

worldark

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READ TO FEED FILLS THE NEED

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FOR THE RECORD

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Dear Fellow Activists,

As we settle into a new year with fresh opportunities ahead of us, I'd like to put forward a new way of thinking about the work we do at Heifer International. I've stressed before the importance of the word "end" in our mission: We work to end hunger, poverty and environmental degradation in the communities we serve.

When Dan West started what would later become Heifer International, giving poor farmers the means to feed their families was a noble, attainable goal. Globalization has made us all neighbors, and now we are able to more fully understand the big-picture struggles of the world's small-scale farmers. Barriers to women's rights, land grabs, terrible roads and lack of electricity all contribute to growing inequality worldwide. But we also see more clearly the opportunities available to them to move beyond subsistence farming, as well as how we can help open up these opportunities.

We all want positive change for ourselves, for our global neighbors and for the world in which we live. Heifer International wants to ensure that small-scale farmers are not only able to feed their families and earn enough money for their efforts, but that they are fully, and for good, out of the trenches of poverty.

How do we do this?

We are looking at what a livable income is in the countries where we work. We are examining our programs to



PHOTO BY LACEY WEST

President and CEO Pierre Ferrari visits a cardamom grove in Guatemala with Country Director Gustavo Hernandez.

determine how to close the income gap between what our farmers earn without our intervention, and what they need to earn for a dignified quality of life. And we are tapping into the entrepreneurial spirit of these families so they can take it the extra mile. This entrepreneurial spirit is already at work in Uganda, where families are saving themselves time and energy by adopting biogas technology. You can read in this issue about Edith Kalale, who uses her biogas stove to make pancakes that she sells to children walking to school. We are learning from cutting-edge experts, like Allan Savory, how to bolster our efforts to improve the lands our farmers inhabit.

And we are doing it with support from you, our donors, local and corporate sponsors, and Read to Feed participants.

We don't just live in a global economy; we are a global community. Giving millions of small-scale farmers the tools and support they need to end their own hunger and poverty for good makes this world a better place.

Yours for a great 2015,

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features



COVER

Jamira Webisa Nalyaka, 62, cooks over a biogas burner at her home in Bunambale, Uganda.

Cover and top photo by Olivier Asselin.

14 Dirt of Ages BY JUDITH SCHWARTZ

Grasslands sage Allan Savory spent decades studying herding animals' effects on soil health. What he learned is that the land needs animals as much as the animals need land. The secret, he says, is in the scheduling.



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Turning trash into treasure is the idea behind a biogas project in Uganda, where participants magically transform manure into electricity, cooking fuel and fertilizer.



32 Literacy and Livestock BY JENNIFER WHEARY

Students at a special school in New York brush up on reading and language skills while pulling together as a team to donate a boatload of animals to families in need.





Volunteer Annette Sherden works with fourth-graders at William R. Davie Elementary. Students, from left to right, are Daisy Espinoza, Jayde Abshire, Annalise Walterman and Keziah McCallum.

STUDENTS SCHOOL TEACHERS FOR HEIFER

As a school volunteer in a rural county in North Carolina, I offered enrichment to four bright fourth-graders on my favorite subjects—poetry, geography, nutrition, astronomy and history—in six-week blocks, ending with a 30-question challenge. If all students outperformed a teacher of their choice on my quiz, I donated \$20 to Heifer International. Motivated by the fun of selecting and giving an animal or share, the girls won every challenge! When the students defeated their principal, he too donated \$20, so these girls raised \$120 for animals for other families.

ANNETTE SHERDEN
Mocksville, N.C.

GETTING THE PICTURE ON AIDS

Thanks for the excellent visual and stats on the AIDS epidemic, still killing 1.7 million each year (“AIDS: The Modern Plague,” Holiday 2014). Anti-retroviral therapy is working, but not everyone is receiving it, so the deaths continue. The Global Fund to Fight AIDS, Tuberculosis and Malaria is changing that. Thanks to an American pledge of \$5 billion that must be matched 2-to-1 by other donors, the Global Fund is continuing its work. This happened because people asked their representatives to make this pledge. The power of our voices cannot be underrated. When enough of us speak up, an AIDS-free generation will be possible.

WILLIE DICKERSON
Snohomish, Wash.

We asked our Facebook friends if they thought Heifer’s efforts to preserve knitting and weaving traditions in Peru were worthwhile. Here’s what they had to say:

I particularly see value in marketing assistance to help generate livelihood for these women. From what I experienced in visiting knitting and weaving cooperatives there, they have remarkable skills and quality supplies but greatly need help innovating trend-current designs and finding distribution channels.

ANNIE MILROY PRICE

Yes! The world needs unique things fashioned with the hands of a human being. And the people making them receive the satisfaction of being able to earn a living through their talents.

LAURIE WHITE JOHNSTON

I’ve often wondered about this, “Does it make a difference going forward?” But I also think it’s worthwhile overall to be able to be self-reliant and that’s what I think “old” traditions teach us. I think it’s important, for example, that we know how to operate a car even when they’ll be able to drive themselves.

MICHELLE KELLER



LIKE HEIFER INTERNATIONAL ON FACEBOOK AND ADD YOUR FAVORITE STORIES.

We want to hear from you!

Please send your comments to worldark@list.heifer.org. Include your name, city, and a telephone number or email address. Letters may be edited for length and clarity, and may be published online as well as in print. Because of the volume of mail we receive, we cannot respond to all letters.

Q&A SPRING

Biogas is a great resource for small-scale farmers in developing countries. Do you have any ideas for other ways Heifer can help farmers make the most of the materials they’ve already got on hand?



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World Ark is the educational, informational and outreach publication of Heifer International. Its purpose is to further Heifer's goals to end poverty and hunger while caring for the Earth and to raise awareness of the issues involved in this work throughout the world. Heifer International is qualified as a charitable organization under Section 501(c)(3) of the Internal Revenue Code. Contributions to Heifer International are tax-deductible to the extent permitted by law.

Since 1944, Heifer has helped 22.6 million families, directly and indirectly, in more than 125 countries move toward greater self-reliance through the gift of livestock and training in environmentally sound agriculture.

Heifer International is a member of Inter-Action, the largest alliance of U.S.-based international development and humanitarian non-governmental organizations,

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Unplugged

In Uganda, less than 5 percent of the rural population has access to electricity. Most households in the country—at least 80 percent—burn firewood for energy, leading to deforestation and health problems. Collecting firewood takes an enormous amount of time and energy.

Learn how Heifer International is helping bring electricity to Ugandan homes in a healthier, more environmentally sustainable way on Page 22. You can support a Heifer family in this way yourself at www.heifer.org/biogas.



OLIVIER ASSELIN

Safe, clean water and access to toilets or latrines could save the lives of up to 1.5 million children a year, according to data from the United Nations.



RUSSELL POWELL



BIGSTOCK.COM

Munching the Numbers

Fresh fruit is the snack most of us would choose if given the option, followed by chocolate, according to a global survey by the Nielsen Company. But when asked what snack they actually ate in the last 30 days, people admitted to eating chocolate more than fruit.

Snackers in Asia-Pacific countries ate chocolate most, while people in Europe, Africa and the Middle East snacked most commonly on fruit. Yogurt was the most popular snack in Latin America. Chips led the way in North America, followed by chocolate, cheese and cookies. Fresh fruit ranked fifth.

Nielsen's first-ever global snacking survey is based on answers from 30,000 online survey respondents in 60 countries. (Source: www.nielson.com)

JARGON

BIOMASS: material from living or once-living things, such as wood and crop residue, that can be used for fuel



Sugars exist in most plants, but only **sugarcane and sugar beets** have enough of it that it can be **extracted efficiently**.



Corn can be processed to extract **high-fructose corn syrup**, an inexpensive sweetener that's popular with the food processing industry but the bane of many health advocates.

25 grams

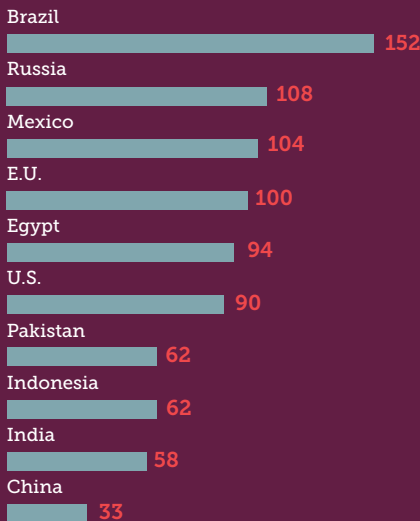
The amount of sugar the World Health Organization says an average adult should consume per day.

That's just a smidge over **6 teaspoons**, or the amount of sugar in **one Hershey bar**.



Who consumes the most sugar?

grams eaten daily per person



Source: World Health Organization

TOO SWEET



Sugar contributes to **obesity and tooth decay**, and experts warn that it can be **addictive**.



Despite its drawbacks, the **global demand** for sugar **continues to rise**.

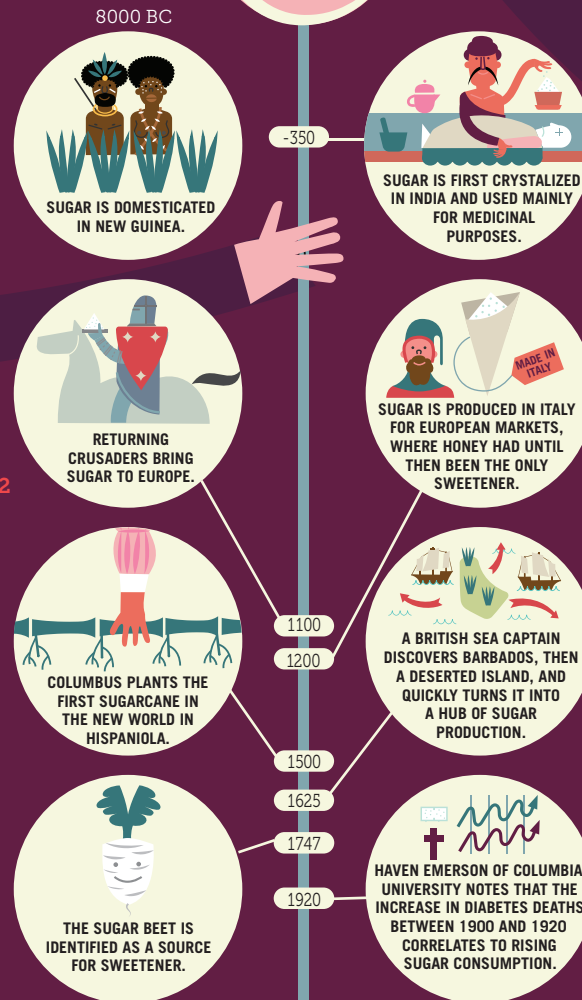
70% of the sugar we eat hides in **processed** foods like



bread jam cake yogurt

30%

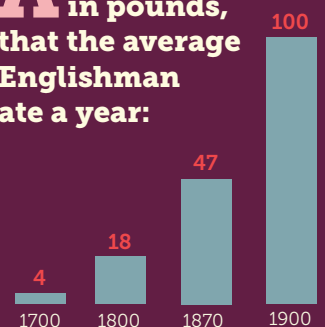
Soda and sugary drinks contribute most of the rest.



“Sip by sip and nibble by nibble, more of us gain weight because we can’t control normal, deeply rooted urges for a valuable, tasty and once limited resource.”

—Daniel E. Lieberman, a professor of human evolutionary biology at Harvard University

A amount of sugar, in pounds, that the average Englishman ate a year:





Cardamom's the Word



LACEY WEST

In case you were wondering what gives your chai tea that *je ne sais quoi* you keep going back for, we may have the culprit pegged. It's cardamom. This spice from the ginger family gives that intense aroma and taste to your chai. It's not just for tea, though. Cardamom is used to flavor all kinds of dishes. Its combo of soothing mint and clove hints and that ginger kick somehow enhances both an herbal tea and a strong gin.

Hailing originally from India and surrounding regions, cardamom is quite common in Indian cooking (some even chew it like gum), but somewhere along the line it snuck into Nordic sweets recipes, like the Scandinavian Christmas bread *Julekake*.

Cardamom's travels didn't stop in Sweden, though. The largest exporter of the spice is not its native India, but Guatemala. International demand for cardamom is on the rise, and Guatemala has the tropical climate necessary for growing it. One might think that puts Guatemalan cardamom farmers in a good place; however, many farmers are not seeing profit from this trend at all and are in fact living in poverty. Heifer is actively working with cardamom farmers to improve conditions. If we can better the system in which cardamom finds its way from farmers to cups of chai worldwide, this one spice could be the key to lifting thousands out of poverty.

Harvest: Spinach

Spinach is an early riser and a welcome sight after many cold months without fresh veggies. Try some of the first greens of spring in this savory pie, which has nabbed a ribbon at Heifer Farm's annual "Pie-Off" multiple times. The recipe has been polished and tweaked over the years. We'll give credit to all the chefs at Heifer Farm, but with a special nod to Joan Richards, the original baker.



DONNA KILPATRICK

Joan's Spinach Pie

- 3 teaspoons butter
- ¼ cup finely diced onion
- 1 pound fresh spinach, washed thoroughly
- 1 (8 ounce) package cream cheese, at room temperature
- 1/2 cup milk, at room temperature
- 1 teaspoon lemon juice
- 1 teaspoon Dijon mustard
- 1 teaspoon kosher salt, or to taste
- ¼ teaspoon garlic powder
- ½ teaspoon pepper
- ½ teaspoon thyme
- ⅛ teaspoon nutmeg
- 4 farm-fresh eggs
- 2 strips local bacon, cooked until crisp, then crumbled
- 2 cups grated cheddar or Gruyere cheese
- 1 unbaked, prepared 9-inch pie shell

Preheat oven to 375 degrees. Sauté onions in the butter in a large, deep skillet until translucent. Add spinach and stir constantly until spinach has released most of its water. Remove from heat. Line a colander with cheesecloth and pour in the spinach mixture. Pull up the corners of the cheesecloth, and twist to squeeze out all of the water. Let cool to room temperature. (Note: If the spinach mixture is too wet, the pie will not set properly.)

Beat cream cheese with milk, lemon juice, mustard, salt, garlic powder, thyme, pepper and nutmeg. Add the eggs and beat until combined. Stir in the drained spinach and onions, 1½ cups of the shredded cheese and the bacon bits. Bake for 35 to 40 minutes until center is set. Remove pie from oven. Sprinkle remaining cheese evenly over the top. Return to the oven and bake an additional 5 minutes, until cheese melts. Let cool for 15 minutes before cutting. Serve warm or at room temperature.



Lettuce Eat Together: Planting a Spring Salad Bar

By Elizabeth Joseph



PHOTOS PROVIDED BY ELIZABETH JOSEPH

Elizabeth Joseph is desperate for sunshine and a crunchy green salad, and she suspects you might be, too. As the gardening and education coordinator at Heifer Farm in Rutland, Massachusetts, Joseph starts turning soil as soon as the ice lets up. Below, she offers tips for growing your own salads.



A salad bar garden is a low-maintenance, easy and inexpensive way to have delicious and nutritious vegetables on hand to accompany any meal. Plant right in your backyard, in containers on a patio, at a school or community garden, or wherever there is a little space to grow.

When planning your salad bar, devote the majority of space to lettuce, since it will form the base of the salads. Choose seeds that say "lettuce mix," as you will be able to harvest the individual leaves that sprout from these in about 3-6 weeks, which is faster than waiting for a full head of lettuce. You can also sow arugula, mustard mix, beet greens, spinach, Swiss chard and kale. Sprinkle the seeds over the soil so they

are about 1/2 to 1 inch apart.

Weed and water the greens until they are 3 or 4 inches tall, and then harvest them with a pair of scissors, cutting about an inch from the ground so the new growth will regenerate and you'll have another crop on the way.

With the rest of your salad bar space, plant vegetables that will add color, texture and flavor to your plate such as spring onions, radishes, baby carrots and annual herbs such as dill, parsley and cilantro. As the weather warms up, add cherry tomatoes, cucumbers, peppers, beans, zucchini, berries, edible flowers and whatever other veggies you like!

Involve the kids with planning, planting, picking and preparing the

salad. Get creative, and try different colors and varieties of vegetables like purple carrots, speckled lettuce, Easter egg radishes and rainbow chard. Forage for easily identifiable wild greens like stinging nettles (wear gloves) and dandelions to add an additional burst of nutrition and flavor to your meal.

When it's time to eat, mix a simple homemade vinaigrette of olive oil and balsamic vinegar, honey, salt and pepper. Shake well before using, drizzle over your homegrown salad and enjoy the first taste of spring!

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To learn more about Heifer Farm and to plan your visit, go to the Heifer website at www.heifer.org/farm



The Burning Question

Interview by Erik Hoffner, *World Ark* contributor



Yadama travels in India to research communities' reliance on natural resources.

Millions of women and girls in developing countries spend part of every day foraging for fuel to cook their families' meals. This effort to chop, collect and carry biomass for miles can take hours, cutting into the time they need for other chores like fetching water, caring for children, working the fields and herding animals. Cooking with open fires is also a huge health risk. Smoke inhalation contributes to millions of deaths every year.

Gautam Yadama is the author of *Fires, Fuel & the Fate of 3 Billion: The State of the Energy Impoverished*, a new book that takes a close look at this global problem. A professor and faculty scholar at Washington University's Institute for Public Health in St. Louis, his research focuses on the livelihoods of communities that are dependent on natural resources. He travels often to India to document the challenges and explore alternatives.



WORLD ARK: How dangerous is air pollution from cooking fires?

GAUTAM YADAMA: The 3 billion people dependent on wood, crop waste and dung for fuel—160 million households in India alone—burn about 2 tons per family each year. That's 730 million tons of biomass, which releases about a billion tons of carbon dioxide into the atmosphere. So you can see the effect on the climate. But inside the house, recent estimates are that 4.7 million people die each year from the smoke. That's one person every 16 seconds. Exposure to particulate matter from cooking fires leads to pneumonia and, as a result, premature deaths in children under the age of 5. Low birth weight, increased infant and

perinatal mortality, chronic bronchitis, chronic obstructive pulmonary disease, ischemic heart disease and acute respiratory infections are all health threats from exposure to cooking fires.

Are there other health-related issues?

In these communities, people often don't feel well due to chronic problems from household air pollution, which keeps them from plowing the fields or otherwise making a living off the land. We have a metric for this, called disability adjusted life years. DALYs give us an aggregate measure of years of loss of healthy life in a region, so we can picture the loss in people's productivity and contribution to society and the economy. If you look at the DALYs from household air pollution, the numbers are



PHOTOS BY MARK KATZMAN



A family on the river island of Majuli in India's Assam state cooks a meal in the traditional fashion.

devastating. Just for South Asia, including India, Nepal and Bangladesh, the DALYs attributable to household air pollution are something like 41.7 million life years, compared to about 2.5 million in Latin America. In India alone, the latest estimate is 31.4 million DALYs lost. The other major place for this problem is Sub-Saharan Africa, at about 26.2 million DALYs.

So there's an economic effect?

Because of the harm to health, to ecosystems and natural resources that the book amply illustrates, millions live at low levels of productivity, and that harms the overall economy of that nation and the region. Collectively, the environmental impacts of black soot and carbon emissions also affect the climate and impose limits on sustained long-term economic growth.

Why are women and girls bearing the burden?

Social norms dictate in many of these cultures that it's the woman's responsibility to provide for all the cooking needs. And no one questions it. A woman can't get up in the morning and say, "I'm not feeling well, why don't you do it?" No, they just go out and do

it, because that's their responsibility. Men, of course, have other responsibilities, but we know from studies that men in general have far fewer daily responsibilities, and many of these have to do with outside interactions with market systems and so on, while women go about work in the fields, collecting wood and such. These acts embedded in the social norms and daily rhythms accumulate to outcomes that become irreversible.

Your book is an unusual and beautiful partnership with a photographer who documents real peoples' stories. What is the project's goal?

Fires, Fuel & The Fate of 3 Billion portrays the complexity of the problem of energy and poverty. This is the context for understanding cook stoves, but also clean energy access by the poor. The book cautions against simplistic notions of development where technology becomes the solution for addressing all problems. Technological innovation combined with social innovations that recognize the realities of the very poor are important if we are to realize long-term development. The book argues that energy poverty is a complex story. It is a story of household poverty, and within it are multiple



A woman collects firewood in the Indian state of Orissa.

stories of women constrained by culture, of children—especially girls—sacrificed to meet daily household energy needs. It is a story of unsustainable lives, an unsustainable environment and negative ecosystem outcomes. Untangling this Gordian knot to understand how several billion remain energy impoverished is not an easy undertaking, but we stand to gain insight into possible energy interventions that could prove effective and truly sustainable. These insights could be useful in designing technologies and interventions to tackle clean and efficient energy access for the many, providing sufficient quantity at a low cost. This is the energy challenge of our times.

Can you give an example of the ripple effect you talk about in the book?

If agriculture takes a hit from some environmental factor, household income needs go up because farmers will have invested in something like seeds, and if they can't recoup that, the issue of harvesting wood for income comes up. A few years ago, I was in Andhra Pradesh in India during a severe drought. Their crops weren't growing, so what do you do then? You still have to make a living, to buy rice to eat. So women were collecting wood for up to five hours a day to sell in the local markets. And that affects forest biodiversity and structure, because when forests are denuded often what happens is new invasive species move in, taking over for more mature, original species.

This changes the structure of the forest over time and affects the way soil nutrients run off. In some cases, when grasses move in, there are more forest fires.

Do cultural values affect the adoption, or not, of clean cooking technologies like biogas?

I've noticed that biogas is very popular among women—they love it, and if they have enough cattle and water, there's plenty of gas, and it burns cleanly.



Women and children in Orissa haul their daily firewood back home.



But maintaining such a biogas system still falls on women, so let's say that a valve breaks so methane is not coming into the house. A woman may say to her husband, "Can I have 35 rupees to fix that?" and he may say, "I'll give it to you in a day or so." But she doesn't control the purse strings, and a day can become a week, and when they're not used, biogas systems begin to dry out, and the problem is no longer the valve. The system has to be opened up and cleaned out so the anaerobic digestion can be restarted. Which means more labor, possibly involving the husband, who may instead ask her to just pick up some wood while out herding the goats, and so they go back to the traditional stove. That's an example of a cultural aspect that can change something that was going well.

What about when women are more empowered, as with Heifer's programs?

The upside is that when women are able to make decisions, they can move things within their cultural contexts that could make these new systems work. Women are aspirational; they don't want to be breathing smoke all the time. When they have decision-making power, this improves their lives and their households.

In one community in Rajasthan, India, there's been upwards of 90 percent adoption of biogas

systems in the community. The women have been the champions of it and have advocated to their husbands, but a tipping point has also been reached among the men, who want to look prosperous to their peers. Having a wife out collecting wood starts to look bad.

Shifting out of wood collection makes available more time to engage in other income-earning activities. For girls, better health and less time helping collect wood also increases the probability of free time for education.

Are there other clean cooking techniques you've seen successfully adopted, like solar stoves or clean-burning biomass stoves?

A question that comes up a lot on the biomass stoves is, what's the metric? It's often unclear what emissions reductions they will produce. So there's a need for evidence. Calling a stove clean doesn't make it so. There are stoves in Africa that have been successful, but they also need to be maintained. What works for two years develops cracks and may be abandoned when it breaks. So we have to ask, what is the longevity of these stoves? When do you need to rebuild them? I have seen biogas work and some individual biomass stoves that burn clean. But with the latter, you also run into the problem of a household needing two or more burners because they're cooking multiple things at the same time, while these cleaner units have just one. So there are limits, and people often can't afford to buy two of them. As a single unit they work, but as a system they fail.

Why should the world keep working on this issue?

The downward impacts on the health of 3 billion poor, the 4 million premature deaths from exposure to harmful household air pollution and the effects on the climate have proximate impacts on the well-being of 45 percent of humanity, as well as on natural resources and the environmental and climate health of our planet. That's reason enough to care. ■

.....
Read more about the book at energyimpoverished.wustl.edu and learn about Heifer's work with biogas in Uganda on Page 22.



DIRT O



Let them come, biologist Allan Savory says of the herd animals long blamed for destroying natural grasslands. With proper management, he says, those animals can be the land's salvation. He offers proof at Zimbabwe's Dimbangombe Ranch, where both flora and fauna thrive.

BY JUDITH SCHWARTZ, WORLD ARK CONTRIBUTOR • PHOTOS BY TONY EPRILE

F A G E S



VICTORIA FALLS, Zimbabwe — Allan Savory tells a story about the time a bull rhino wandered into his camp while he (Allan, not the rhino) was taking a bath. So he did what any reasonable person would do: he quickly dried his hands and, still stark naked, grabbed his camera. The rhino studied him, sniffed at him and softly snorted until, satisfied, he went on his way. In the last photo in the series, the rhino's horn fills the frame.

It's easy to get Savory to share stories of encounters with wild animals. If it's evening at his camp at the Africa Centre for Holistic Management in Zimbabwe, he'll be outside his round, thatch-roofed hut near a low fire, smoking a corncob pipe—regularly cleaned with guinea fowl feathers—happy to reminisce about chance meetings in the bush. There was the incident when he had a split second to determine, based on his instinct, whether he should shoot a charging Cape buffalo or go on the assumption that it would veer away. Indeed, the buffalo did swerve to the side, but not before providing a lifelong thrill to Savory and the visitors walking behind him. Then there was the baby porcupine he found along Lake Tanganyika on the Republic of Congo border. “He was one of the best pets I ever had,” Savory recalls. “He used to sit in the Land Rover with me. In the house, he would come over and

nuzzle the guests.”

Savory, now 79, is known throughout the world for developing Holistic Management, a decision-making model for managing livestock in which the animals' actions and behavior promote ecological restoration. After spending a week with Savory in his wild but troubled home country, I find it ironic that in the public mind he's associated with domestic animals, particularly cattle. For it's clear that the sounds, smells and history of this rugged place—the interplay of nature, knowledge and memory—are integral to who Savory is and how his ideas evolved. And that for all the policy addresses and international renown of his current life, his heart is in the bush.

AN OUTDOOR CLASSROOM

The Dimbangombe Ranch lies about a dozen miles—the last six or so over rattling dirt roads—from Victoria Falls in western Zimbabwe. The 7,900-acre property, owned by the Africa Centre for Holistic Management but under the trusteeship of five local chiefs, is the world's primary demonstration site for Holistic Management. Thanks to restorative grazing practices implemented over the last 15 years, the landscape has revived. Where the soil surface was dry and barren, there's now lush, high grass, even on once-eroded slopes. “It's become harder to train people here because there are so few bare patches,” says Savory. “There used to be much bare ground, especially along the railway line.”

On one of our 4x4 bush outings, Savory points out where annual grasses are being replaced by perennial grasses. Annual grasses tend to be whitish in hue, he says, whereas perennials tend toward yellow. He kneels down, in his characteristic bare feet and khaki shorts, to show us the green flush at the bottom of the perennials. It's late September, the depth of the dry season, and here's new growth. Land is never static—“always shifting from bush to grass and grass to bush,” says Savory—and all plants have their place, but the distinctions are significant. Perennial grasses have deeper roots and, as they store both carbon and water, bring life to the soil. A bit later, by the Dimbangombe River, Savory invites us to examine more vegetation that



“It’s the paradox of Holistic Management: that ruminants acting upon the land can have a regenerative effect, when all logic suggests that cows grazing and trampling would cause it to deteriorate, as is often the case when animals graze at will. ”



Clockwise from left: Wild animals like elephants and lions are coming back to Savory's land as more food becomes available. Savory enjoys an evening rest. His home is made in the traditional style.

attests to the area's restoration: sedges and reeds, both indicative of sustained moisture.

In the drylands, where life and livelihoods are dependent on seasonal rains, soil moisture is like currency, even money in the bank—saved, in this case, for the absence of rainy days. At the end of winter, the Zimbabwe lowlands are dry: a hot dusty aridness that reddens the eyes. Now, after a decade-plus of average or below average rainfall, the people of Matabeleland North province are waiting for summer rains that might or might not come. In this, the poorest province in a destitute country, a shift in grass type may seem a small matter. But of such small changes transformations are made—with tremendous implications for environmental health, wildlife preservation and human well-being. The hopefulness inherent in the improvements he's seen is what keeps Savory on the global keynote circuit when, given his druthers, he'd rather be at his modest pole-and-dagga (wood and clay) home, watching the bushbuck amble by.



New growth breaks through on grasslands at the Africa Centre for Holistic Management.

UNDERSTANDING THE DYNAMIC

It's 6:30 a.m. and pleasantly cool, though the sun is already heavy on the horizon. I've come to watch the cattle move from their lion-proof kraal, a movable enclosure made of thick canvas, to where they'll graze for the day. The animals look healthy but thin. This reflects the season, says herding supervisor Dickson Ncube, noting that in September the nutritional level of the grass is down to 30 to 40 percent. Ranch manager Andy Walton says, "When the rains are within 30 days, they will start to improve condition."

Ncube, 52, who's from one of the local villages, has been at the ranch since 2002. He is immensely proud of this work, yet more so now that his son Duncan, 20, has joined the herding staff. "I have seen the land change," Ncube tells me. "There were gullies and sinkholes. Then we started bringing in the cattle. The gully is still there, but now there is grass so there is no erosion."

The gate now open, the herders are counting cattle as they leave the kraal. This unremarkable event, the slow, calm saunter of cattle, is the catalyst for the changes Ncube describes. It's the paradox of Holistic Management: that ruminants acting upon the land can have a regenerative effect, when all logic suggests that cows grazing and trampling would cause it to deteriorate, as is often the case when animals graze at will.

Savory's understanding of land-animal dynamics evolved here in Southern Africa, over several decades of observation, questioning, and trial and error. The framework is based on two core insights: one, that grasslands and grazing animals are interdependent; and two, that while land can be overgrazed, it can also be undergrazed. As a game ranger in the 1950s and '60s in Northern Rhodesia, now Zambia, Savory saw that when animals were removed or fenced away from land, conditions got worse. He recognized that ruminant behavior—nibbling, dunging, trampling, bunching up and moving to escape predators—stimulated biological processes that promoted soil fertility, plant growth and diversity. And that absent the vast, wild herds that had historically crisscrossed the world's savannas, steppes and prairies, ordinary livestock properly managed could fill the niche.

Holistic Management addresses a basic challenge in



Land benefitting from Holistic Management is better able to absorb heavy rains and prevent flooding, Savory says. The dry season no longer leaves the Dimbangombe River completely parched.

seasonably dry environments: how to keep moisture in the soil from the end of one rainy season to the beginning of the next. Without animals eating grass and pressing dying plant matter into the ground, plant material accumulates without breaking down. This blocks fresh growth and inhibits biological decay. The result: the plant matter oxidizes and the soil loses carbon and water and the capacity to sustain plant and animal life. This is a common story throughout the world, since regions facing desertification, including many areas served by Heifer International, tend to have alternating rainy and dry seasons.

RIVERS TELL THE STORY

To tour the ranch with Allan Savory is to watch a landscape spring to life. The tiniest detail takes on meaning. The

sighting of a nest allows us to orient ourselves, as certain weaverbirds always build on a tree's western side. By scanning impressions in the soil, he determines that sable, baboons and elephants have been to the area, as well as a female giraffe, though that was a while back. "Most people would drive by and say, 'Oh, nothing's here,'" he says. Savory's sensory acuity has been honed through the study and practice of tracking. This includes stalking wild animals—notably man-eating lions—as a game ranger, as well as leading a military tracking unit during Zimbabwe's long and brutal war for independence.

We drive up to where two rivers, the Dimbangombe and the slightly larger Tsitsingombe, join up. This spot represents two catchments, water coming either from land managed by the national park service or land managed by the Africa



“With a shared interest in global poverty reduction and livestock, it would seem natural for the Africa Centre and Heifer International to find points of collaboration. Indeed, a potential project in the Sahel presents such an opportunity.”

Centre. Savory uses his walking stick to indicate how high the debris from flooding had reached in the respective watersheds, which he can tell from where driftwood has caught on trees limbs. “The flood water coming off the parkland reached three meters [nearly 10 feet] high,” he says. “This vehicle would have been under water.” By contrast, water flowing from the Centre’s land only rose three feet. On land where restorative grazing has been implemented, perennial grass and fertile soil absorbed the rain—which, when it arrives, can descend in torrents. On parkland, the water streamed off and eroded the soil. Once the rains stop, that land is left parched. To Savory, “this junction of rivers tells the whole story.”

A big part of the story is that the Dimbangombe River now has perennial pools along its length, and extends more than half a mile farther up its catchment area than has been known in living memory. Savory takes us to where the sole year-round pool had been, where elephants would congregate to bathe. The area looks desolate and the ground looks trampled. But it’s for a positive reason, Savory says: “They no longer depend on this place. Now elephants have lots of places to go for water.”

LIMITS AND POSSIBILITIES

Some in academia and range science consider Savory controversial and are quick to dismiss his ideas. This vexes him no end. Not that others might challenge his work. To the contrary, he invites criticism and says, “If someone has suggestions to improve Holistic Management, or alternative

ways to restore desertified land, I’d be happy to learn of it.” What frustrates him is when people confuse Holistic Management with various prescriptive grazing regimens. He stresses that Holistic Management is a planning approach rather than a model that dictates specific grazing patterns.

Those doubting restorative grazing’s validity might be interested to learn that as the land managed by the Africa Centre has rebounded, so has the wildlife. The property now has a higher density of lions than the nearby Hwange National Park. And the land supports healthy populations of sables and wild dogs, species whose numbers are dwindling in many Southern African parks.

They could also, as I did, visit Sianyanga, some 125 miles to the south on the road to Bulawayo, a rural community of 150 families that has been working with the Africa Centre for seven years. On a walk through the village land, a group of project participants shows me how conditions have improved. We stop at a *vlei*, or meadow. “This was so bare, you could pick up a needle from the ground,” one man says. “When the Africa Centre came, things started changing and grass and other plants started growing again.”

At several spots, Balbina Nyoni, 47, a data collector and single mother who brings a personal passion to improving land through animal impact, juxtaposes a photo taken several years back with how it looks today. Villagers used to walk nearly 20 miles to buy thatch to repair their huts. Now they harvest thatching grass on their land. A woman named Busie says that prior to 2007, many people traveled long distances to clear new crop fields and were away from the village



The grass commonly used to thatch houses in the region is once again growing abundantly under Holistic Management, so people no longer have to travel far distances to harvest it.

for several months. Now, she says, “we are able to feed our families, and neighboring communities come to us for food. We’ve learned there is no crop field that is beyond repair.”

With a shared interest in global poverty reduction and livestock, it would seem natural for the Africa Centre and Heifer International to find points of collaboration. Indeed, a potential project in the Sahel presents such an opportunity. Savory welcomes the chance to work with Heifer. “In the Sahel we’re dealing with extreme desertification,” he says. “Only 5 or even 2 percent of the land there is cropland, and the rest is degraded grassland. The key will be sharing knowledge of how to manage livestock on the range. If people manage holistically, I promise the land will improve. We haven’t had anyone manage holistically and not improve.”

Come 6 o’clock, the air cools and the sun sets with surprising rapidity. After a day’s work—which might include meeting with a cabinet minister, arranging for a film shoot and fine-tuning an essay or talk—it’s time for a “sundowner” (Savory’s usual: a whiskey or can of Lion lager). He may laugh over how he had to thatch his roof three times due to the mischief of baboons. “There’s often no reason for what they do other than that it’s fun,” he says of baboons; a fan of practical jokes himself, he regards this as admirable. Or that bushbabies, small big-eyed primates he’s often kept as pets, love alcohol: “They’d lick around the top of the whisky bottle.” From across the ridge he may hear the whistled staccato of the pearl-spotted owl, or the yip and cry of jackals. And there’s no place in the world he’d rather be. ■



Michael, age 3, leans over his family's biogas digester in Gombe in central Uganda.

REFUSE, REUSE

By FALGUNI VYAS, World Ark contributor
Photos by OLIVIER ASSELIN

A biogas project in Uganda leaves nothing to waste. Through the use of simple technology, animal manure is transformed into fuel, fertilizer and electricity.

G

OMBE, Uganda—The day starts early for Edith Kalale, 45. She wakes before the sun is up and has made her day's wages by 6 a.m. Kalale is the proud owner of a biogas digester, which she uses to make pancakes to sell to children on their way to school. "I start making the pancakes at 4 a.m. By 6 a.m. I am done with everything."

The money she earns from the pancakes keeps her home running and her family fed. Kalale and her husband, Henry, the pastor at Glorious City Church in Gombe, had six children. Only their four girls are still living. One son died of AIDS at the age of 23, and the other from suspected poisoning when he was 2 ½. Their daughters are grown and gone to work in Kampala, but the Kalales still care for their nephew, Peter Mulema, 19, and grandsons Michael, a curious 3-year-old, and Smile, a cautious 1-year-old.

Mulema's parents died of AIDS nearly 11 years ago; he has lived with Edith and Henry ever since. To them he's like a son. And Mulema treats the Kalales like he would his own parents. Once Edith has finished her morning pancake duty, Peter takes over and finishes up the rest of the day's chores.

On 3 acres of land they grow all the beans, maize, cassava and bananas they need. They have four cows and are able to sell more than a gallon of milk a day through the local co-op, which gets them a little less than a dollar a day.

With the milk and pancake sales, the family makes enough to sustain their daily needs. But Mulema has dreams of becoming a doctor, and at \$9 a semester, medical school is an expense beyond his reach. "I pray to God to help me get enough money to pay my university course," he said.

"GOD DOES MIRACLES"

Mulema is a man of faith and believes in miracles. He said his belief was confirmed two years ago when the Kalale family got a biogas digester. The contraption allows the Kalale family to spend less time collecting firewood and more time making money by selling pancakes.

Biogas is a renewable energy source. Technically speaking, it's methane-rich gas, produced through anaerobic (without air) digestion of organic waste.



Cooking is clean and convenient thanks to biogas technology.



Simply stated, when organic waste, like cow dung, is trapped in an oxygen-free environment, bacteria breaks it down. The result is a biogas that is about 60 to 70 percent methane and 30 to 40 percent carbon dioxide. Used for both cooking and electricity, the gas saves trees from being used as firewood and brings electricity to rural families who wouldn't have it otherwise.

Once you have a digester, the process of creating biogas is simple.



Edith Kalale shares milk with her grandsons.

Bio-slurry, a rich fertilizer that is a byproduct of biogas production, can dramatically boost crop yields.



Peter Mulema, 19, spreads bio-slurry to fertilize crops.

BIOGAS CREATION

- 1** Gather cow dung and water. Mix in basin until the mixture reaches a porridge-like consistency.
.....
- 2** Pour mixture into unit, making sure that no stones or debris get in.
.....
- 3** Enjoy free gas.



Peter Mulema feeds cow manure into a digester while young Michael supervises.



Leftover bio-slurry makes for a rich fertilizer.



Mulema tends the family cows, Ester (center) and Foster.

There's another benefit, one that Mulema is counting on to bring him closer to his goal of earning enough money for school. Bio-slurry, a rich fertilizer that is a byproduct of biogas production, can dramatically boost crop yields. Mulema expects he will soon be able to sell bumper crops of maize, bananas, potatoes and beans.

EFFLUENCE=AFFLUENCE

Effluence, or bio-slurry, is the muck that's left behind after the biogas digestion process. And it's safe to say that this stuff is pretty much sludgy, black liquid gold. The undigested slurry, a mixture of dung and water that's fed into the digester, undergoes a series of anaerobic digestion processes, or fermentation, to become combustible biogas.

The residual bio-slurry retains all nutrients originally present in the undigested slurry, which in the case of many small-scale farmers in Uganda is cow dung. When applied correctly, bio-slurry is a potent organic fertilizer providing higher crop yields than just plain old manure. And, as a bonus to the environment, the slurry serves as a solution for addressing nutrient depletion in agricultural soils in developing countries.



Hadija Nekesa, 80, has an easier time cooking thanks to her biogas system.



Namugosa Alisatu, 18, cooks on open flames at her grandmother's home.

Smoke from indoor cooking is a major cause of respiratory and eye diseases in the developing world and is responsible for an estimated 1.6 million deaths each year.

NOW WE'RE COOKING

Like Edith Kalale, Hadija Neseke, 80, wakes up each day before daybreak. As the head of her household, she is responsible for milking the cows for the morning tea, cooking and collecting firewood. All this is done in the darkness and, with Neseke's failing vision, is not an easy task.

As she gets older, Neseke is finding it more difficult to get around. "I cannot move as I want!" she says with a hearty laugh as she sits on the front stoop of her home in Kinyole Village. "I cannot get as much firewood as I need. I want a stove and light in my house."

Years of cooking on a traditional wood-burning stove has caused her vision to fail. Her eyes water almost constantly from damage caused by so

much exposure to smoke, and she has to take medication to reduce the watering.

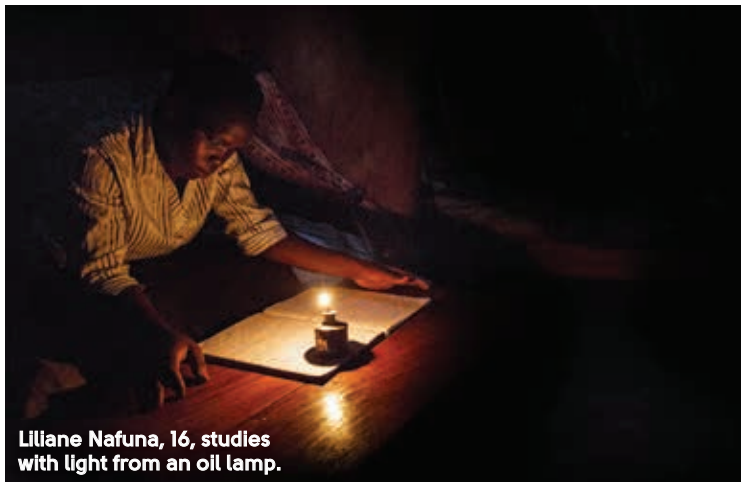
Biogas stoves reduce indoor air pollution. The gas flame is clear and does not emit any smoke. Women like Neseke no longer have to breathe in dangerous wood smoke, which is a major cause of respiratory and eye diseases in the developing world and is responsible for an untold number of deaths each year.

For years Neseke saved money from milk sales and finally has the \$52 she needs for a stove and lamp. In Kinyole, Heifer participants must pay for some of the cost of labor and help with construction.

Partners in the field support the project by supplying the sand, bricks and cement needed



Mason Isaac Muckhwana lays bricks to build a biogas digester.



Lilliane Nafuna, 16, studies with light from an oil lamp.

for construction. Heifer International Uganda provides training, maintenance help and quality control for one year.

Biogas digesters are installed underground, so a hole has to be dug first. Actual unit construction takes 6-10 days but once the digester is built, it needs to settle for three months before it's used.

Neseka's digester is 6 cubic feet, and she'll need about 100 pounds of dung a day to feed it, which is perfect for her because her cows produce 100-130 pounds on average every day. The digester must be fed daily to build up gas stores.

A well-maintained unit has a lifespan of up to 30 years and is relatively inexpensive to troubleshoot if something breaks. When something goes wrong, Heifer Uganda dispatches someone who is trained to make repairs, and that person also trains owners of the unit so they can handle future minor repairs and maintenance. Most often the trainers are called upon to help fix broken light bulbs, clear out stove blockage due to oxidation and drain away condensation.

MORE TIME, MORE MONEY

Jamira Webisa Nalyaka makes *mandaz* to sell to children as a mid-afternoon snack. *Mandaz* is a sticky, sweet fried dough ball, Uganda's answer to the donut.

Seated next to her biogas stove, Nalyaka mixes one bag of flour with sugar and baking soda. Quietly and with great efficiency, she fries the dough. She averages one *mandaz* every 30 seconds, making about 80 *mandaz* a day. Before she had a biogas stove, she would wake up at 6 a.m. to collect wood so she could cook, making sure the donuts were ready by 10 a.m. Today, she wakes up at 7 a.m. and is done within the hour.

Money made from the *mandaz* sales pays for her children's school uniforms. Her other



Jamira Webisa Nalyaka, 62, cooks *mandaz* on a burner fueled with biogas.



Children buy *mandaz* on their way to school.

source of income is banana sales, which doubled since she began using bio-slurry as fertilizer.

Nalyaka credits her good friend and neighbor Zaina Muyobo, 49, for introducing her to biogas. Muyobo learned about biogas in 2010 through a commercial on the radio. Today, not only is she a proud owner of her own biogas digester, but she also works as a biogas promoter in her village in the Manafwa district. Muyobo earns \$20 for every digester she sells.

As a promoter, she invites local farmer families to her home for biogas stove demonstrations. As one of ten promoters in her district, she does one presentation a day. "People are most interested



Neighbors Jamira Webisa Nalyaka (right) and Zaina Muyobo compare notes on their biogas digesters.



Zalna Muyobo tends her thriving coffee seedling nursery.

Heifer Uganda and Kampala's Makerere University are teaming up to see if bio-slurry is a commercially viable form of fertilizer.

in the bio-slurry and what it can do," she said. Muyobo credits the slurry with her success as a coffee farmer. Not only does she sell enough coffee to afford a comfortable lifestyle for her and her family, but her coffee plants are of such high quality that the Uganda Coffee Development Authority, a government agency created to regulate Uganda's coffee industry, buys her seeds and has made her a nursery coordinator, allowing her to sell her seedlings to nurseries around the country.

Farmers who cannot afford a biogas digester can still reap the rewards of bio-slurry. Muyobo sells her slurry at \$2.60 a bag.

Heifer Uganda and Kampala's Makerere University are teaming up to see if bio-slurry is a



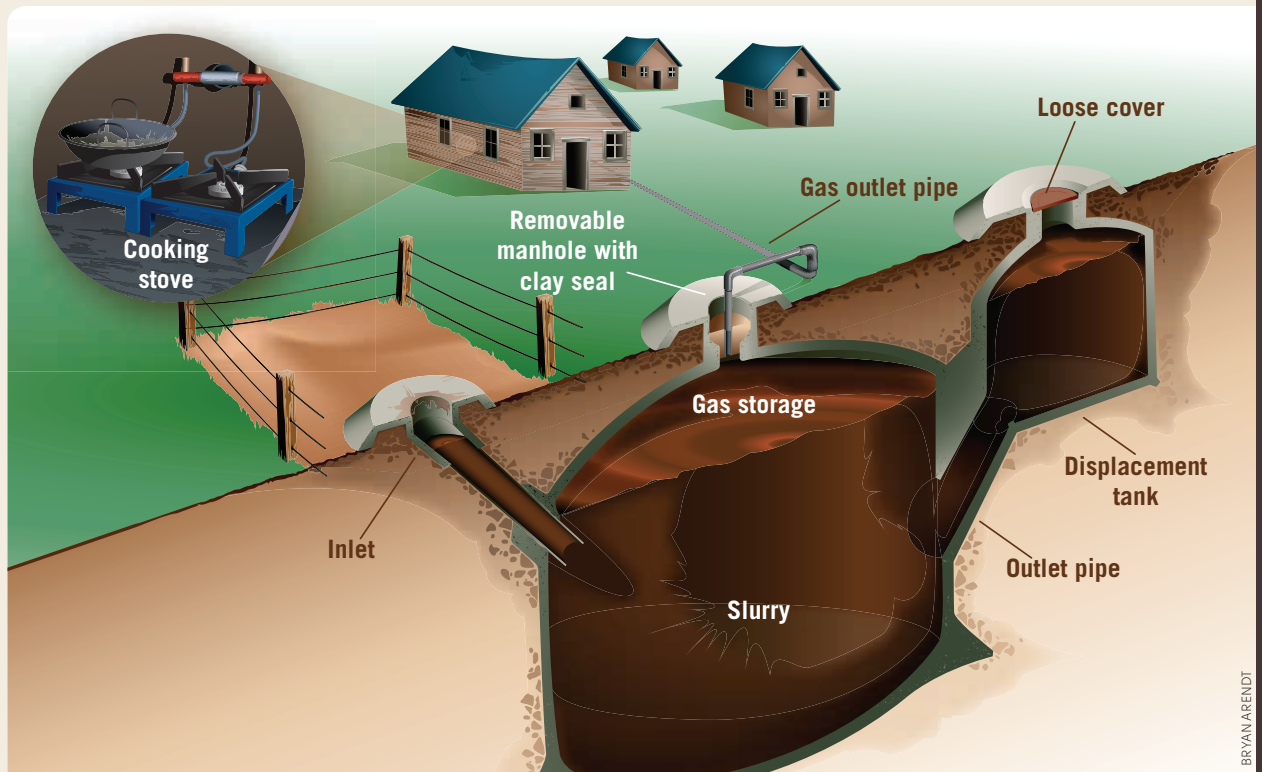
Bio-slurry from a biogas digester is mixed with water to make a rich fertilizer.

commercially viable form of fertilizer. If so, there is opportunity in creating a bio-slurry value chain, allowing farmers to team up and form co-ops to aggregate and sell their slurry to larger markets.

In the meantime, plenty of farmers already know the value of biogas and bio-slurry. When asked what her favorite thing about biogas is, Muyobo, delighted and proud, shouted, "It's free gas! It's free fertilizer! It's free money!" ■

Biogas Basics

By Jason Woods



BRYAN ARENDT

B iogas digesters can be a key component of an integrated farm, turning organic waste into rich fertilizer and combustible methane gas. The gas is used to generate light for the house and heat for cooking. Children can study past sunset thanks to the lighting, and time once spent fetching fuel can go to other tasks. Heifer International Uganda initiated a biogas program to address deforestation, which is a serious problem in the country.

Additionally, biogas digesters:

- Reduce air pollution from smoke, and associated respiratory diseases and eye ailments
- Create more free time for families, particularly female members of households, who no longer have to collect firewood
- Generate opportunities for local employment through construction of biogas digesters
- Control greenhouse gas emissions from livestock in a responsible way

- Bio-slurry, a biogas production byproduct, is used to improve agricultural yields and restore soil fertility. Heifer Uganda is also testing the use of bio-slurry as a repellent to protect both livestock and dogs from pests.

- Although biogas digesters are expensive—fixed dome digesters, like those primarily used in Uganda, cost \$800-\$1,000—families no longer have to buy or collect fuel. Time in the kitchen is often reduced as well (for example, the cooking time for beans is reduced from one hour to 30 minutes after a switch to biogas).

- Through the biogas initiative, Heifer Uganda has supported the construction of digesters for more than 500 farmers. In addition to Uganda, Heifer International supports the use of biogas digesters for farmers in Bangladesh, Cambodia, Cameroon, China, Honduras, India, Nepal, Nicaragua, the Philippines, Rwanda, Senegal, Tanzania and Vietnam.



Students Read to

A legacy of giving thrives in a unique school in Rochester, N.Y.

By Jennifer Wheary, *World Ark* contributor | Photos by Rimaz Kaleel



Even the principal dug in to help meet the Read to Feed challenge. From left, Xavier Melendez, Aden Osman and Tyrin Hill read with Principal Jay Piper.

Feed for Literacy and Livestock



ROCHESTER, N.Y. — It was mid-June 2014, and students were sweating it out at The Children’s School of Rochester, a public school for kindergarteners through sixth-graders in Rochester, New York. The school’s kindergartners and fifth-graders were in the final stretch of a year-long commitment to Heifer’s Read to Feed® program. If reached, their goal to read 5,000 hours would earn a \$5,000 pledge from a local philanthropist, enough to purchase an entire gift ark of animals for people in need. With just one week left in the school year, the students were 415 hours short of their goal.

Students at The Children’s School first enlisted in Read to Feed more than a decade ago, and since then, classes earned enough money for gift arks every year except one. Pressure was high, and 2014’s Read to Feed classes had no desire to break the streak.

The entire school tracked progress all year long on a large poster with a patchwork of repeating grids colored by hand. Each large box represented 100 hours of reading by students. While most of the poster was filled in by June, everyone was nervous about the conspicuous blank spots.

Fifth-grader Ruby Brown, age 11, appointed herself class cheerleader as the deadline ticked closer, encouraging her peers to push themselves to make the goal. “I ask everyone to look at the board and see that there are really not that many hours left. We’re so close. We all just need to read a little more each day, and then we will be able to help the people who need help,” she said.

All over the school, children read alone or to the adults around them. Everyone focused on logging precious reading hours as the deadline drew near. At home, they read to parents, siblings and friends. Posters around the school offered encouragement and reminders of the communities and families helped through past years’ animal donations.

“I would say go for it,” advised Eniyah Peart, a third-grader and Read to Feed veteran. “Everyone just read an hour every day. Think about how much that is.” Phillip Urai, another third-grader, told the students not to give up. “Read every day for an hour. Read on the bus, read wherever you can.”

Students at The Children’s School came to understand that every minute spent reading added up. Eniyah explained, “For me the most craziest thing ... was when I was like, ‘Wow, how many hours have we read?’ As 44 kids reading at least 20 minutes every day, we got a lot of

hours [last year], and I think we saved a lot of lives. We reached our goal early, even.”

Eniyah spoke positively about her Read to Feed experience. “My favorite part of [it] was just knowing that I did something good, and I helped someone to be able to have as good an education as I did.”

A SPECIAL PLACE

From the outside, The Children’s School looks like any other school. But entering its doors, one quickly realizes it



Students tracked progress all year long on a poster with a patchwork of repeating grids colored in by hand. Each large box represented 100 hours read by students.



Eshetu Setegn, a volunteer at the school, helps kindergartener Thanh Le with his reading.



Students (left to right) Thanh Le, Merveille Marango, Bisharo Abukar, Priyanka Mongar and Chifumnanya Okafor cram in some last-minute reading.

is a special place. Among the many unique characteristics of the school is the fact that its nearly 300 students hail from 30 countries and speak more than 20 different languages.

Many of the walls between classrooms were removed, creating “grade-level families” and allowing teachers to group students flexibly in ways that fit the day’s lessons—for example, integrating English language learners with native speakers for some of the day, grouping by language abilities at other points. It is an approach that the school’s principal, Jay Piper, said benefits students and teachers alike.

Each year, the school’s music teacher composes an original welcome song. Teachers sing it to students on the first day of classes. Within a few weeks, all the students have learned the song by heart. They sing it to greet visitors to the school. As with the open walls between classrooms, the welcome song creates an atmosphere of inclusion.

The Children’s School embodies diversity—racially, ethnically and economically. Many of its students fled

war, famine, natural disaster and poverty in their home countries, and many spent time in refugee camps. More than three out of four students come from low-income families and qualify for free or reduced-price lunch. In addition to students from places as far off as Bhutan, Yemen, Thailand, Mexico, Sudan and China, the school also serves the children of local families who seek a culturally diverse atmosphere.

The Children’s School has the distinction of being one of the first modern U.S. public schools founded by teachers and an administrator, as opposed to being mandated by a central school district. Since its founding in 1991, the school has dedicated itself to helping students who emigrated from other countries and for whom English is a second language. The passion that drove the school’s founding remains evident in its vibrant halls, its child-centered approach and its energetic, committed staff.

As a community focused on shared goals, The Children’s School is a can-do sort of place. That is one of the main reasons the school has achieved remarkable results in Heifer’s Read to Feed program.



Since its founding in 1991, the school has dedicated itself to helping students who emigrated from other countries and for whom English is a second language.

CREATING COMMUNITY AND LOVE OF READING

Something clicked when teacher Nancy Sundberg first read about Heifer's Read to Feed program in a magazine. The program "looked like a really interesting way to tie a whole lot of threads together" for her students, she said. "So many of them are from other countries and come from families who have been struggling."

Sundberg felt that participating in Read to Feed could inspire her students with stories of families who had survived adversity and moved on to better things. She also saw Read to Feed as an opportunity for her students to examine the larger causes—global poverty, political upheaval and natural disasters—behind the hardships so many of the families at the school experienced.

But what excited Sundberg most was her hunch that, by providing a way to make things better for others, participating in Read to Feed would motivate her students to read. Reading takes priority in any elementary school. But for the students of The Children's School, roughly half of whom speak a language other than English at home, acquiring reading skills is especially important. "Time spent reading is one of the most important factors ... needed to build language skills and move toward language proficiency," Sundberg explained.

When they find a book they love, they keep it, Sundberg said. "This is the start of their personal library. They finally have a book in their house." Students also move beyond seeing reading as an obligatory homework assignment. "Students begin to see reading as a way to learn. They realize it's a way to have fun, a door to all kinds of opportunity. And also a way to help others."

Students move from only wanting to get class credit for reading to looking for materials they can share with their families. Often students pick out books they feel will help with something the family is going through. "When that

happens, I know they are seeing reading as a tool, that reading is becoming part of their life," Sundberg observed.

Many of the parents in the school are learning English themselves, so having their children read to them in English aids the whole family. Aden Osman, a fifth-grader, talked about what motivates his reading. "Giving animals to people is my favorite part. We also help our own parents by reading to them. It's like they go to school, too."

Reading to family members helps students build long-lasting confidence and instills in them a responsibility to share the skills they've acquired. Fourth-grader Lashon Alexander, who participated in Read to Feed two years ago, takes his role very seriously. "My grandmother sometimes forgets some words, and I just help her."

His classmate Meh Ri Sha said she takes every opportunity she can to share her reading skills. "On



Meh Ri Sha said she takes every opportunity she can to share her reading skills. "On Father's Day, we had a card we gave to my dad, and he was having trouble reading it because he hasn't learned [English] really, so I helped him read [the card]. I always help when he has trouble reading."



Teacher Nancy Sundberg introduced the Read to Feed program at the school as a way to promote literacy, build community and foster generosity.

Father's Day, we had a card we gave to my dad, and he was having trouble reading it because he hasn't learned [English] really, so I helped him read [the card]. I always help when he has trouble reading."

Over the years, Sundberg has seen many students transformed by their participation in Read to Feed. "Being part of Read to Feed gives students a sense of serving. They become aware that there is something that they can do that will be of use to other people," she said.

RESULTS BEYOND IMAGINATION

Sundberg recalled the story of Kyondre Anderson, a former student who participated in Read to Feed as a second-grader. "Kyondre was a tough kid ... aggressive, hostile at times, confrontational in class, but with a parent who worked hard to get him more tuned into school."

Kyondre's mother and Sundberg tried to motivate him to read, helping him locate books about sports, superheroes, snakes and racecars. Still, it was difficult to get Kyondre to put the time in. "That year was no walk in the park with Kyondre," Sundberg said.

Two and a half weeks before school ended, Kyondre and his classmates were 280 hours short of their goal. This was the year Hurricane Katrina devastated large parts of the

South. The children decided to ask Heifer to direct some donations to families affected by the storm. The class had just finished watching a news update that focused on a jazz musician who had lost everything.

Sundberg remembered what happened next. "Kyondre jumped to his feet, pounding his fists on the table, and yelled out, and I'll always remember these words, 'Listen up, guys, we can do it, we have to do it, we will do it! We can't let them down!'"

Kyondre then marched to the front of the room and took charge. He counted the days of school left and the number of children sitting in class. He directed the "smart math kids" to figure out how much each student would have to read each day to make the goal. He insisted everyone take more books home and asked Sundberg to assign everyone double reading time.

Things came down to the wire. When the class tabulated reading hours on the last day of school, they had reached 5,087 hours. Kyondre assigned groups to figure out what the class could buy with the extra \$87. The class had to wait until the following school year to celebrate and formally receive a plaque that would be hung in the library. When the plaque was presented, Kyondre was at Nancy's side to explain to the entire school how the class had pulled together to hit their goal.

GOAL ACHIEVED

On June 23, 2014, a steamy Monday two days before the end of the school year, students at The Children's School earned their ark. Sundberg was ready, having pre-ordered the plaque, just in case. As the children tabulated their reading hours and realized they hit their goal, Principal Piper entered the room with this year's plaque in hand. The celebration started on the spot.

After Piper presented the plaque, a group of fifth-graders unveiled a nearly 4-foot-long toy ark they bought for the kindergartners as a memento of their cooperation and success. The fifth-graders said the ark, with its accompanying toy animals, was to help the younger children remember what they did for others. When the kindergartners entered first grade the next fall, they proudly took the ark with them. ■

Writer Caitlin Johnson contributed to this article.

READ
TO
FEED®

WHY READ TO FEED?

By Jen Girten, Heifer manager of education program development

Heifer's Read to Feed® program gives students a real and meaningful way to make a difference in the lives of families worldwide. Students experience what it means to be a part of the global community and to make a positive impact. Additionally, the Read to Feed program gives students a reason to practice their reading skills. Reading abundantly in early grade levels is a predictor of academic success.

The Read to Feed program has plenty of benefits for educators, too! Beyond fundraising tools, Heifer offers teachers a variety of educational resources: lesson plans, videos and children's books. These teaching tools motivate student engagement and cooperation, while supporting academic skills with rich content that teachers and students can explore together.

Heifer's school resources are designed to be flexible, allowing teachers to choose the elements that best fit their students' needs. To help educators meet the goals of their schools' curricula, the lesson plans are aligned to standards in language arts, math, science and social studies. The lesson plans are written, reviewed and tested by experienced teachers.

Beautifully illustrated children's books form the centerpiece of the teaching units, which vary by geographic focus and grade level. The recently released book *Flora and the Runaway Rooster* is set in Rwanda and features a feisty girl who navigates an adventure-filled afternoon and learns the importance of Passing on the Gift. The lessons bring a deeper understanding of the rich culture and resources in Rwanda. The previously released units feature stories from Heifer's work in Asia, the Americas and Europe.

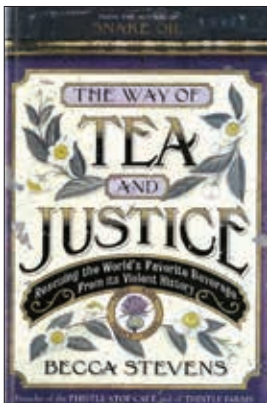
Students are invited to Read to Feed at any time, but occasionally we plan some extra fun with promotions and incentives for teachers and students who support Heifer's work. This spring, we have a special Read to Feed matching gift challenge! Educators are encouraged to visit www.readtofeed.org to get the latest Read to Feed news and resources.





The Way of Tea and Rescuing the World's Favorite Beverage from

Review by Janet Jones, *World Ark* contributor



The Way of Tea and Justice: Rescuing the World's Favorite Beverage from Its Violent History
By Becca Stevens
FaithWords, 2014
Hardcover, 240 pages, \$22

So, let's say you are the director of a medium-sized, thriving nonprofit. Let's say that, in order to give your clientele opportunities to learn new work skills, you set up a manufacturing, distribution and retail sales enterprise. That, too, is thriving, thanks to lots of hard work.

Then, let's say you have a great idea to open a café in a raw space adjacent to the workplace. You can see its benefits clearly: diversified jobs, filling a gap in the food service arena, a chance to teach customers about your mission to help women who survived prostitution, trafficking and addiction. Everyone is excited. Clients are already jockeying to join the wait staff, even brainstorming their uniforms.

Problem? Not unless you consider that you have no experience in setting up a restaurant. Nor in demolition or construction. Nor in flooring, lighting, buying fixtures, navigating

city regulations, creating menus or cooking on a commercial scale. Oh, and lest we forget: no funding! But your vision—to build a place for community, with food, coffee and especially tea to nourish body and spirit—is powerful enough to overcome the obstacles.

The Way of Tea and Justice: Rescuing the World's Favorite Beverage from Its Violent History chronicles the successful opening of the Thistle Stop Café in Nashville, Tennessee. More broadly, the book ties the café's mission with thousands of years of history to show how the production, trade and consumption of tea over the ages depended largely on the subservience of women.

The author, the Rev. Becca Stevens, is an Episcopal priest and chaplain of St. Augustine's at Vanderbilt University. She is also the founder of Magdalene, residential communities of women working to overcome pasts marred by prostitution, trafficking and addiction. Stevens founded the social enterprise Thistle Farms in 2001. It currently employs nearly 50 Magdalene residents and graduates and houses a natural body care line, a paper and sewing studio and the Thistle Stop Café.

The most widely consumed beverage, after water, in the world, tea is connected to justice, revolution and religion like no other plant. Tea is tied to the work and mission of Thistle Farms through the stories of sexual violence in the fields of India and the trading of opiates in China. But tea has a noble story, too, as its rituals and traditions are great companions for cultivating a contemplative heart. "Through our attention to how it is grown and by whom, a tea rooted in justice is a great companion for our spiritual journey," Stevens reminds us. "I want



READ TO FEED



"We read Flora and the Runaway Rooster, and I liked when the adventurous rooster ran away. Through Read to Feed I learned that the gift of an animal can change people's lives. I'm glad that I was able to help change someone's life."

ISABELLA VILLAGOMEZ, 2ND GRADE
Atlanta International School



"What I liked about Flora and the Runaway Rooster was when the rooster, Kubika, ran away. I like that part because it was very interesting. From Read to Feed I learned that people all over the world need help from us!"

LAUREN FOGLESONG, 2ND GRADE
Atlanta International School

LEARN MORE AT WWW.READTOFEED.ORG.

Justice: Its Violent History

to drink more [tea] and get to the root of where it comes from and see where it leads. I want to find out how justice tastes on the backs of the oldest leaves that have survived so much injustice," she says.

The story of Thistle Stop Café is laced with history and theology and steeped in Stevens' determination to tell readers about the women who, for countless generations, suffered greatly because of the tea trade. "Tea provides a window through which we can view a global history, economics, exploration and oppression," Stevens said.

Stevens and the Thistle Farms community focused on four underlying principles for serving up "a revolutionary tea, while honoring the historical way of tea":

- Hospitality
- *Chado*, which means "the way of tea" in Japanese, and is exemplified by harmony, cleanliness and tranquility
- Story, or honoring the individual stories of courage that give hope to the world
- Healing, by offering tea that is all natural and served with respect for the gifts of creation

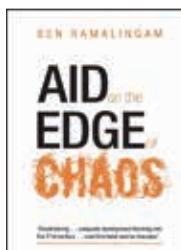
With these principles, Stevens makes the ubiquitous and age-old tea leaf emblematic of a shift toward a more fair and hopeful world. "The way of tea is meant to lead us with intention toward peace," she wrote. "By drinking teas grown and picked with justice at its heart, we are sharing a cup with a world that still thirsts to reclaim our past for a more equitable future."

Thistle Farms Café is open for business, offering healthy meals and fairly traded teas served up by women who have achieved new lives. A huge chandelier gracing the space is made from donated-with-love, flower-patterned, sometimes chipped or broken, story-bearing china teacups, a fitting illumination for *The Way of Tea and Justice*. ■

NEW AND NOTEWORTHY

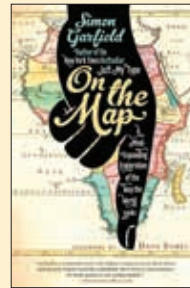
**Aid on the Edge of Chaos:
Rethinking International
Cooperation in a Complex World**

By Ben Ramalingam



THREE FAVORITES ON: MAPS

Relax—we'll let you off the hook if you're really interested in Heifer's work with biogas in Uganda but can't quite remember where the country is located. But if you're interested in polishing your world geography while learning how maps have shaped human history, give the books below a try.



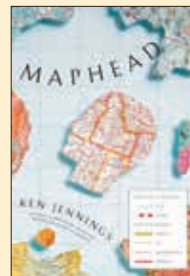
On the Map: A Mind-Expanding Exploration of the Way the World Works

By **Simon Garfield**



A History of the World in Twelve Maps

By **Jerry Brotton**



Maphead: Charting the Wide, Weird World of Geography Wonks

By **Ken Jennings**



Nepal Tries to Recover After

Story and photos by Alina Karki, communication officer for Heifer Nepal



The flood that hit Nepal in August of 2014 was among the strongest seen in many years. Three days of incessant rain caused multiple landslides and flooding in the southern part of the country, killing at least 256 people and injuring 157. At least 254 people went missing, and 15,234 families lost their homes.

More than half of Nepal's 75 districts were affected by the flooding, with the greatest damage concentrated in 26 districts. Heifer International Nepal works in five of the districts that were hit the hardest. In those areas, more than 50 Heifer project beneficiaries died, and many more went missing. Nearly 10,000 homes belonging to Heifer project participants

were damaged and more than 4,500 were destroyed. Heifer farmers in Nepal lost more than 5,000 animals in the flood. Five Heifer Nepal staff members had their homes swept away or damaged by water and mud.

During the flood, basics such as food, safe drinking water, clean clothes, warm blankets and sanitary products for women were unavailable.

In the village of Fattepur, Heifer beneficiary Balkumari Chaudhary helplessly watched as the river swept away her husband and two daughters. Since that moment, she has not spoken or responded to anyone. Post-traumatic stress is rampant among the survivors, and symptoms include loss of appetite, insomnia and frequent flashbacks of the event.

Collapsed bridges and landslides blocking major highways made travel impossible. Relief programs couldn't reach survivors promptly, and with each passing day, the miseries of survivors worsened. Villages were completely isolated from the rest of the world for the first few days after the flood, as the water levels remained high and even more flooding was still a possibility.

At a time when the communities could not be reached, people in the communities reached out to their neighbors. Stories of tremendous courage and solidarity were common across Heifer project areas. Heifer's self-help groups collected grains and dry foods along with other essentials, such as clothes, blankets and utensils,



Horrific, Deadly Floods



for the victims. In the village of Tithireya, women showed exceptional courage by preparing and feeding the victims, even though the flood also affected them. In Mohamadpur, Heifer beneficiaries volunteered with the Red Cross to distribute relief.

At the same time, Heifer mobilized its staff and partner organization staff members in affected areas to assess the damages. They visited Heifer communities to survey the damages while counseling victims, even though some of them were victims themselves. Heifer's project partners started raising funds and collecting food and other relief supplies. They also

worked with local government units to bring in medical teams for health checkups after the flu and other illnesses began to spread.

Heifer provided an initial \$50,000 to five districts affected by the flood to mobilize immediate relief supplies while beginning to focus on rehabilitating livestock and agricultural systems for the long term. Due to the Nepalese government's "one door" policy, the donation had to be made through the government's District Disaster Relief Committee. Heifer's project management committee, a network of partners, cooperatives and self-help groups, helped channel relief to families in need. ■

Flooding in Nepal killed more than 50 Heifer farmers in August of 2014, and 4,500 project participants lost their homes.



Mississippi Maverick

By Molly Fincher, *World Ark* writer

PHOTO COURTESY OF COMEDY CENTRAL



Doing good by donating money or volunteering a few hours didn't seem nearly extreme enough for comedian Kurt Braunohler. So he pitched a show to Comedy Central that would center on a burning question: "What's the dumbest way to make the world a better place?" The network bit, and Braunohler set off down the Mississippi River on a jet ski to raise money for Heifer International. His seven-day, thousand-mile odyssey from Chicago to New Orleans raised \$34,000.



WORLD ARK: So, jet skiing down the Mississippi River. How did this idea come about?

KURT: I always thought it would be cool to jet ski across the country, but turns out that isn't actually physically possible. But I was told that it might be possible to jet ski down the Mississippi. At the time, we were working on "Roustabout," and the whole idea of the [TV] show is, "What's the dumbest way to make the world a better place?" So it all came together.

How long was the trip?

It was a 1,000-mile trip. We did 600

miles on the actual river, and the rest we had to drive. All told, it was a 7-day trip, and I spent 29 hours on the jet ski.

That's a lot of hours. How did you entertain yourself?

Sometimes after hours of riding, I would have this zen moment where everything was perfect, and I was at one with the river. Other times, when it was choppy and windy, it really was work. It was really hard.

I had a mic and a camera on me the whole time, so I did a lot of improvising for the show. Making things up for hours on end.



Braunohler (pictured top left) is no stranger to many stunts—you may already know his work from his infamous “How Do I Land?” skywriting joke. He let fans know about his jet ski journey by posting photos and video to YouTube and Instagram.

What was it like? Can you describe your experience?

It was insane. But it was really cool, too. The Mississippi is such a symbol of America, in a way. It was cool to experience what it's really like to go down the Mississippi. No one rides down the river for pleasure; it's very, very dangerous. It's only used by commercial barges. But because of that and the fact that you can't build too close to the river because of flooding, there are these long stretches that have remained in their natural state. It's so beautiful. It was like going back and experiencing the river as Huck Finn might have experienced it.

Did you ever regret this method of fundraising?

Yeah, when we ran out of gas the first day and had to crash land at an abandoned grain silo. It was essentially a nightmare factory. At that point I thought we may have made a horrible mistake.

Were there moments that made you glad you did this crazy thing?

Getting out on the river that first time was a great moment. It's beautiful.

Why did you choose to support Heifer?

We needed someone that people could trust, because you can't trust me [laughs]. We were looking at several nonprofits, and Heifer's just been doing it for so long. It also has the recognition; people know and understand it. We needed an organization that was well respected and trusted, so we went with Heifer.

Would you recommend jet skiing down the Mississippi or something like it to others?

You should totally do it. I encourage any type of absurd ridiculousness that can exist in the world. I thought it was great. It was really nice to wake up in the morning and know what we were doing was making the world a better place.

Watch all nine episodes of Braunohler's antics online at www.cc.com/shows/roustabout



Coming Full Circle

By Irina V. Ellison, Women's Lambing participant



Ellison, then 7, poses beside a peace pole with her siblings and Nepali children.

Growing up, I learned that there are two forms of travel: vacation, a decadence during which people spend their days sipping fruity drinks and lounging poolside; and trips, an opportunity to challenge oneself, to explore and experience an exotic land. In 1987, my parents, who have a lifelong passion for travel and always wanted to see Mt. Everest, took me and my two older siblings on a trip to Nepal. This wouldn't be a vacation to Disney World or the Jersey Shore, they told us. This trip would be an adventure! I was sold.

Although I was just 7-years-old at the time, the warmth, generosity and compassion of the people of Nepal, as well as the extreme poverty, were indefinitely imprinted on me. As we drove along the rural mountain roads, leaving the temples and villages in the dust behind our old taxi, we came across a small group of Nepalese

children playing around a peace pole near a mountainside lookout. My parents quickly ushered us out of the car to greet the girls, seizing the opportunity to unite two groups of children in a shared message of building peace and community.

For more than 10 years, I have worked as an educator in the biological sciences, emphasizing the importance of finding meaningful connections in order to gain a greater understanding of basic science. To say that I value education is an understatement; I have built my entire life around it. I came to the Heifer Farm with the idea of developing an interdisciplinary course on hunger and biology for my college students.

You can imagine my feeling of destiny when, 27 years after my trip to Nepal, I came across the same peace pole on the Heifer Farm, a world away in Rutland, Massachusetts! When I



found the peace pole again after so many years, I felt the serenity of confirmation. I knew I was supposed to be at the farm, and that my ongoing work on interdisciplinary education and public health is a meaningful and valuable part of my personal journey, my lifelong trip.

To take part in the Women's Lambing program at Heifer Farm was more than an enriching experience. Just like my travels to Nepal, my visit to the Heifer Farm was transformative. Although I fully anticipated a wonderful experience, my time on the farm far surpassed my expectations. From the moment I arrived, I felt the passion with which the whole team not only embraced but also lived the mission of Heifer International every day. I left the farm restored and inspired, seeing clearly the connections between hunger, sustainability, education and gender equity.

The lessons I learned on the farm

underscored the interdisciplinary nature of complex global problems and the importance of understanding the shared human experience. I am so grateful to have shared this experience with an amazing group of caring, strong women, and I appreciate how the program modeled Heifer's mission of empowering women around the world and building a healthy connection with sustainable food.

It is so vital to take the time to see the miracle in the every day. Thank you, Heifer International, for granting me this miracle and for reminding me that whether you live in Nepal or the U.S., building a culture of peace is a key element in realizing our shared trip in finding a sustainable end to hunger.

A peace pole Ellison spotted during the Women's Lambing program at Heifer Farm brought back fond memories of a childhood trip to Nepal.

To learn more about Women's Lambing, visit www.heifer.org/farm

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NNANIMALFY14 Life Changing Animals

NNCHILDRENFY14 Global Children

NNEMPOWERFY14 Women Farmers



Missing Ewe!



Thinking of you.



Hang in there!



Wish you were here.



All "kidding" aside.
Happy Birthday.

HEIFER GREETING CARDS | \$13

Have something to say? Say it with these adorable baby Heifer animals! This set of 20 cards and 22 matching envelopes features five different animals with five encouraging messages, such as "Hang in there!" and "Missing Ewe!"

69.NGRTCDFY15



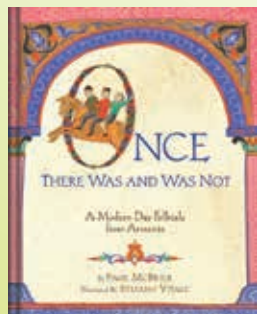
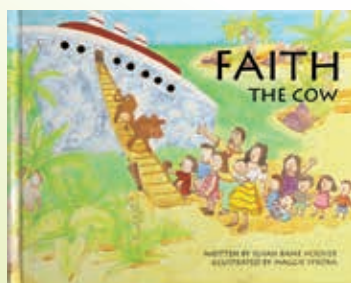
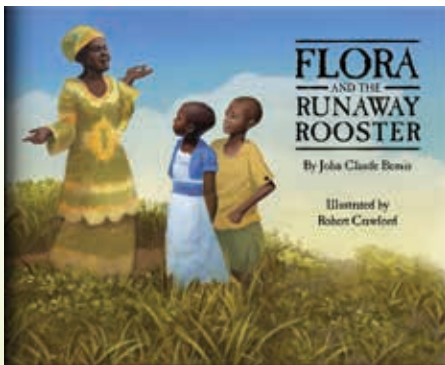
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“We all just need to read a little more each day, and then we will be able to help the people who need help.”

Fifth-grader Ruby Brown

Every year, kindergarteners and fifth-graders at The Children’s School in Rochester, New York, devour stacks of books for Heifer’s Read to Feed® program. Reading is especially important at the school, which caters largely to students for whom English is a second language. Last year, the students logged 5,000 reading hours to donate \$5,000 to Heifer.



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TO FEED AN ENTIRE
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