cuts, clamps and shields umbilical cords from infection. Kethman invented the patent-pending medical device at the company he founded, NOvate Medical Technologies, which explores solutions for global health needs.

Another USAID program, the DIV program, identifies cutting-edge solutions to development challenges, invests in these ideas, rigorously tests them and scales the solutions that promise to affect millions of lives.

Since its inception in 2010, DIV has invested in nearly 30 world-class innovators in areas from food security to

GO ONLINE
for more information
on USAID's innovation
grant programs



3



4

homes. Each battery can provide power for up to five nights, after which the customer can switch a depleted battery for a fresh one at one of 10 distribution depots. Photo by EGG-energy. 4. Yashraj Khaitan (left) and Jacob Dickinson, both founders of Gram Power (page 19), stand next to several solar panels in India. The panels are part of Gram Power's central infrastructure that is built in each village for electrification. Distribution lines run through the village, connecting each home to the central infrastructure of solar panels and a generation station. Photo by Gram Power.

health care to governance. Despite the highly competitive application process, several DIV grants have been awarded to those in their 20s and early 30s—prompting USAID to home in on the game-changing entrepreneurial input from the under-35 set.

Unique to this program, DIV presented a Young Innovators' initiative during USAID's Frontiers in Development forum held in June. The initiative urges the younger generation of social entrepreneurs, researchers, inventors, students and leaders to participate in the ongoing search for solutions through the DIV program. Young innovators are encouraged to apply for DIV grants of up to \$100,000, \$1 million, or \$15 million, depending on the level of evidence proving their solution works, and the scale they have already achieved.

IN ITS PURSUIT of innovation, the Agency often serves as an incubator for fledgling ideas, and through funding and support, provides opportunities for selected innovators to test, develop and implement their solutions on the ground. In other cases, USAID gives an additional push to proven but small-scale projects so they can be implemented more widely. More and more, those grant-seekers are coming from the same countries that the projects are designed to impact.

In the second round of grant awards for the Saving Lives at Birth challenge, where 65 finalists competed in the final stage of review July 12-14, almost half of the applications were grant-seekers

from the developing world. "This shows that we're doing a better job at attracting high potential solutions coming from a more diverse pool," innovation adviser Schmitt says. "With more applications coming from developing countries, it is clear that we are better positioned to provide resources for homegrown solutions—something we've been pushing very hard to do."

Another program gaining widespread success among the international

solutions to long-standing problems. LAUNCH innovators also receive direct technical assistance and other support through a six-month "Accelerator" program.

At the most recent LAUNCH forum held in July called "Beyond Waste," two of the nine innovators featured, Joseph Atnafu of Sanergy and Jason Aramburu of re:char, were under 35. The challenge charged applicants to find ways to transform current

waste-management systems and practices to ones focused on minimizing waste and producing usable byproducts. Selected innovations at the forum included revalued textile waste and "biochar," a charcoal substitute made from agricultural waste that boosts crop yields.

So, why cultivate young innovators, specifically?

Carolyn Edelstein, a 23-year-old USAID program specialist with DIV thinks the Agency is investing in a key demographic.

"As young adults, we are well-placed to dream up powerful new solutions to development problems," she says.

"Young professionals, following this generation's career-hopping trend, apply the lessons of one field to solve the problems of others.

"On their own, or in collaboration with experienced partners, these young innovators question entrenched assumptions and approach problem-solving with scientific vigor and enterprising energy to great success," Edelstein says. "I'm proud that USAID is supporting their efforts." ■



Photo by Gram Power

The central infrastructure for the USAID-supported Gram Power consists of solar panels and an adjacent room, which houses a generation station. Gram Power electrifies Indian houses and villages without access to the grid.

community is LAUNCH, which identifies, showcases and supports—through guidance from experts and entrepreneurs—approaches to global sustainability. Begun in 2010, LAUNCH uses a collaboration and acceleration model to help innovators achieve the impact they seek. Forums on water, health and energy have enabled innovators to network and receive specific instruction from thought leaders on how to accelerate implementation of their

The Business of Waste

By Kelly Bluth

EIGHT MILLION people in urban Kenya do not have access to a simple, hygienic latrine, and instead are forced to either use a pit latrine with hundreds of other people or employ the “flying toilet” tactic—which entails relieving oneself in a plastic bag and throwing it in the street. Both methods result in unsanitary conditions, pollution and contaminated waterways. Across the

globe, these conditions are affecting those in underdeveloped countries, including the lives of an estimated 2.6 billion people who lack even a basic toilet structure, according to a July 2012 *Good Business* article.

But those numbers are going down, one toilet at a time.

David Auerbach’s solution to the sanitation problem is Sanergy, a company he co-founded and helped launch in 2010 with a multi-purpose business plan that “starts with sanitation and



Photo by Echoing Green

David Auerbach, 31

Company: Sanergy

Mission: In a model that “starts with sanitation and ends with energy,” Sanergy brings sustainable, entrepreneurial toilets—and some useful byproducts—to urban areas in Kenya and beyond.

ends with fertilizer and energy.” The company builds low-cost, bright-blue, concrete sanitation centers resembling porta potties that are each designed to serve 80 people per day with clean toilet services. The centers are sold to local entrepreneurs on a franchise model, which not only addresses the serious need for toilet facilities in Nairobi—a city of over 3 million people—but also creates jobs.

“The world of sanitation is still pretty grim—8 million people in urban Kenya lack access to an adequate toilet,” said Auerbach, 31. “A clean, safe, hygienic sanitation experience can have a transformative effect as residents enjoy the benefits of a higher quality of life. They begin to expect an improved community, a cleaner surrounding environment, better health services and find the means to send their kids to school.”

The unique aspect of the model, however, does not lie in its social enterprise heritage or its success in closing the sanitation gap and improving health in Kenya and its neighbors. It is the way in which the eight metric tons of waste per week from 70 toilets—normally dumped into waterways—is converted into items



Photo by Sanergy

Sanergy’s sanitation centers, built from prefabricated concrete slabs, are transported to the site and assembled in a day. Local entrepreneurs buy and operate the centers as a franchise.



Photo by Sanergy

This woman runs one of Sanergy's sanitation centers and makes a profit by charging each customer a small fee. Customers can sign up for a membership fee, or pay per use—an average of 3-5 Kenyan shillings, or 4-6 cents.

of high value in the developing world: organic fertilizer and, at scale, electricity.

These useful byproducts are gleaned when Sanergy employees visit each latrine—run by local entrepreneurial operators—and, using handcarts, remove the waste deposits at the end of each day. The centers are equipped with air-tight containers, which make it easy and sanitary for the waste collectors to pick up and replace them.

The containers are then brought to Sanergy's central processing facility where the waste is converted into “gold,” as Auerbach refers to it. Microorganisms

turn the waste into high-quality organic fertilizer that is sold to commercial and small-hold farms.

This recyclable and renewable process finds a way to reap benefit from waste while simultaneously tackling and eliminating a profound and persistent sanitation problem in the developing world.

IN DECEMBER 2011, USAID awarded Sanergy a \$100,000 grant through its Development Innovation Ventures (DIV) program to refine its business model and adapt it to the needs of the local environment in Mukuru, a slum in eastern Nairobi.

“Since the grant came through, we've been able to open 70 sanitation facilities which are serving 4,000 people every day with hygienic sanitation that they were not receiving before,” Auerbach says.

After assembling each sanitation center, which takes one day, Sanergy franchises it out to a local entrepreneur who receives funding primarily from their savings and local microfinance banks. With that loan, the local operator can purchase the \$500 center and its annual \$100 renewal fee—which covers the daily waste collection service for one year, as well as peer networking events and branding. To repay loans and begin to make a profit, the operator establishes a pay-per-use fee, membership fees and complementary product sales for customers. The incentive to earn revenue persuades each operator to provide good customer service and supply the center with water, soap and toilet paper.

Although operators have discretion over how much to charge customers in the pay-per-use system, the range is from

3-5 Kenyan shillings, or 4-6 cents, and an average of 60 people pay this price at each sanitation center every day.

“We find that people are very willing to pay for the hygienic, convenient and safe sanitation experience,” Auerbach said. “For those who are unable to afford to pay, we are looking to pilot a voucher program, much like how Food Stamps works in the U.S.”

While local entrepreneurs are earning money through sustainable jobs, Sanergy is also profiting in the next step of the model, the waste processing plant. Revenue from the organic fertilizer and biogas energy keeps the company in the black.

Sanergy was also selected as a “Beyond Waste” innovator under the LAUNCH program, a joint effort by USAID, NASA and Nike to find sustainable solutions to development challenges, and was featured at a July forum.

“It was amazing to see the breadth of waste issues that the LAUNCH program covered,” said Joseph Atnafu, team leader for waste processing at Sanergy, who is also under 35. “It brought together innovations and expertise from around the world, covering the full spectrum of the waste management field. I found it inspiring to be amongst knowledgeable council members and game-changing innovators working to change the world.”

IN ORDER TO put more sanitation centers on the map, Auerbach said the company had to tackle the thorny issue of property rights. Land rights were often not clearly defined in the locations Auerbach and his company wanted to set up bathroom facilities, which led Sanergy to expand its network of

partners to include landlords who need sanitation centers on their properties.

Like many development innovations, the inspiration for this one has humble beginnings. The idea first crossed Auerbach's mind during a two-year fellowship teaching English in China's Hunan province from 2004 to 2006 when he witnessed the horrors of pit latrines. "When flies flew out of the odorous and half-filled pit latrine, I felt most viscerally how easy it was for disease to spread and how unpleasant a user experience it was," Auerbach said.

In 2009, as a graduate student at MIT's Sloan School of Management, Auerbach teamed up with two other students in the program and constructed a business plan for an entrepreneurial class on international development.

Sanergy was born the next year under the platform of scaling sustainable

sanitation solutions to developing countries. With grants from organizations like Echoing Green, the Swedish International Development Agency, the Bill & Melinda Gates Foundation and the Mulago Foundation, Sanergy has been able to successfully test and implement the prototype in Nairobi.

At each step, Sanergy creates job opportunities and generates profit, all while addressing a serious social need. Overall, the model represents a potential \$177 million market. In five years, Sanergy aims to serve half a million people.

"Our short-term goal is to put up 250 toilets by the end of the year," Auerbach said. "Our long-term goal is 6,000 toilets serving 500,000 people. We think we can do all that in Kenya. And once we do, we have big plans to move into East Africa and beyond." ■



Jocelyn Brown, 24

Device: Pumani bCPAP

Mission: To implement a low-cost newborn breathing device in Malawi's hospitals and reduce millions of preventable infant deaths.

A Healthy First Breath for Malawi's Newborns

By Kelly Bluth

EFFECTIVE neonatal care has come to be expected in the developed world; but in countries like Malawi, many mothers fail to see their baby live beyond a single day. Among the many causes of infant death in the developing world, respiratory illness tops the list.

For every 100 babies born in Malawi, 18 are born premature and with a heightened risk for respiratory distress syndrome, according to "Born Too Soon: The Global Action Report on Preterm Birth" from the World Health Organization. This life-threatening breathing condition is the leading cause of deaths in preterm infants, and will most likely continue to be unless the technology for its remedy is brought to the developing world.



Photo by Sanergy

The sanitation centers produce waste, Sanergy removes that waste, and its processing facility converts it into fertilizer to be used by farmers. This cycle not only provides Kenyans with a sanitary toilet, but it also removes waste from their environment and produces fertilizer to use on commercial and small-hold farms. David Auerbach developed this model while he was a graduate student at MIT.

With this grueling reality in mind, one young bioengineering student, 24-year-old Jocelyn Brown, and a team of other students at Rice University developed a low-cost breathing device to reduce infant mortality. The idea was developed through Beyond Traditional Borders, the undergraduate education initiative of Rice 360°: Institute for Global Health Technologies, with mentoring from faculty at Rice University and Baylor College of Medicine. Through the program, which gives students a chance to do research abroad, Brown and several colleagues collaborated with physicians at Queen Elizabeth Central Hospital (QECH) in Blantyre, Malawi, to pinpoint the developing world's greatest medical needs.

During one visit in July 2009, a physician suggested that students from the Rice 360° program design a low-cost, durable bubble Continuous Positive Airway Pressure (bCPAP) device. The nasal-prong device, which essentially forms a pressurized seal over the airways and forces air in and out of the lungs, is commonly used in the developed world to treat infants with ailing respiratory systems, but the \$6,000 price tag often puts the device out of reach for developing world delivery rooms.

Although QECH, the largest hospital in Malawi, had oxygen therapy, or bottled oxygen delivered through nasal prongs, the treatment is significantly less effective than its more high-tech cousin; bCPAP increases the survival rate of infants with respiratory distress to 70 percent, as opposed to 25 percent with just oxygen.

To bridge this financial gap and open the door for proper infant care, Brown and her classmates began testing prototypes in the fall of 2009 for their senior

engineering design project. They came up with a rugged bCPAP device that could be built for \$160, a fraction of the usual price. Although nearly 38 times cheaper, the rugged model delivers the same therapeutic pressure as the more expensive device does in the developed world. One difference is that a commercial bCPAP provides humidification, while Brown's device avoids the high cost of that installation by drawing in room air for sufficient humidity.

IN A PROTOTYPICAL bCPAP device, pressurized air is delivered via prongs into the infant's nostrils to keep the lungs open, with controls for air flow, pressure and oxygen. This is also the case for Brown's latest design called the Pumani bCPAP, although in this version, the primary cost savings comes by replacing wall air flow or a commercial flow generator with inexpensive aquarium pumps that are designed to be easy to repair and run for years at a time.

Because of its simple design, bCPAP requires little maintenance. This and the cost factor, says Brown, gives hospitals in developing countries access to the life-saving equipment on a broad scale, for the first time.

After winning \$250,000 in seed-grant funding from the USAID-backed July 2011 Saving Lives at Birth Grand Challenge—the first in the multi-donor Grand Challenge series where applicants are called on to produce original ideas to target a particular problem—Brown said the Rice team was able to kick-start a rigorous clinical trial of her prototype in Malawi.

In the following months, Brown's team brought the device to QECH to launch a nine-month clinical trial, create a training program for hospital staff and engineer several bCPAP prototypes for

commercial manufacture. To gather feedback and adjust their efforts to meet local needs, the team held a country-wide stakeholders meeting as well.

USAID stresses the importance of these test stages to refine the product and adapt to any challenges that arise before broad-scale implementation. Brown said these required steps helped her team fine-tune the product for its eventual roll out across Malawi.

"We have continued to receive feedback from users about the design of the bCPAP, and the next version of the device has been created based on their feedback," Brown said. "We know that the design improvements we've made and the lessons we've learned while conducting the trial at Queen Elizabeth Central Hospital will be very beneficial when we scale bCPAP to the other central and district hospitals in Malawi."

Scaling up across the Southern African country is part of the master plan for Rice's bCPAP. This year, the device is one of three finalists nominated for a Saving Lives at Birth transition grant worth \$2 million. The goal is to implement the technology, through partnership with the Malawi Ministry of Health and local commercial and government entities, in all central and district hospitals in Malawi within three years, says Brown, and develop an education and awareness campaign while assessing the product's cost-effectiveness. It is estimated that, if each central and district hospital in Africa receives sufficient bCPAP devices to treat all babies with respiratory disease, more than 178,000 lives could be saved each year.

Brown says the initial data from the testing period shows that the bCPAP therapy significantly reduces infant mortality rates in a low-resource setting, such

that if the innovation is widely distributed throughout the African continent where nearly 1 million children die within a week of birth, neonatal mortality rates could be reduced by up to a third.

“Now that we’ve implemented bCPAP in one central hospital, we have a greater understanding of the staffing and spacing requirements,” Brown said. “We are currently planning the next phase of bCPAP roll-out, which will include implementing a bCPAP ‘SmartCart,’ containing bCPAPs and other required equipment to help babies breathe to all four central and 27 district hospitals in Malawi, as well as implementing a video campaign to educate mothers about bCPAP.”

With an end goal of saving lives at birth while simultaneously creating sustainability and boosting the economy, Brown said the team plans to work with local manufacturers to determine if bCPAP components can be made or assembled locally.

“Global health innovation needs to be a collaborative, iterative process,” Brown said. “Because the idea to develop the bCPAP came from our partners in Malawi, their need for the device has been a driving force for the students and engineers in the United States.

“In the past three years, we have transported at least three different versions of the bCPAP to Malawi for feedback, and we plan to continue to incorporate users’ suggestions into future designs. There is so much medical equipment that breaks or goes unused in the developing world, and I think we need to listen to the nurses and doctors who work in these settings to understand their needs, and not just donate or design equipment that may ultimately make their jobs even more difficult.” ■

Bringing Tanzania on the Grid

By Kelly Bluth

ALTHOUGH rural Tanzanian farmers rely on radios for local and world news as well as critical information about weather conditions, only 2 percent of them have access to electricity. Without a place to plug them in, the radios gobble up disposable batteries—both a financial drain and an environmental hazard.

Non-grid energy solutions force Tanzanians to spend \$715 million per year on hazardous kerosene for lighting. Households spend approximately 10 percent of their incomes on basic energy services—a substantial amount for many Tanzanians with meager earnings.



Alla Jezmir, 32

Company: EGG-energy

Mission: To deliver electricity to low-income African households with rechargeable batteries for families without access to the grid.

This lack of basic resources for people who have such a dire need for them has served as constant motivation for EGG-energy board member Alla Jezmir. EGG-energy, which stands for Engineering Global Growth, is a start-up company based in Tanzania that provides electricity services to low-income African households by using the end of a transmission line to charge batteries for families without access to grid connections.

As of July 2012, EGG-energy operates three grid-based charging stations that provide electricity services to over 2,000 people, and one solar-powered, off-grid station. Jezmir says the on-grid stations, based outside of the city center of Dar es Salaam, are located near pockets of off-grid populations. From these stations, EGG-energy offers full service to its customers: complete installation of wiring, lighting fixtures, bulbs and switches in customers’ homes; subscriptions for fully charged batteries; and appliances like adaptors for phones and radios.

In what the company dubs its “Netflix solution,” customers can conveniently switch depleted batteries for fresh ones at 10 distribution depots. The depots receive battery shipments either by picking them up from one of the charging stations, or by having them delivered by EGG-energy employees for a fee. The company selects and trains local entrepreneurs to run these depots.

Once entrepreneurs have secured customers, EGG-energy electricians install a client's lighting system, planting a portable, brick-sized, lead-acid battery outside their home that provides power for up to five nights. A monthly subscription fee of \$4.60 covers the cost of battery charging and the swap service. Discussions are under way to equip the batteries with power strips showing when the battery should be replaced.

This comprehensive electricity service provides clients with the actual electricity, as well as appliances and installation services, bringing grid power right to their doorsteps.

Now, EGG-energy customers do not have to travel miles to charge a cell phone, burn through pricey disposable batteries for a radio, and release carbon dioxide fumes from expensive kerosene lighting. Customers can use expendable income for other investments.

EGG-energy reports that the pricing scheme gives the local depot entrepreneurs a six-year average profit of 24 percent, customers 35 percent annual savings on energy expenditures, and a company rate of return of 27 percent over six years.

"The venture is based on the team's belief in market-driven solutions, and we committed to finding those on the ground," said 32-year-old Jezmir. "It was this very notion that we can provide affordable solutions that can dramatically improve lives while saving customers' money that has kept us going despite all our challenges."

Fueled by a desire to use her international development and entrepreneurial business expertise for social good, Jezmir used the vast network available to her at Harvard, where she graduated with an MBA and MPA in 2009. She and other engineering Ph.D. and MBA students from Harvard and MIT with a shared

interest in social enterprise founded EGG-energy that same year.

After first taking root, EGG-energy aimed to provide clean power to the developing world through on-grid—and eventually through a majority of off-grid solar-powered—energy models.

But refining the group's early model could not proceed until the founding team of eight was able to work on the ground, testing and evolving their innovation with local franchisees. They needed money to run a three-month feasibility study and then to open a pilot site outside of Dar es Salaam. Additional capital was required to refine the group's current model and begin testing the model of franchising solar hubs to local entrepreneurs.

That is where USAID stepped in. The Agency provided the start-up a \$100,000 Development Innovation Ventures (DIV) grant in early 2012, which they used to test the modular solar hub project in its early stage. The money is specifically being used to hone in on the scale to which solar power can effectively reach and serve Tanzanian villages.

"This money has enabled us to make sure the program is tested, that we have sufficiently prepared for the next phase," Jezmir said. "Through the grant, we are able to refine processes as well as prepare to launch our franchising strategy."

USAID funds are helping EGG-energy further develop its franchise for off-grid and solar models so they can scale further into the country's remote areas.

"With Tanzania's poor infrastructure, we need to find ways to get energy sources closer to the end customer and to develop business models that allow this energy to be profitably distributed," said Jamie Yang, CEO of EGG-energy. "USAID ... is supporting EGG-energy to identify, train and support franchisees that will operate solar-powered hubs that

distribute electricity to customers in their community."

SINCE APRIL 2010, EGG-energy has managed to fill the energy gap for 220 Tanzanian customers outside of Dar es Salaam, which has ignited a domino effect for other improvements. Prior to rechargeable batteries, the people living in these Tanzanian villages relied on kerosene for lighting, which posed serious health and safety hazards. But improving health conditions was just the first step.

"With the reliable and clean power services of EGG-energy, families have a higher sense of security and improved educational and business outcomes," Jezmir said. "These include being able to study later at night and improve grades, as well as forming secondary businesses, such as kiosks or phone-charging services, that benefit from the ability to operate later in the night. With the extra money our services provide them, customers can invest in their businesses."

The USAID-supported company creates and sustains jobs in the local community, which is an important factor in the company's business model.

"Our distribution depots are operated by local business owners," Jezmir said. "They can boost their incomes this way as they swap batteries. Not only are we providing the service, but we are creating jobs, and working with local entrepreneurs is a core element of our distribution structure."

Jezmir adds that the most shocking realization for the team—and what continues to motivate her today—was when she discovered that people spent 10 percent of their already meager incomes on poorly implemented energy services, which leaves them little to spend on other necessities, much less the tools that can help them improve their lives.

“We wanted to offer them something that enabled them to improve their quality of life and save money and be able to invest that money in other ways,” Jezmir said. “Our team has found that it is quite expensive to be poor, and that the poor spend a disproportionately high percentage of their incomes on poor-quality services.

With EGG-energy, our customers can break even in the first year and save 50 percent in the second.”

While working to increase off-grid solar charging systems, EGG-energy hopes to expand its energy sources to 90,000 households within five years, and to develop 100 grid-based charging

bases and over 100 franchisees to operate with in Tanzania.

“Ultimately, we are developing a portfolio of energy services that grows and evolves with customers’ demands,” Jezmir said. “We hope to adapt to the needs of our customers and evolve our business model accordingly.” ■

A ‘Micro’ Solution to India’s Major Energy Woes

By Kelly Bluth

YASHRAJ Khaitan grew up in the thriving cities of Jaipur, Kolkata and Mumbai. He remembers experiencing power cuts for around five hours on a daily basis. But in a nation of 1.2 billion people, he was one of the lucky ones, having grown up in three cities plugged into the spotty energy grid. Much of rural India has no access to power at all.

Khaitan left India to study electrical engineering and computer science at the University of California at Berkeley. Today, the 22-year-old focuses on trying to electrify poor rural villages with “smart” micro-grid technology—or connecting remote areas without power to the national grid.

Smart energy makes use of software to monitor, manage and regulate the energy-generation system. Through this smart platform, intelligent decisions are made to lower costs, save energy and reduce carbon dioxide emissions.

This smart technology is the backbone of Khaitan’s company, Gram Power. The company builds a centralized micro-grid in the community, then employs local entrepreneurs to sell the

clean energy at an affordable price to individual homes, where Gram Power installs a meter to regulate each family’s energy supply and demand.

Khaitan’s mission, he says, is: “To make the technology more reliable, improve the cost-efficiency of the system and [to maximize] how many people can access this technology, which provides remote villages the opportunity for growth and connection they previously didn’t have.”

Micro-grid power enables communities to receive reliable and efficient basic energy services, says Khaitan, and has massive potential to be brought to scale. Before the new infrastructure was installed in a pilot Indian village, people relied on dirty and dangerous kerosene as the predominant form of energy. To charge cell phones, they would walk to nearby towns. If it was too far, a local entrepreneur collected phones and recharged them in town for a fee ranging from 5 to 10 Indian rupees (9 to 18 cents). Without a local micro-grid system, villagers did not have electricity to power household appliances like radios, fans, cell phones, TVs, buttermilk machines, coolers and lights.



Yashraj Khaitan, 22

Company: Gram Power

Mission: To bring affordable, efficient and reliable electricity to underserved markets in India.

KHAITAN AND Jacob Dickinson, company co-founder and chief technology officer, realized the potential to bring smart, sustainable power to underserved markets in India, but needed help to get started. They received that support from USAID and a few other organizations, and were able to launch their pilot project in India this May.

USAID selected Khaitan and Gram Power as one of 10 finalists to present and network at the LAUNCH energy forum on Nov. 10-13, 2011, cultivated under the partnership of USAID, NASA, the Department of State and NIKE. LAUNCH is a global initiative to identify and incubate the innovative

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Schools and Scholarships: Transforming Lebanon's Education System for All

By *Elias Al Haddad and Carol Brakhya*

AT AGE 14, Malek Haidar, a public school student in Lebanon, was on the verge of dropping out. “I skipped school any chance I got,” he says.

When one of USAID’s education programs organized after-school activities as part of a larger effort to improve the learning environment, however, he got involved in a school play and became motivated to do well in the classroom. “I would have never imagined a different life before, but now I know that, with hard work and education, I can do whatever I want to with my life,” said Malek after his participation in the after-school program. Two years later, Malek is more enthusiastic about school, and has successfully finished his intermediate school studies at Hawch El Omarah public school.

Before the 1975-1990 civil war, Lebanon boasted a proud and well-regarded public school system. After the conflict, however, resources and political attention withered and parents increasingly moved their children into private, often religiously affiliated, schools. Today a stunning two-thirds of Lebanese children attend private school. The one-third of Lebanese children who attend public schools usually cannot afford private school tuition.

The lack of financial support for public education has increased the gap between public and private education, leaving too many public schools with crumbling facilities, ill-prepared teachers and a poor public image. Although the public education system achieves high primary literacy rates, it also suffers



Teachers participate in classroom observation training at the American University of Beirut, Dec. 16, 2011.

high drop-out and repetition rates and poor primary-level completion rates, particularly among boys. Public school graduates are also more likely to enroll in the similarly under-resourced public higher education system, resulting in fewer job prospects than those available to graduates of the top-tier private universities.

Malek is one of more than 100,000 students in 313 public schools across Lebanon—almost a quarter of all public schools—who benefited from a

four-year USAID program called Lebanon Education Assistance for Development (LEAD), which ended in 2010. The program addressed the deterioration of school buildings and disruption of the educational system caused by the country’s 15-year civil war and subsequent unrest.

It significantly improved these schools and equipped them with much-needed computers and science laboratories, but discrepancies between public and private school systems remain prevalent.

Building on LEAD, USAID launched the five-year, \$75 million Developing Rehabilitation Assistance to Schools and Teacher Improvement (D-RASATI) program in September 2010, targeting all public schools across Lebanon. D-RASATI, an acronym that translates to “My Studies” in Arabic, is USAID’s largest project in the country and is jointly managed by Lebanon’s education ministry and USAID. Its goal is to show the Lebanese people that their government can provide equitable access to quality and affordable services.

While ambitious, USAID expects that every Lebanese public school, each of Lebanon’s 276,000 public school students, and hundreds of teachers will be impacted by the D-RASATI program. They will benefit directly from the physical rehabilitation of schools, new equipment, in-service teacher training, extracurricular activities, leadership development and community engagement in schools.

BY PROVIDING quality education and facilities to students in public schools, D-RASATI bridges the gap

between the more economically advantaged youth and their disadvantaged counterparts.

“In both the LEAD and D-RASATI programs,” says Denise O’Toole, director of USAID/Lebanon’s Education and Democracy, Rights and Governance Office, “USAID seeks to better equip students to enter institutions of higher learning and make them more competitive in the job market.”

The program carried out a nationwide school assessment to obtain baseline information on the state of public schools. USAID then rehabilitated 37 selected schools in line with education ministry standards in the fall of 2011, and has begun the second round of rehabilitation in an additional 154 schools for a total of 191 substantively improved schools.

Hammoud Al-Musawy, the principal of Nabi Chit School, which was upgraded by USAID in 2011, told a gathering of other principals: “The [USAID] team is serious. They came to my school and collected information on what we needed. They went to all the schools in Baalbek and did the same. Then they came back and gave me 55 million lire (or \$36,666) of improvements. I have a new school wall, a new playground My school is safe now, the students are happy, I’m happy. They did two other schools in our area as well, and they will do more. These people are serious, they do good work; we should appreciate it and give them a chance.”

The project staff also trains ministry staff to implement system-wide efforts aimed at improving learning in the classroom.

“I have 30 years of experience in teacher training. I thought this workshop was going to be a joke, and I



Photo by D.-RASATI/EDC

New water tanks at Ehmej Intermediate School installed by USAID. The solar panels for heating water were provided by the U.N. Development Program.

came resisting it. But honestly, by the end of the first day, I learned so much,” said Mohammed Daher, who attended the teacher classroom observation tool training in December 2011.

USAID’S SUPPORT for Lebanese students does not end with primary education. To complement D-RASATI, USAID also offers the University Scholarship Program, which helps promising public school graduates from geographically and otherwise diverse backgrounds pursue a college degree at one of three well-respected American-style universities in Lebanon: the Lebanese American University (LAU), Haigazian University and the American University of Beirut. The scholarships cover full tuition, housing, books, medical insurance, leadership skill development and a monthly stipend.

Since the program started with scholar recruitment in 2010, 117 Ambassador Merit Scholars have successfully completed their first academic

year, with more than a third earning places on the honor lists. An additional 103 new students are being selected for the upcoming academic year.

“Since my arrival to LAU, I have been learning, not only in the engineering field, but in the field of life,” said Saja Serhal, an Ambassador Merit Scholar at LAU.

Scholarships are offered in fields of study that benefit Lebanon’s development and provide prospects for meaningful employment, including business, education, nursing, engineering and information and communications technology. Students must also participate in community service projects, which sharpen their interpersonal skills and help them give back to their country.

“The scholarship did change my prospects. The goals I’d set before receiving the scholarship and before entering LAU were much different than the goals I have nowadays,” said

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Sylvester Bundoo, left, and Mahmoud Solomon put the survey skills they are learning in the classroom to use during survey practicals on the campus of the Kwame Nkrumah University of Science and Technology in Ghana.

LIBERIA'S FUTURE LAND EXPERTS

By Anthony Piaskowy

IT ALL STARTED with a bulletin in the local newspaper—“Help Rebuild Liberia, Earn a Master’s Degree.” Mencer Powoe, from Lofa County, had been looking for scholarship opportunities to study abroad. So when he saw the advertisement, he applied.

In 2011, Powoe was accepted into the program. He is now entering his second year at the Kwame Nkrumah

University of Science and Technology (KNUST) in Kumasi, Ghana, studying geomatic engineering.

“Before I began this program, I was working as an engineer on infrastructure projects for three counties in Liberia. I was also a teaching assistant at the University of Liberia,” explains Powoe, who earned an undergraduate degree from the University of Liberia. “When I learned about the chance to

earn a master’s degree through the USAID-led program, I applied right away. The opportunity will not only benefit my family and me, but it will benefit the entire country.”

Powoe and four other young people from Liberia are currently pursuing master’s degrees as part of a USAID program to strengthen the government’s capacity to administer land laws and policies across the country. The program is managed by USAID as part of a nationwide development plan funded through the Millennium Challenge Corporation Threshold Program, a U.S. Government development initiative. One of the main components of the program is rebuilding

land administration capacity to improve land rights and access.

Tim Fella, a land conflict specialist at USAID, explains the importance of this component to the program: “Clear access and secure rights to land are a fundamental component of USAID’s development agenda. In many countries, competition over land, and the resources found on land, drive conflict. Our work in Liberia and other countries demonstrates that rebuilding capacity in the land administration systems can help promote stability by reducing tension, and set the stage for productive investments and growth, which, in turn, can decrease conflicts.”

ADDRESSING LIBERIA’S land challenges after a 14-year civil war is complicated. The conflict ended in 2003 and left the country fragile. By some estimates, 300,000 people—10 percent of the population—were killed. The economy was in tatters; some government offices were completely destroyed; and electricity, roads, bridges and other basic municipal services were severely damaged. Despite some improvements, it is still difficult to provide basic government services and adopt new technologies. And professionals with all the necessary skills to implement reforms and meet the technical demands are also still in short supply.

Powoe pursued his studies throughout the war, but encountered frequent delays. At times, travel between his home and school was unsafe. But Powoe persevered. Due to the violence, many youth gave up on their educational goals or had no access to higher learning. In two decades, only a handful of young people received college educations. Much of the professional

workforce that remains in Liberia is preparing for retirement and is unfamiliar with the latest industry advances.

In the field of land administration, there are few Liberians with modern surveying skills. This knowledge gap makes it difficult to identify and accurately mark boundaries between property claims.

Through the master’s degree program, the USAID-sponsored students are learning to use current survey equipment, create digital property records and generate maps using field data and GIS technologies.

“Liberia’s land disputes result from a number of factors including: imprecise and overlapping land allocations, displacement and resettlement of populations as a result of the war, a shortage of qualified surveyors to demarcate land boundaries, and granting of state concessions with ill-defined boundaries and current occupation,” says Fella. “Thus, training these youth in land

surveying and mapping techniques will help improve the country’s ability to document and record property rights, thereby reducing the potential for competing claims and, ultimately, conflict.”

MANY OF LIBERIA’S disputes that continue today are over property rights. Whether it’s a battle over forest tree use or someone attempting to return to land they lived on before the violence began, property disputes occur daily. Even small conflicts result in burdens to the legal system and wasted resources that could be better used rebuilding the country.

“If we don’t solve our land issues, we will go back to war,” explained Powoe. “Reforms to Liberia’s land sector will lead to quick conflict resolution and bring peace and security to the country.”

After completing the program, Powoe and his Liberian classmates will return to their country and work for the

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Left to right, Mahmoud Solomon, Charles Kortimai and Mencer Powoe, Liberian classmates at the Kwame Nkrumah University of Science and Technology in Ghana, test out a new surveying instrument.

Photo by Mencer Powoe

Community ‘Parliaments’

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who deliver her mini-cakes on their motorcycle-taxis to nearby villages.

USAID IS DISBURSING small loans and grants through a competitive process to youth bunges as well as seed money through implementing partners for smaller activities. The Mariaini bunge received one such small grant to establish a learning resource center for the village with computers and a small library. But USAID’s involvement mainly serves as a catalyst for local support. In Mariaini, the bunge’s work so impressed the Kenyan Government that the Ministry of Youth is funding 90 percent of its greenhouse project.

The vast majority of bunge activities are organized without any financial support from USAID. Bunges collect dues from members and keep financial accounts. Most have bank accounts. The Mariaini bunge has used its own resources to build garbage pits around town and members regularly volunteer as garbage collectors.

The bunge is also trying to lure the youth away from the village alcohol bar. To that end, members have put together a dart room where, on weekend afternoons, they hold tournaments and charge a nominal admission fee. No drinking or smoking is allowed inside and the lines to play are always long.

Among those queued up to play is Joseph Chege, 26, another bunge member. He abused alcohol and drugs for years before the bunge work helped him give it up. “I now look forward to tomorrow,” he says. “Before, I drank all the time. I had no future.”

Bunge member Anastasia Kairu, 24, is considered one of the best dart players and feels empowered by her ability to compete with men. “You feel so proud, you give the men the challenge,” says Kairu. “It is not only the male who can play the darts, even the ladies can hit and win.”

BUT THE YOUTH don’t only work within their small village world. The Mariaini bunge is also participating in a Kenya-wide, youth-led campaign that is mobilizing youth across ethnic, linguistic, religious and cultural divisions. An

estimated 5 million of Kenya’s 12 million youth do not have national identity cards. Without these ID cards, they cannot apply for a formal job, open a bank account, access mobile money transfer systems, enter a government building or vote. USAID, in partnership with the Government of Kenya’s National Registration Bureau, has launched My ID My Life to mobilize youth across the country to assist their peers in navigating the complex ID application world.

The campaign has become a focal activity for bunges across Kenya. In Mariaini, Ngethe’s mobile phone number is penned in on My ID My Life posters. The posters are displayed on almost every wall on the main street—including the local latrines. The Mariaini youth coordinated with their regional district registration officer to bring a mobile ID registration unit to their village, registering over 30 youth in one afternoon. They are planning another ID drive before the voter registration period ends in October.

In the near future, bunge members will be invited to support voter registration, train as election observers and help organize community peace-building forums.

In Mariaini, one of the proudest people is the village chief.

“In the years to come, we are going to produce leaders and we’ll have a better community tomorrow,” Stephen Kio insists. “My administrative work will become easier and I’ll be sleeping very comfortably because I’ll have a better population, more informed and also more economically empowered.”

In Mariaini and across Kenya, youth now believe they can change society.

“USAID has helped us mobilize youth,” says Risper, the Elgeyo-Marakwet County Forum president. “It has had a huge impact. We have never had such a forum before.” ■



Photo by Henry Boachi, MSI/USAID

Mariaini Bunge member Patrick Githongo volunteers at the community dump site.

DRC

continued from p. 9

be beaten by their husbands. Therefore, young people who witness these acts of violence on a regular basis need to be provided with alternative views of gender, masculinity and human rights.

BUNYAKIRI IS an isolated village, more than a two-hour drive from the nearest big city, along dangerous, muddy roads and nestled in a valley surrounded by dense Congolese jungle. At the high school here, children say they are absorbing the lessons from the project.

“I know that we must not reject women who have experienced sexual violence or, if they have HIV, we should still welcome them into our homes,” said Solange*, a 10th grade girl.

“Marriage when you are younger than 18 is forbidden. I have spoken to my parents about this and have told my younger sisters so that none of them will make the mistake of getting married too young,” said Lucien*, a 10th grade boy.

“In this sense, project participants are expected to become champions against gender-based violence within their families and communities. With the help of USAID, the next generation of students at Bunyakiri High School may grow up free from the threat of gender-based violence,” Radice said.

A project that seeks to bring about such a significant shift in attitudes and behaviors inevitably faces many challenges. Low participation by girls was a particular problem, and the International Medical Corps has been finding innovative ways to encourage more young women to get involved, such as initiating the girls-only soccer matches.



Photo by J. Harris, International Medical Corps

Young people in the village of Bunyakiri, eastern Democratic Republic of Congo (DRC). By helping young people to develop positive beliefs and attitudes, a USAID project can prevent future acts of violence, and contribute to peace and equity in DRC.

Once the young people are informed of their rights, girls, especially, become upset about the inequalities they face. One girl who attended a sensitization session in Bunyakiri became very upset that her four brothers were going to school while she and her two sisters had to work in the fields to earn money to send them there, recalls Florence Iloko, an International Medical Corps community mobilizer working on the project.

The project in Bunyakiri has worked with over 900 young people to date directly through sensitization sessions and activities. More than 7,500 community members have come along to support the teams during the girls' soccer games. Similar projects are currently

underway in five other sites across eastern DRC, reaching thousands of young people from across the region.

While formal impact assessments have not yet been conducted, community leaders have reported a reduction in forced and early marriage since the program began.

“The most obvious change I have seen is that the girls don't let the boys tell them what to do anymore,” said Jean Marie Katangwire, 49, principal of Bunyakiri High School. ■

Josh Harris is with International Medical Corps, based in Los Angeles.

*Last names of individuals under 18 years old have been withheld to protect identities.

Innovators

continued from p. 19

work of entrepreneurs to find solutions to urgent global challenges. At the event, Gram Power received support from a range of thought leaders.

“LAUNCH was definitely one of the critical points in our engineering career,” Khaitan said. “We received input from an amazing network of people who not only give us great feedback, but also go out of their way to help us take our ideas to the next level. This motivated us to move ahead and we have since launched India’s first smart micro-grid only six months later.”

Khaitan said that although LAUNCH itself simply provided a platform for development of the micro-grid, Gram Power received its first round of investment from a LAUNCH council member, and the connections established at the forum hold the door open for continued guidance and support.

THE LAUNCH EVENT led to Gram Power’s first micro-grid installation and electrification of the Khareda Lakshmi-pura village on May 28. This village has 25 homes, each with a family of five to seven people. Now, these families no longer have to rely on kerosene, which releases pollution and causes household fires, nor do they have to pay a runner to charge their phone.

Khareda Lakshmi-pura’s new energy generation station can power homes within a 2-kilometer radius. Notably, Gram Power’s smart micro-grid can be adapted for communities from 50 to several thousand homes, and can interface with any form of energy generation—such as solar, biomass or wind.

After this central infrastructure, consisting of several solar panels mounted on the ground with the generation station in an adjacent room, is installed in a community, Gram Power installs

distribution lines to transmit power from the generation station to every home. Each home is installed with a pre-paid meter with intelligent software that monitors the consumer’s power consumption and optimizes supply and demand of power. Through this meter, customers can choose from a variety of connection types and payment plans based on their energy needs. Then, using the connection supplied to their homes, consumers can operate electrical appliances, as well as higher power appliances (such as water pumps and motors) through community meters.

How the pre-paid system works and delivers power to each home is simple: Gram Power calls it its entrepreneur model. A local entrepreneur buys bulk energy credit from Gram Power at a discount—for 5,500 rupees (\$99) of energy credit, Gram Power charges only 5,000 rupees (\$90). This credit is then transferred to a wireless energy wallet designed by the company and owned by the entrepreneur. He or she uses this wallet to sell power to local customers in small increments of 20 rupees or more as required, which the pre-paid meter loads and regulates. To exemplify costs, Khaitan said 50 rupees of recharge can buy up to 200 hours of high-quality lighting and cell phone charging.

THE SMART micro-grid installed in Khareda Lakshmi-pura has given the community the electricity services it needs to power its homes. The initial results show that as energy demands are met, incomes increase and electricity demands likewise increase. This domino effect, says Khaitan, allows for greater connection to the modern information economy and sparks development.

Because of this initial success, Gram Power is conservatively targeting to

reach 200,000 families or 1.4 million people by the end of 2016.

The company’s nascent efforts are its first steps on the path to rid rural villages of one of the greatest hindrances to development—unreliable access to electricity. The technology not only provides power to the electricity-dependent machines deemed necessary for development—such as lighting, radio and mobile phones—but Gram Power also says its ideas are raising the bar due to its model of sustainability.

“We create grassroots employment through this model,” Khaitan said. “We employ local entrepreneurs to get the power from us and sell that power in their community. We wanted to create an ecosystem where the village has complete ownership and can maintain the micro-grid on its own.”

While entrepreneurs score profits from the discounted energy they sell, Gram Power likewise plans to increase its revenue. However, profit margins will likely take a few more months, Khaitan forecasts, as the company explores different business strategies.

With his detailed and extensive plan for Gram Power’s future, Khaitan does not give the impression of a newly minted college graduate.

“Young people have a great energy and enthusiasm to add to the sector,” Khaitan said. “We are more willing to experiment and explore. I feel we have great potential to make a profound difference because we seldom think a lot before taking risk. And that’s what a lot of sectors need to solve these unanswered questions.”

“But we cannot do it by ourselves, which is why we need partnerships and investors,” he added. “We got that through LAUNCH and its support of our idea. [Programs] like LAUNCH are a great boost to the kind of work that we are doing in the developing world.” ■

Lebanon's Education

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Fidaa Fakih, a business student at LAU. "Today, I think about how I can benefit my community, about how my studies in business and being part of social organizations can make my society become a better place to live in."

In a recent article in *The New York Times*, Thomas Friedman wrote: "If America wants to connect with the real aspirations of these [Arab Spring] revolutions, it will expand to other Arab awakening countries the \$13.5 million U.S. Agency for International Development scholarship program begun in Lebanon." The credit for this vision, he continues, is shared between the executive branch and Congress, which put aside the money for this project.

In Lebanon, future higher education programs are expected to continue the focus of providing academic opportunities to at-risk students, demonstrating U.S. commitment to providing better options for Lebanon's youth, or, as Ambassador Maura Connelly calls them, "Lebanon's future leaders."

Officials in both countries say the partnership between USAID and the Lebanese people to improve education that started 50 years ago remains strong today.

"The Lebanese and American people share a deep and abiding appreciation for education and the role it plays in shaping our children and, in effect, our future," says Connelly. "I can think of no better investment by the United States in Lebanon than in education, in the youth of this country, who constitute the promise of a better tomorrow." ■

Liberia's Land Experts

continued from p. 23

government to implement reforms in the land administration sector. USAID is helping the government's land administration office gain access to technologies such as computers, software licenses, survey equipment, electric generators and other items—all necessary for the students to apply their knowledge in the field.

While on semester break this summer, Powoe and his classmates returned to Liberia and completed a demonstration project. They used the new equipment and software to complete a land rights map for two neighborhoods in Monrovia, Liberia's capital. While using their new skills, students carefully monitored the time it took to complete the project so they would have a baseline for future work. During the survey portion of the project, they worked alongside current government staffers so the older-generation land specialists could begin to learn the new methods and equipment.

As a condition for receiving the education scholarships from USAID, the students, after completing their degree, will help faculty and other officials at the University of Liberia develop a new curriculum in land surveying and administration. This will ensure that the new skills are passed on to other young Liberians and it will also help achieve USAID's goals of building strong local capacity.

Powoe proudly says: "When I return to Liberia after completing my degree, I want the knowledge I have to multiply. I want to teach others basic survey methods and computer mapping. I want to advance my country forward by training the next generation of government workers and leaders."

When asked if he thinks someday he will be a university faculty member teaching land administration, Powoe laughed and said: "Well, that would be quite nice, wouldn't it?"

For Liberia, its entire people, and especially its youth—yes it would. ■



Survey practicals on the campus of the Kwame Nkrumah University of Science and Technology in Ghana are part of the coursework in the geomatic engineering program.

Photo by Mencer Powoe

MESSAGE FROM
USAID Mobile Solutions Team

WHAT'S POSSIBLE IN MOBILE

By PRIYA JAISINGHANI
and
CHARLEY JOHNSON

THE mobile phone sitting in your pocket has more computing power than the first computer, and all of NASA in 1969 when it sent two men to the moon. As mobile technology becomes faster, cheaper, lighter, smarter and truly ubiquitous, the possibilities are difficult to imagine.

If Moore's Law—that computer power doubles every 18 months—holds true, the cell phone your children or grandchildren will use in 25 years will be 1 billion times more advanced than your smartphone. While it might be impossible to peer into the future, we don't have to look far to see the impact of mobile technology in our lives.

The speed of mobile phone adoption is unprecedented. It took the radio 50 years to reach an audience of 50 million people. It took the television 13 years and the Internet seven years to meet this mark. It took the mobile phone *three* years.

Today, there are nearly 6 billion mobile phone subscriptions worldwide. This has transformed how we connect to one another, collaborate and communicate. You only have to think back to the last time you left your mobile



phone at home to realize how deeply we depend on our devices. But the degree to which mobile technology influences our daily routine pales in comparison to its transformative impact on development.

Just as roads, railways and the Internet transformed markets and unleashed waves of innovation, mobile technology is radically changing how the world's poor interact with one another, the private sector and their governments. It has created a platform for new ideas, new business models and new modes of communication and collaboration. Already, mobile technology has lowered the barrier of entry for the private sector and a cavalry of eager entrepreneurs to provide commercial applications like

mobile money and mobile information services to farmers, mothers and small businesses.

These applications benefit from scale. In Africa, there were 49 million mobile phones in 2002. Fast-forward nine years to today: there are 500 million. By 2016, there will be an estimated 1 billion mobile phones in Africa. This represents a

powerful opportunity to re-imagine how USAID works—from who we partner with to how we design, implement and evaluate programs—or risk wasting perhaps the greatest opportunity of our generation.

THE CONNECTIVE power and ubiquity of mobile technology can accelerate and deepen development outcomes. In this issue of *FrontLines*, you will see examples of this.

Mobile money, for example, has the power to do for entrepreneurship what commercial banking did for the industrial revolution. But

mobile money is struggling to scale in most countries. In order to drive widespread adoption of mobile money to replace physical cash, our development

GO ONLINE
*for a slideshow of
mobile tech photos*

programs—from agriculture to health to infrastructure—should more aggressively encourage use of mobile payment services.

In Kenya, roughly 1,000 innovative businesses exist because they integrated with the pioneering mobile money transfer service M-PESA to lower costs enough to extend critical services to people in remote areas. In other words, if we're successful in this effort, we can fundamentally change our approach to service delivery, shifting the question from 'how can we effectively deliver services?' to 'how can we enable others to run us out of the service delivery business?'

You will also see that promoting mobile solutions requires a new set of partnerships and new ways of working with the private sector. The global mWomen initiative is a partnership between USAID, VISA, the Cherie Blair Foundation, and GSMA, the association of over 800 mobile phone companies worldwide. You might think that mobile phone companies would be able to close the prevailing gender gap—300 million fewer women have phones than men—on their own. They're not. In fact, donors like USAID worked with mobile network operators to lower cultural barriers to women's ownership, to design products and a marketing toolkit targeted toward underserved women, and to bring women into the retail stream of the mobile value chain. The mWomen initiative has shown that honest dialogue and negotiation with private sector players can lead to meaningful, high-impact outcomes.

USAID's mobile solutions team turns one year old this September. As we reflect on the last year, we're excited about how far we've come. In mobile

money, we are working with nine missions to develop distinct mobile money programs, partnering with Citigroup to accelerate mobile money ecosystems, and creating the Better Than Cash Alliance, a coalition of corporations, international development organizations and governments that will commit to transitioning from cash to electronic payments in their programs and operational processes.

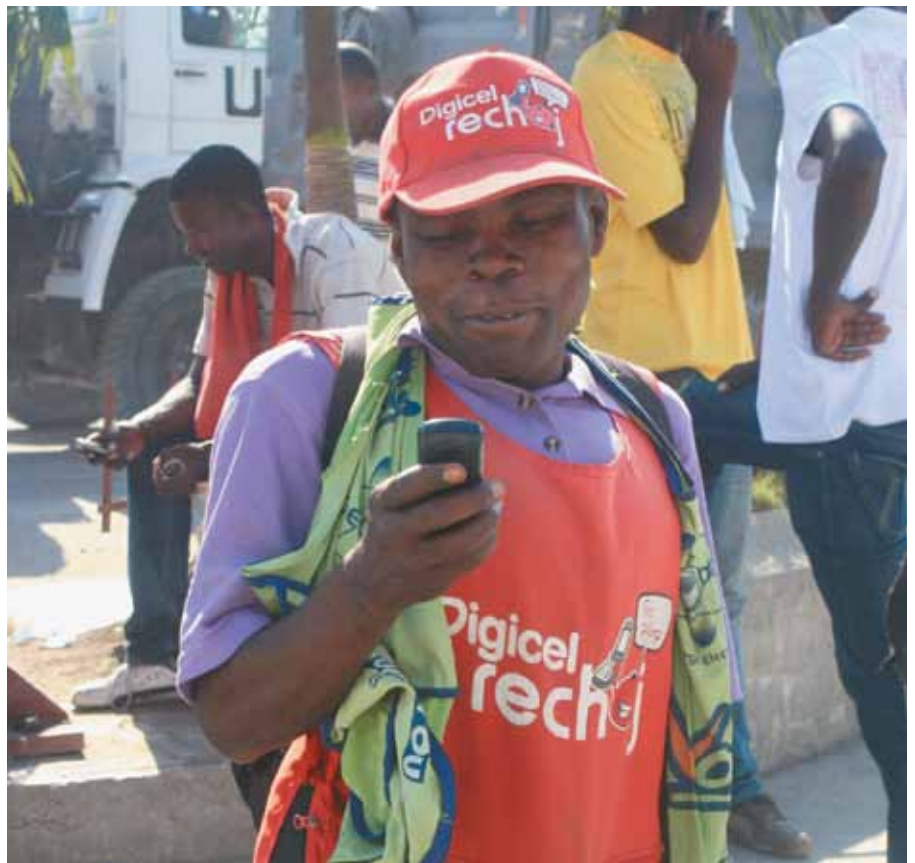
In mobile access, we are working with the mWomen initiative to close the gender gap in access to mobile phones, the Alliance for Affordable Internet to reform regulatory policies to ensure people with access to broadband can afford to use it, and the Global Broadband Initiative to assist universal service funds to expand the reach of broadband to off-grid locales.

This work, together with important initiatives like mFarmer, mEducation Alliance and the Mobile Alliance for Maternal Action, makes USAID a leader in mobile solutions.

We're even more excited about the year ahead.

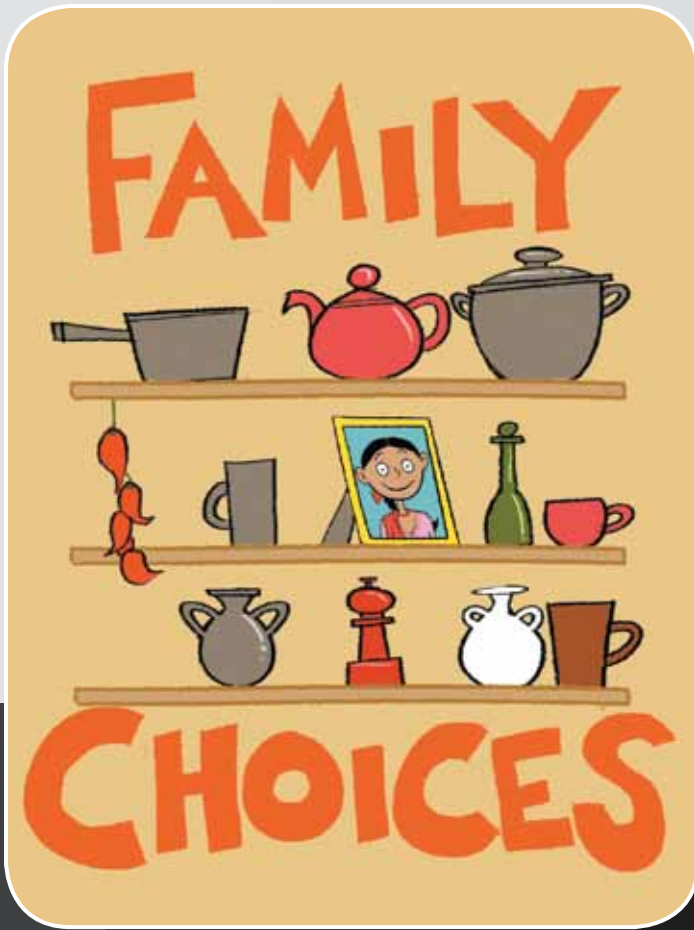
If we re-imagine how USAID does business—if we integrate mobile technology across our programs, as well as identify and leverage new partnerships—then the accuracy of Moore's Law will not matter. The potential impact of our work will indeed be limitless in its scale and unmatched in its pace. ■

Priya Jaisinghani is director of mobile solutions in USAID's Office of Innovation and Development Alliances, where Charley Johnson is a presidential management fellow.

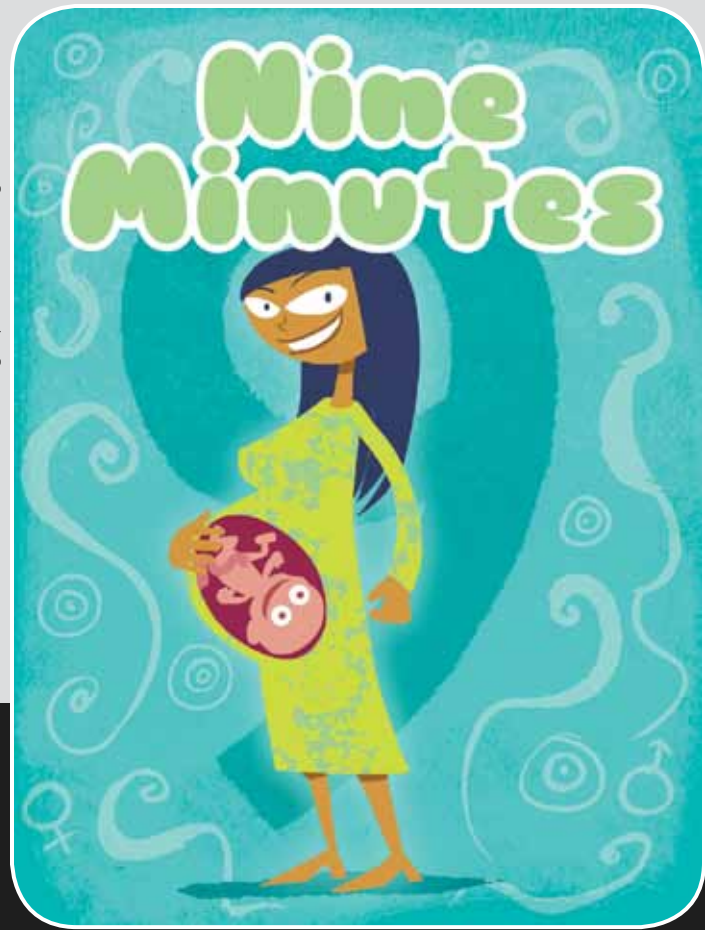


A phone-card vendor looks at his mobile phone on Feb. 28, 2011, in Port-au-Prince, Haiti.

Photo by Jayanthi Narain, USAID



Family Choices mobile game



9-Minutes mobile game



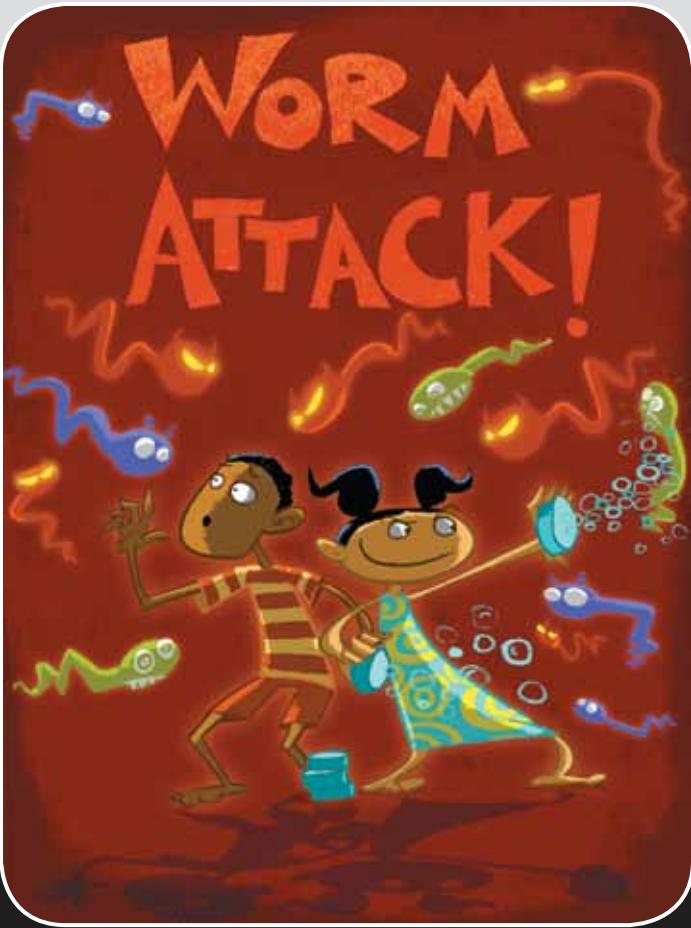
BIG CHOICES ON A Can Mobile Games Really

By *Kara E. Tureski*

MEET ANU, a 13-year-old girl who lives with her mother, father and brother, Binod, in rural India. Like many teenagers, Anu will be barged with a series of choices such as

whether to stay in school or to leave in order to help her family; whether to marry before completing her education; whether she and her husband should use family planning; and when they should start their family. All of the decisions will impact Anu and her family's future.

The only difference between Anu and millions of other teenagers in the developing world is that she is made of bits and bytes instead of flesh and blood. She represents a new push by USAID and the international development community to parlay the rapid expansion of mobile devices—and the mobile games



Worm Attack! mobile game

SMALL SCREEN: Spark Change? ↻

that keep their users engaged—into a resource for development.

“Family Choices”—Anu’s milieu—was developed as part of the USAID-supported Half the Sky Movement, a multi-donor, multimedia platform developed by film and game producers Show of Force and Games for Change, in

collaboration with Nicholas Kristof and Sheryl WuDunn, the Pulitzer Prize-winning authors of *Half the Sky: Turning Oppression into Opportunity for Women Worldwide*.

USAID supports the initiative through the C-Change project with a \$1.4 million investment that has produced 18

short education and advocacy videos for use in India, Liberia, Somaliland and East Africa, and three hand-held mobile games developed for India and East Africa on topics as diverse as family planning and reproductive health, maternal and child health, girls’ education, domestic violence and other gender-related themes.

In *Family Choices*, a three-episode game, players watch as Anu grows up and makes decisions related to staying in school, gender issues, distribution of household responsibilities and challenges related to poverty. A positive decision leads to a golden leaf and another step toward independence and empowerment, and allows the player to progress to the next episode. Negative choices put unadorned leaves in the player’s family tree, and lead to an invitation to repeat the episode to explore multiple pathways and their respective endings. As the game progresses, as in real life, the choices get harder. Episodes two and three also address early marriage, pregnancy, family planning and pursuit of higher education.

Says Asi Burak, co-president of Games for Change, “Social games offer a unique way to reach your audience in a way that is not didactic or preachy. By playing a role and making choices, players are participating in a rehearsal for life. They experiment with scenarios and consequences that may be part of their future, and at the very least, this experience triggers reflection, debate, and a new perspective on their present situation.”

The overall aim of *Family Choices* is to enhance the perception of girls’ place in and value to families, with an emphasis on keeping girls in school. This game and others created under this initiative build upon principles consistent with social learning theory,

which asserts that people learn through observing others' behaviors and attitudes.

THERE ARE 6 BILLION mobile phone subscriptions worldwide and three-quarters of them are in developing countries. It is that near-ubiquity of the technology that the coalition is trying to harness with Family Choices and two other games that use social learning theory to engage players around the topics of pregnancy health, child health, girls' education and empowerment.

"9-Minutes" simulates the experience of nine months of pregnancy in nine minutes. The game presents players with a series of physical, medical and social choices in a race against the clock. Players race to collect icons that represent pregnancy "do's" for a particular month of pregnancy and to

avoid icons representing the pregnancy "don'ts." The player's choices on topics such as having a birth plan, gaining family support, nutrition, getting antenatal care, and going to a health facility for delivery, determine the health and well-being of both the mother and her baby.

Maternal and child health are essential issues in both India and East Africa where the games will be distributed. In 2005 to 2006, the infant mortality rate in India was 57 for every 1,000 live births, and only 38 percent of live births occurred in health facilities. In Kenya and Tanzania, the lifetime risk of maternal death is 1 in 55 and 1 in 38, respectively. Infant mortality rates in both countries are also high.

"I would share the game with all pregnant women I know because it has a lot of information and it was fun to



Photo by Ed Owles, Worldview

Students play Worm Attack!

play," said a 29-year-old Indian woman*, nine months pregnant, on her experience playing 9-Minutes.

In "Worm Attack!" young players, their teachers and their families work to rid themselves and their communities from infestation of intestinal worms, a problem that leads to diarrhea, anemia, internal bleeding, malnutrition and other symptoms. Worms affect 600 million school-age children worldwide, and studies show that those who are regularly dewormed are more likely to stay in school, have higher rates of literacy, and have greater earning potential.

ALL THREE GAMES use two common models to achieve social impact—adventure and simulation. Players are exposed to characters that can serve as role models, and will be rewarded for positive actions, such as killing the worms inside their stomachs or seeking antenatal care. Players also face choices, such as making decisions that lead to a delay in marriage and betterment of the family.

The three games, produced with game studio Mudlark and publisher



Photo by Ed Owles, Worldview

Above and facing page: Students play a mobile game in Kenya. USAID, as part of the Half the Sky Movement, is promoting the use of mobile games to spark behavior change in select countries.

E-line media, will be launched in September for use on feature phones in India, Kenya and Tanzania, and will be produced in English, Hindi and Kiswahili. Their roll out will be accompanied by short educational videos for use in local community health and gender programs. The games will also be available through in-country mobile phone app stores for free. The Half the Sky Movement estimates that, with continued funding, 1 million users will be reached with these products.

Phones that support basic Java are most commonly used in the target countries, increasing access to the game through mass distribution channels. But there are still accessibility issues based on cost to download, Internet access, and the sharing of a single phone by multiple users. To help address accessibility barriers and to increase the impact of the games, they are being packaged with related videos and a facilitator's manual. It is generally recognized that games will have a greater impact when used as

part of a larger health, gender or education strategy.

Preliminary testing of Family Choices in Kenya found the games were positively received. One woman* who played the game said her favorite part was when “Mercy [Kenya’s version of Anu] stood her ground and she didn’t let anyone interfere with her dreams.” ■

Kara E. Tureski is with FHI 360’s C-Change Project.

*Name withheld for privacy reasons.



Photo by Ed Owles, Worldview

Conservation Texting

By Andrew Watson

Pilot SMS-based service is sending individually tailored irrigation advice directly to cell phones to help Moroccan farmers save precious resources.

Thursday April 5 Good morning in Berkane. Yesterday maximum temperature was 20 and minimum 9 degrees and rainfall was 0.0 mm. For citrus orchards, apply 25 cubic meters per hectare or 50 minutes if pump output 30 m³/hour/ hectare.

For the first time in Morocco, messages like this, translated from French, are helping to shape good agriculture practices, popping up on the cell phones of a group of farmers each morning in a USAID pilot program. The new service—daily irrigation advice delivered to a mobile inbox—is already changing lives for the 500 early adopters in the eastern region of the North African country.

Mohammed Azzimani, a 52-year-old farmer in Berkane, now knows exactly how much to water his potatoes and tomatoes on a specific day.

“We live in a semi-arid land characterized by water scarcity. We are called upon at every occasion to use water wisely. Before, I didn’t know how much water I need to use for my potatoes and tomatoes. Now, I get a daily SMS telling me exactly the amount of water according to the weather condition,” he said.

The service, which was developed by the USAID Morocco Economic Competitiveness (MEC) program and launched in February 2011, is capitalizing on the recent exploding numbers

of Moroccan households that own at least one mobile phone.

“While the service is not meant to replace important face-to-face agricultural assistance, text message delivery is without a doubt the most cost-efficient way to put relevant information into the hands of farmers on a daily basis,” said Fouad Rachidi, manager of the program’s agricultural activities.

The daily advisory service, which pulls information from automated weather stations that provide data to remote computers via mobile phone systems, promotes innovative irrigation techniques based on rainfall, temperature and evaporation rates to determine water requirements for specific crops.

It also directly complements the Moroccan Government’s broader initiative to conserve precious water throughout the country.

MOROCCO, LIKE much of North Africa, is semi-arid, but also heavily rural. In spite of the dearth of water, almost half of the population depends on agriculture to survive. According to Morocco’s Agricultural Development Agency, 70 percent of Moroccan farms cover less than 5 hectares (roughly the size of 11 American football fields) and many are struggling to survive.

The Moroccan Government is planning on investing about \$2 billion in

agricultural development through 2023, including funding the transition to more efficient irrigation methods. The text alerts are just one part of a greater effort to promote agricultural best practices.

Until recently, Morocco’s regional agricultural development agency delivered water to farmers using *tours-d’eau* (water days), scheduled roughly every three weeks, depending on the season. During these water days, farmers would receive a fixed amount of water and use the entire amount to flood their fields.

Now, instead of the water days, farmers are installing water storage basins and more efficient drip irrigation systems.

The Ministry of Agriculture is promoting conversion to drip irrigation in all of Morocco’s main agricultural areas. In the Oriental region, where USAID is piloting the text irrigation advisory service, agricultural water authorities have established more than 1,000 water storage basins. Government subsidies cover 80 percent of the cost of setting up a drip irrigation system, and for farms smaller than 5 hectares the subsidy can reach 100 percent.

“Drip irrigation is more efficient than other methods the farmers were using, but farmers still need to know how much water to use,” said Mustapha El Haiba, the program’s water resources specialist.

Depending on daily weather conditions, crop water requirements change from one day to the next. Some of those daily variations can be substantial.

El Haiba explained, “Farmers need to base their irrigation practices on current weather data and the specific needs of their crop during a given

time in the growth cycle. The new SMS service meets that need.”

BEFORE THE PROGRAM, only one weather station was operating in the area. An operator had to be present every day to record manually the data on maximum and minimum temperatures, rainfall and other factors, and communicate the information to the regional office by phone, fax or radio. USAID supported the acquisition of three weather stations that record all these data automatically. Technicians can access the data remotely using the mobile phone network.

The previous day’s data are downloaded from the automated weather stations and a program computes water requirements for each individual crop. Then, because the database contains a wide array of information on each participating farmer’s individual crops and farms—including planting dates, type of irrigation and pump output—the program delivers specially tailored, crop-specific water needs to each farmer’s cell phone.

Says Omar Nejari, a small-business owner who has been working with USAID to promote the service: “Farmers have been receptive to the irrigation advice and there is growing demand. Not only do the farmers save money because they use less water, but they also economize on the cost of energy for pumping water since less water is needed. Farmers also expect to see higher crop yields from drip irrigation

following SMS recommendations because they can avoid stressing the crops during hot, dry weather and can optimize fertilizer application.”

Nordine Mahrach, the 35-year-old manager of the Tarifit farm in Mou-

much as 30 percent,” says Edgar Ariza-Niño, the program’s monitoring adviser. “Finding ways to save water is critical for Morocco, where climate change is projected to reduce overall water availability by 10 to 20 percent during the coming decades. We believe innovative initiatives [such as this] in conjunction with far-sighted agricultural development policies ... will help Morocco prepare now for future challenges.”

NONETHELESS, the pilot phase of the program has revealed a number of challenges. Farmers say that adjusting pumping time each day is more complicated than following the current same-time-every-day practice. Some find it difficult to convert the recommendations about cubic meters per hectare. The process involves multiplication by the number of hectares, division by the pump output, and additions to the initial water meter reading to arrive at the final stop reading.

To address this problem, training sessions and farm visits are being conducted by program staff and the Ministry of

Agriculture’s field agents to help farmers estimate the hourly pump outflow with and without water meters. During the next couple of months, regional agricultural authorities and USAID program staff will monitor a group of farmers receiving text irrigation advice to determine whether irrigation water consumption behavior differs from that of farmers not getting text messages. ■



A technician from the Ministry of Agriculture tests a weather station installed by USAID in the Moulouya irrigated perimeter in the Oriental region.

louya, has been thrilled with the results of the service. He points out that, for the first time, he now “has concise guidance on the daily irrigation needs of the various crops based on weather conditions and the stage of growth.” He expects to see tangible benefits in the coming months when the crops are harvested.

“Farmers that follow our advice can reduce their water consumption by as

A photograph of a colorful motorboat on the water. The boat is decorated with various patterns and colors, including blue, yellow, and red. Several people are on board, including a man in a white shirt at the helm, a woman in a blue shirt, and a man in a brown vest. The boat is moving across the water, and a large blue ship is visible in the background.

For Text-Savvy Filipinos, Mobile Banking Is a Crucial Bridge

With over 90-percent mobile phone coverage, but few physical banks, text-based banking means nearly 400,000 of the archipelago's rural residents can easily access crucial services for the first time.

FOR A long time, Lolita Singahan greeted paydays with a mix of relief and anxiety—relief, because it meant receiving money to cover her family's expenses, and anxiety, because it meant she would need to spend an entire day traveling to the bank to get her paycheck.

Although she makes about \$800 a month, which is way above the minimum pay in the Zamboanga Peninsula region in Mindanao, Singahan still needs additional funds to support her children's education. She has found refuge in the loan program of 1st Valley Bank for almost six years now.

Singahan, a 52-year-old school teacher in Olutanga Island, Zamboanga Sibugay province, is the recipient of a salary-supplementing loan from 1st Valley Bank. Every payday, the loan payment is automatically deducted from her salary account. To withdraw the balance, Singahan needs to make a six-hour journey to and from the bank. This means taking a motorcycle to the port of Hula-Hula in Olutanga Island, followed by a 10-minute boat ride to the port of Guicam, then a three-hour motorcycle or bus ride to the municipality of Imelda

Townfolk take a boat to get to and from mainland Zamboanga Sibugay, which used to be part of Lolita Singahan's six-hour trip to collect her wages as a school teacher in the Philippines.

where the 1st Valley Bank branch is located. The one-way trip on mostly unpaved roads takes more than three hours and costs her \$4.50 if she travels by bus, or nearly double that via motorcycle.

“It takes longer to get to Imelda by bus because of the frequent stops. I want to be back to Guicam before it gets dark, so I prefer taking the motorcycle even if it is more expensive,” she says. Singahan schedules her trip on Saturdays to avoid missing work.

Norman Florida, manager of 1st Valley Bank’s Imelda branch, sees firsthand how taxing the trip can be. “There are times when the teachers come to our office drenched, either because of the rain or the roads are so bad that their motorcycle overturned straight into the puddles of water or into the irrigation canals. Sometimes, they would spend an extra half-hour at our office drying their clothes, important documents and the contents of their wallets before making the trip back to Olutanga.”

Borrowers who are part of the same loan program as Singahan were the first clients that came to mind after Florida received a USAID training course on branchless banking. Held in late October in Surigao City last year, the course trained bank staffers on how to promote mobile banking.

The training is part of the greater Microenterprise Access to Banking Services program launched by USAID 15 years ago to make financial services available to microentrepreneurs.

Implemented in partnership with the Rural Bankers Association of the Philippines and overseen by the Office of the President through the Mindanao Development Authority, the program trains rural banks in microfinance best practices, helping them provide

microentrepreneurs, farmers and low-income clients with small loans, deposits and insurance services.

In 15 years, these banks have disbursed over 3 million loans totaling approximately \$1 billion to more than 1 million new borrowers.

Eight years ago, USAID added a focus on enabling banks to offer mobile banking services so their clients could more easily pay their loans, and make deposits and withdrawals. In a country made up of over 7,000 islands, but with extraordinary mobile coverage, it was a logical step towards the goal of bringing more of the country’s poor into the financial fold.

“Since then, the groundbreaking effort has been instrumental in easing the lives and expanding the opportunities of thousands of citizens in remote areas,” says USAID/Philippines Mission Director Gloria D. Steele.

OVER THE PAST two years, educating citizens on how to use mobile banking services has become a critical USAID focus. “To support this effort, we are helping train rural banks on how to provide better services to the underserved.” says USAID/Philippines Microfinance Specialist Tess Espenilla, who manages the project.

At least 28 staffers, supervisors and officers from three pilot rural banks—1st Valley Bank, Cantilan Bank and GM Bank—completed the training, which has enabled them to better educate more clients on using mobile banking. 1st Valley Bank is a pilot bank under the financial education initiative, and clients like Singahan are

taught how to make withdrawals using their mobile phones from their homes or workplaces.

As part of its pioneering efforts, USAID supported the design of the financial education materials, including user guides, posters, tri-fold stands and illustrated books, to raise awareness and encourage the use of mobile phone banking services.

The new education effort is also supported by Microfinance Opportunities, a Washington-based, non-profit microfinance organization, and The MasterCard Foundation, which seeks to advance microfinance and youth learning to promote financial inclusion in developing countries. This is part of a range of mobile banking services developed by the USAID program in partnership with the private sector and supported by the Bangko Sentral ng Pilipinas.

STEELE SAYS THAT, overall, the use of mobile banking services is helping rural bank clients save time and money. Borrowers can use their mobile phones to pay their loans from wherever they are and access their money without having to go to the bank.

Financial education messages—like the value of saving regularly and how to create savings plans—are sent weekly to clients as part of the program’s services.

Now that she is enrolled in the mobile banking service, all Singahan has to do is text withdrawal instructions from her mobile phone to the bank each payday. The bank checks her balance, then sends the

“We live in a world where you don’t need a bank in your neighborhood to safely store your money...”

requested funds in the form of mobile money to Singahan's "mobile wallet." As soon as she receives the message on her phone confirming the amount has been credited, Singahan goes to the cash-in cash-out outlet nearby to convert her mobile money to cash in hand.

"I only started withdrawing money through text last November 2011, and I have been very happy with the service," she said. "Imagine, I can save almost \$17 each payday since I do not need to go through that long and tiring trip to get my money from the bank."

For 1st Valley Bank, the mobile banking system allows its branches to extend their services to areas off the

physical banking grid, like Olutanga Island. According to Samson Cababan Jr., microfinance head of 1st Valley Bank: "The mobile phone banking system has not only allowed us to deepen our customer relationship and offer clients a more convenient way to bank, it has also allowed us to expand to areas that are underserved and untapped."

"CONNECTING MOBILE phone technology and rural banking services has produced astounding results," says Steele.

As of April 2012, 75 Philippine banks were accredited for mobile banking, with nearly 1,170 bank branches and sub-offices offering the service to

over 390,000 combined rural bank clients. The number of mobile banking transactions through rural banks from 2004 to July 2012 has reached over 3 million, with a total value of over \$400 million.

Helping the initiative along is the fact that Filipinos are avid mobile phone users. Some countrywide ownership-rate estimates top 100 percent, since many people have more than one device. In fact, the number of mobile phone subscribers in the country far exceeds the number of bank account holders, which is only 34 million.

Another key factor is that Filipino remittances, estimated at 20 billion pesos (or roughly \$476 million) in



Photo by Ronald Enad, 1st Valley Bank

Residents of Olutanga Island like Lolita Singahan travel over unpaved roads spewing dust in summer and turning muddy during the rains.

Photo by Ronald Enad, 1st Valley Bank



School teacher Lolita Singahan no longer needs to take a grueling, six-hour trip to withdraw her salary from the bank since using mobile banking, an initiative pioneered by USAID in partnership with the private sector in the Philippines.

2011, are growing. Within the Philippine islands, citizens are constantly looking for the fastest and most cost-efficient way to send money to their loved ones, since every peso counts.

Says Espenilla, “USAID’s partnership with the private sector, including mobile service providers Globe Telecom and Smart Communications, contributed to the program’s success.” Likewise, she says, “The support of regulators, particularly the Bangko Sentral ng Pilipinas, towards navigating the uncharted system and empowering the rural banks provided pillars by which the project stood strong.”

She adds: “All players—the banks, the retail agent network, e-service provider, vendor network, and the end-user—must have sufficient incentive to participate in the mobile money ecosystem. It is important for clients to develop trust in mobile money. They need to know and experience the process to get into the loop. And when

demand is created, it must be met by easily accessible and reasonably priced supply. Scale is important—the system must be widespread for citizens to get interested and involved.”

Building upon the Microenterprise Access to Banking Services program, USAID/Philippines recently launched the Scaling Innovations in Mobile Money project to boost expansion and rapid adoption of mobile money services. The project will target broad areas of intervention: government services, the payment system, electronic payroll and mobile money network infrastructure. Cutting across these areas, the program will address supply and demand constraints to broaden adoption of mobile money in the Philippines while promoting global knowledge sharing.

“We are not only transforming the way rural banks serve communities, but also opening up new and limitless

opportunities for citizens in isolated and far-flung areas. This is creating greater financial inclusion and improving people’s lives,” says Steele.

USAID is helping to bring banking to rural populations in several countries around the world, including Nepal, Indonesia and Kenya. The Philippines is one of four countries—along with El Salvador, Ghana and Tanzania—under the U.S. Partnership for Growth program that focuses development assistance on strengthening economic growth.

“We live in a world where you don’t need a bank in your neighborhood to safely store your money or access financial services—you can simply use your phone,” notes Priya Jaisinghani, director of mobile solutions within USAID’s Office of Innovation and Development Alliances. ■

This article was written by staff from USAID/Philippines.



Lolita Singahan outside her school.

Photo by Ronald Enad, 1st Valley Bank

Interview with Chris Locke

GSMA Development Fund Managing Director



Photo courtesy of GSMA

As the development wing of the world's largest mobile industry association, the GSMA Development Fund works with its members to make mobile services available to people in developing countries. It is an implementing and resource partner of two USAID Global Development Alliances—mWomen and mFarmer. Managing Director Chris Locke has more than 15 years of experience working in the mobile industry, and is an editor of “Thumb Culture: The Meaning of Mobile Phones for Society,” an anthology of research examining the global effect of mobile technology.

FRONTLINES: What has struck you as the biggest surprise in the field of M4D [mobile for development] in recent years? How do we capitalize on it as donors and as implementing partners?

CHRIS LOCKE: What struck me the most has been the appetite for innovative services. I think where we've seen real innovation, whether it's [mobile money program] M-PESA in Kenya or using mobile phones for metering for solar systems, what you're seeing is that kind of perfect storm of a ubiquitous technology meeting a phenomenal need. For someone who has been in the industry for over 15 years now, the most innovative services I've seen have been the ones in the last year in developing markets.

What we can do in terms of capitalizing on that, is opening up to that innovation and recognizing that actually a lot of the best ideas for any technology that can be used in emerging markets is going to come from the people on the ground and their ideas and their experience. It's not going to be rooms of people in Washington, or London, or Paris or Oslo drawing plans on boards and coming up with their way of thinking. This is a new and vibrant and exciting young market, and people at the cutting edge of it are on the ground in the markets and we need to create funding structures that allow that innovation to come through and succeed.

FL: You have witnessed countless examples of 'pilot-itis.' Yet your business

approach is to reach scale as quickly as possible, to reach underserved beneficiaries but to do so in a manner that makes sense to GSMA member operators. What are the key elements necessary for breaking out of 'pilot mode'?

Locke: The only way you reach scale, certainly in the world we are in at the moment, is to create business sustainability. The mobile operators can actually scale really quickly; [for example] we've got three million women in a matter of months in two markets with one operator in the mWomen program. M-PESA scaled to 70 percent of the population in five years. You can reach that scale very quickly, but mobile operators need to see how it fits into their

business and how it can support their business. We try and reach scale by creating that double bottom line business plan and showing the mobile operators why they should invest in taking a service to scale, and why it's going to be beneficial to them while also tracking the developmental impact of that product.

FL: How do you influence change from among mobile operators so that they modify the way they do business in a manner that meets development goals, but also makes commercial sense when scaled? What can the international development community learn from this?

Locke: If you are showing them a genuine innovation that they can see has a business impact then they will change the way they work to accommodate it. The key is not thinking that the social impact alone is going to be enough to encourage a business to take something to scale. In some cases it is, but if you tie that social impact to a business benefit, then you are going to win. It goes beyond just looking at this approach for big businesses. You need to look at this for small entrepreneurs. Your aim should be creating something that goes beyond the lifespan of the money you put into it, to create something that has a sustainable business impact. We want large companies to be successful in these countries because they will contribute to the economic and social development of those countries. Therefore, we should look at how we work with them in the same way we look at how we work with and apply the same concepts to small- and micro-entrepreneurs.

FL: How has the GSMA mWomen program—one example of a USAID Global Development Alliance (GDA)—begun to do this effectively, particularly within operators that have never before considered the female demographic? Is this a potential model for redefining 'business as usual' to influence positive change?

Locke: Yes, I mean we're biased, obviously. I think what's excited us and surprised us when we've talked to mobile operators is by talking about this as an opportunity. And talking about this in very normal business terms, in terms of market segmentation, etc. We've had a huge and innovative response—Indosat's *Info Wanita* project is a great example that was stimulated and supported by us as a team. But as a program, it comes from the internal activities.

When we've done a big group workshop with Telenor or Qtel or Etisalat, you get people excited and understanding how they can innovate in their own jobs. And that's actually when you get really good ideas that come through. It's not about taking a template to a company and saying, 'If you do this, it's going to have that.' It's about showing the opportunities and being really open-ended to say, 'OK, now you tell us within your own business what's going to work.' You end up picking up champions within companies and people who are often far more innovative than perhaps we would be ourselves, and therefore have much bigger impact. And that's hard, because in grant-funded programs, the temptation is always to lock down a three- to five-year plan of action and execute it. But I think we have to be a bit more open to understanding the

end result is sometimes something you only really come across in deep conversations with partners.

FL: The GSMA Development Fund has now been a USAID implementer—through two GDAs and a grant—for 1.5 years. What has been the benefit(s) to working with USAID? What has been the challenge(s)?

Locke: The benefit is your scale. You've got a lot of clout because you're the U.S. Government, so [that translates into] a lot of people on the ground. That is hugely beneficial. And a lot of experience: Casting a net wider across USAID, when you look at our relationship with you guys on agri-[culture], we have benefitted massively from the wider agri team within USAID as thought partners, in the same way that we benefitted widely from having the gender department as thought partners.

We have a very narrow prism on the world in the way that we look at how mobile technology can be impactful, but having expertise in some of those sectors and having you guys as thought partners is really valuable. So, the experience and scale of USAID is great. I'm not going to be the first person to tell you that the bureaucracy [is debilitating]. And I think that you can frame that as a challenge. To fund ICT [information and communication technology] development projects well, you've got to get a fund quick and fast and have a relatively high-risk profile because, if anyone came to me now saying that they were writing a program for five-year long 'mobile for development' programs, I would think they were idiots.

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An Afghan youth uses his mobile phone to take pictures in Musa Qala, Jan. 18, 2011.

With a recent explosion in mobile phones, USAID engages Afghanistan's best and brightest to grow mobile money.

JUST A DECADE ago, Afghans had to travel to Pakistan to make international calls. The landline phone infrastructure had completely fallen into disarray during the civil war, and there were no mobile phone operators. The first American

diplomats and U.N. workers to return to Kabul after the fall of the Taliban carried backpacks full of costly satellite phones for the new Afghan emergency government.

But smart, early regulatory decisions by Afghan lawmakers, based on

technical assistance from USAID and other donors, engendered the rapid growth of a profitable and competitive sector, pushing down airtime prices well within reach of normal Afghans. Today, Afghanistan is awash in mobile phones, with more than 18 million active subscriptions in a country of 28 million.

This explosion of mobile users has created a network that bridges the country's formidable urban-rural divide

APPS for AFGHANISTAN

By Kathleen McGowan



the most promising is mobile money—the ability to safely store and transfer “e-money” via SMS, avoiding the expense and danger associated with moving cash, while extending the reach of basic financial services from the 5 percent of the population with accounts in brick-and-mortar banks to the 65 percent of Afghans who use mobile phones.

Already, m-money trials facilitated by the U.S. Government, such as paying government salaries by mobile instead of cash, are demonstrating startling benefits: In Wardak province, police deployed in unbanked communities report “raises” of 30 percent when paid via mobile; cash payments of salaries in Afghanistan are exceedingly vulnerable to corruption. Equally promising applications to extend and repay micro loans and pay household electricity bills are beginning to roll out, delivering dramatic increases in efficiency.

As the mobile network operators increasingly focus on scaling their mobile money products and agent networks, USAID is working in partnership with the private sector to aggregate demand and provide consumer education to Afghans, most of whom are unfamiliar with or mistrustful of the formal banking system. In one novel approach, the Agency is working with the Association of Mobile Money Operators of Afghanistan to harness the creativity and energy of Afghanistan’s best

and brightest to develop mobile money applications to address pressing problems faced daily by Afghans.

THE OVERWHELMING response to an app design competition this year among Afghan university students illustrated just how compelling up-and-coming young Afghans find mobile money—more than 5,000 students across the country submitted ideas, many of which focused on how mobile money could improve the Afghan Government’s ability to provide basic services transparently and efficiently.

Others put forward ways in which mobile money could help empower individuals by giving them tools to manage their own finances, a particular boon for women, who often rely on male relatives to conduct financial transactions on their behalf.

Such competitions can trigger a network effect, drawing students into the design process and drawing in new mobile money users—and expanding the mobile technology sector.

Afghan officials say the enthusiasm generated by the contest and subsequent avalanche of ideas bodes well for future uptake of mobile money in Afghanistan given the country’s demographics. With two-thirds of Afghans age 25 years or younger, Afghanistan is truly a land of potential early adopters.

“The contest on mobile money is a creative approach to get our youth involved

GO ONLINE

**to watch a video
on mobile money
in Afghanistan**

while transcending gaps in physical infrastructure, low literacy rates and pervasive insecurity.

The near-ubiquity of mobile phone coverage has allowed Afghanistan to join the vanguard of countries experimenting with innovative new uses for the mobile channel, using the networks to extend services and information cheaply to populations lacking access through other means. Among

in new technology that will spur the development and economic growth of Afghanistan,” said Deputy Minister of Higher Education Sabir Khishky.

HAKIMA* WAS born in 1992 in Iran, where her family took refuge during Afghanistan’s brutal civil war and subsequent oppression by the Taliban. Like so many other Afghans who aspire to contribute to their country’s rebuilding, Hakima moved back to Afghanistan with her family in 2002. She became a math teacher at a local school for girls in Nimroz province before enrolling in Kabul University, where she is studying pharmacology.

Upon learning about mobile money, Hakima immediately recognized its potential use for Afghan businesswomen, who are constrained by having to hire external agents or rely on male

family members to conduct basic financial transactions such as making payments and storing money safely.

Hakima, whose app contest entry helps Afghan businesswomen get easy access to their money, was one of the eight winners to take home a \$5,000 cash prize, win computer equipment for her school, and see a major mobile network operator develop and deploy her app.

Hakima noted that using local retail stores as “banks,” or mobile money agents, and using a mobile phone for transactions would not only save time and money that could be invested back into an individual’s business, but would also give women entrepreneurs greater independence in making basic business decisions. Many Afghan women who put their handicrafts on the market do not have the permission of their husbands or other male family members

to open bank accounts. This app enables them to pay their suppliers and receive payments from retailers using this secure mobile transaction.

And, like their male counterparts, Afghan businesswomen will benefit greatly from the ability to deal with more customers in less time and across distances.

“Mobile money means women no longer have to ask permission just to go to the bank, no longer have to wait in line for hours to withdraw money, pick up or repay loans,” Hakima said. “All of these transactions can be conducted safely and comfortably from home. Moreover, mobile money will give women better control over their own money to support their businesses and families.”

Afghan Wireless, one of the four mobile service providers operating in Afghanistan, will be deploying the



Photo courtesy of FAIDA

Several young Afghan men listen as a representative from M-Paisa describes how mobile bill pay works.

Asian Connections

By early this year, there were only 24 million Internet users in Indonesia, or 10 percent of the population, with few users outside major urban areas. This figure is low compared to neighboring Asian countries such as China, where a third of the population is wired; Malaysia, where over half of the population has Web access; and Vietnam, where 28 percent are online. The average in the developing world is just over 20 percent. Look for how USAID is helping to bring the Internet to rural Indonesians in a future edition of *FrontLines*.

app for Afghan businesswomen. And since Hakima intends to use her prize money to help launch a small enterprise, she'll soon have the opportunity to know if her idea works as well in practice as in theory.

SAMI* AN ECONOMICS student at Nangahar University, plans to use his prize money to help finance his graduate studies. Sami's winning idea stems from his own frustrating experience trying to pay a government fee for his passport application. While waiting in line for hours in the scorching sun in front of the bank, Sami looked at scores of others lined up to pay their bills. "There's got to be a more efficient way to do this," Sami told himself.

Soon after, he heard about the mobile payment system and immediately thought of a multitude of potential uses for a government payment app. For Sami, paying passport fees electronically from a mobile handset is just the tip of the iceberg.

Electricity bill payment via mobile phone has just been introduced in Afghanistan.

"Not only will mobile payments improve efficiency and a much-needed increased revenue to the government, but it will also instill transparency into the system so that Afghans will know where their money is going. This is a key step toward reducing corruption," he said. Roshan's M-Paisa (mobile money) service will be designing and deploying Sami's app.

"Today, some 15 million Afghans use mobile phones, and a full 85 percent of the population lives within the combined network coverage of the four major telcos," said USAID Administrator Rajiv Shah last year. "This technological leap connects Afghans to each other and to the economy in ways that were unimaginable just a few years ago."

Afghanistan represents an important test case. International assistance to the country represents a significant percentage of Afghanistan's GNP, so encouraging the use of mobile money by the national government and international donors for their payments is key. Moreover, USAID is already applying the lessons learned from Afghanistan to other markets including Malawi, the Philippines and Haiti. Afghanistan will offer important insights on how to expand mobile money beyond government payments in other countries, USAID officials believe.

"Our commitment to Afghanistan is very high and it is critical that we get this right," said Priya Jaisinghani, director of mobile solutions at USAID. "Our work in mobile money around the world draws on the Afghanistan experience—both successes and challenges—and our hypothesis that governments play a critical role in facilitating adoption of mobile money." ■

*Last name withheld for privacy reasons.

LOCKE

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No one has an idea of what the mobile industry is going to look like in emerging markets in five years' time. We can make educated guesses, and we can try and influence it, but one of the things that makes it so exciting is that's a hell of a long time in the mobile industry. And it's a hell of a long time in the way devices evolve and the way the apps evolve, etc. So, I think to fund well in ICT, you've got to fund quick and fast on short-term projects and have a high-risk profile. And find those pockets of innovation or find those innovators.

FL: If you could hedge your bets, where do you see M4D heading in the next few years?

Locke: The last two or three billion people in the world to access the Internet will do it via mobile phone. We're seeing in North Africa and other areas the impact of what happens when you give people access, not just because of the information they can get but because of the communication they can have. What interests me is when you look at rural populations, illiterate populations, in areas with potentially low 3G coverage, what does the Internet look like? We know it's going to be transformative for those populations but what is it going to need to look like? Will people actually see access to the Internet as a spark to literacy, which some projects seem to indicate? What impact is the Internet via mobile phones going to have and how do we speed it up or enable it and make it easier, and make the reach broader and more affordable? ■

The Taita Taveta County Bunge Forum formed in October 2011. It is one of 26 county youth forums launched across Kenya in the past year with USAID support.

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