

Betty Londergan blogs around the world for Heifer | 10

WorldArk

THE MAGAZINE OF HEIFER INTERNATIONAL © AUGUST 2012

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Dear Fellow Activists,

DO WE IN THE DEVELOPMENT SECTOR really believe hunger and poverty can be eliminated within 20 to 30 years? It's sometimes difficult to tell an organization's end goal from website messaging alone. I can assure you that at Heifer we resolutely believe that an end to hunger and poverty is within our reach.

Today, 1 billion people do not have access to the right kind of food or even enough food. A shameful number of children under the age of 5 die every day from causes associated with malnutrition. Access to clean, safe water is woefully inadequate for hundreds of millions of people.

Yet there is hope, optimism and abundance. Our world is changing rapidly, offering astonishing opportunities for those in need to achieve a sustainable livelihood. Many have to do with technology. Others have to do with deep, fundamental political and social changes that are driven by pervasive and affordable communication technologies. As a reader of this magazine, I believe you already understand that we are all connected—that what happens in the deep forests of Cameroon could affect us within days.

The key point is that improving the lives of people in every corner of the world ultimately improves all of our lives. The growth of cell phones is but one expression of this. In all my travels this year in some of the remotest parts of the world, 2G and 3G technology is pervasive, with prices falling and penetration growing. Let's imagine the opportunities this technology has for the poor and hungry. It means access to information on world events, health, weather, crop prices and bank rates; the potential benefits are enormous.

Energy innovations hold similar possibilities for growth. As we master solar energy, the sun will rapidly help us solve the potable water issue. We will be able to desalinate what is needed, quickly and affordably. Electricity will be available at a low cost so that families will have ample light to study, refrigerate foods, charge cell phones and even watch TV.

So, how does Heifer fit in? It is important that we stay current with what is happening and be nimble in making use of advances that can sustainably change the lives of small-



PHOTO BY BETTY LONGERAN

Pierre Ferrari, president and CEO, and Oscar Castaneda, vice president for the Americas, visit a solar-powered fish hatchery at Lake Peligre in the Central Plateau of Haiti. Heifer Haiti provides cages, training, feed and fingerlings as part of the project with local partner ACDELPE.

holder farming families. Many of the evolutionary shifts we have been making in our approach to end poverty and hunger will allow for a rapid adoption of appropriate and affordable technologies.

The simple idea is that market-connected farmers will have available cash flows with which to invest in technologies, products and services to improve their lives. Heifer supports turning the scarce and expensive resources of today into accessible options for all. I believe that with these changes, we will see the end to hunger and poverty.

Yours in abundance,

President and CEO Pierre U. Ferrari

They'll open a book; you'll open their world.



Read to Feed® is a reading incentive program that fosters students' love for reading and shows them they have the ability to change the world. This popular tool for teachers is a great introduction to the work Heifer does around the world, has a brand new look and is now even easier to use.



For more information, or to order the new Read to Feed® materials, visit www.heifer.org/read or call (877) 275-READ (7323).





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Cover photo by Dave Anderson

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BETTER NUTRITION FOR GIRLS

I've been pleased to contribute to Heifer, and it is good to read how people are using the gifts of knowledge and animals to improve their lives. I've just read the article, "For the Record," in *World Ark* magazine about baby girls.

As an international board-certified lactation consultant, I'm aware of how circumstances can impact lives, especially those of women in resource-poor settings. Babies do not often survive or live healthy lives in such places. Having enough food to eat can make so much difference to lifelong good health. However, breastfeeding makes a tremendous impact on the survival and long-term health effects of the baby and the mother. There are many excellent studies of how breastfeeding can improve the lives of infants, toddlers and their mothers. Please consider this information when planning and publishing future articles.

JUDIE GUBALA
Rocky Hill, Conn.

GOOD WORK IN MEXICO

What I saw on a recent visit to Oaxaca, Mexico, was a lot different from what the average tourist sees. Like most other foreigners who visit this beautiful city in the southern highlands of the country, I saw its lovely architecture and experienced its festive spirit, but I also witnessed something that few are able to see: Heifer International at work!

As a donor, I had read *World Ark*, so I knew about the good things that are being done around the world, but I really wanted to see something in person.

Heifer Mexico Country Director Alejandro Lopez-Musalem agreed to

take me to a project near the village of Zimatlán, a 45-minute drive south of Oaxaca, to spend the day with Heifer partner organization veterinarian Patricia Martinez, who recently graduated from vet school. She was to visit several families that had received lambs, and they were due for their anti-parasite shots.

The area was extremely dry this time of year (spring), with arid mountains to its west. It was to the foothills of these mountains that Patricia and I were headed. I learned that this is one of the poorest *municipios* (counties) in all of Mexico. We got into her high-clearance pickup truck and headed out of town along a dusty road, which soon became steep and quite rocky. I felt like I was in one of those pickup truck commercials on TV.

Doña Ricarda, a lovely Zapoteca woman, greeted us at the first house. She proudly showed us her eight sheep, which she was keeping in a rough corral made of any kind of material she could find: an old box-spring, some fencing material, an upright bicycle frame, all tied together with wire and rope to make an enclosure of about 8 feet x 20 feet. Two of the animals came from Heifer. They were the healthiest-looking of the bunch, and she was especially proud of them. We gave all the animals their shots, chatted with Doña Ricarda for a while about some concerns that she had, and then headed up the hill, on foot this time, to the next *rancho*.

We visited four more of these homesteads, and each was similar to Doña Ricarda's in the difficulty of its conditions. Yet everyone we met was extremely polite and hospitable. About 2 p.m.

I started to wonder how I'd manage to continue climbing these dusty hills without some nourishment. Imagine my relief when one of the women we were visiting asked us if we'd like something to eat. She brought out potato soup, tortillas she had made that morning and a mug of *atole*, a thick, sweet drink made of cornmeal. We sat in the shade and enjoyed this simple but tasty meal and shared our stories. Hers was a painful one, but she was optimistic about the future, thanks in large part to the animals and help she has received from Heifer.

My overall impression is that Heifer International is doing all the right things in Mexico. The Heifer concept of Passing on the Gift is beautiful in its simplicity and effectiveness, and the program that I observed is very efficiently organized and operated. I feel that my contributions to Heifer International are being put to excellent use. In addition to that, the memories of the day I spent in the foothills of Zimatlán will remain with me for a long time.

ROBERT OGDEN
Syracuse, N.Y.

CONCERNED ABOUT SENEGAL

I was very excited to come across your article (Summer 2011) on Senegal. It was excellent, thorough, multifaceted and just plain fine. Thank you. I'm a former volunteer in Casamance, the southern part of Senegal below the Gambia. I did garden fencing and maintenance, well digging in two gardens and raising funds for malaria-prevention medicine for infants. My heart is still there.

I'm now receiving phone calls from the area telling of extreme hunger. As you probably know, the rains in Casamance were scanty last year and this year and the harvests were meager. People may be actually in very severe malnutrition.

Do you know of any NGOs or agencies I could contact to provide

We want to hear from you! Please send your comments to worldark@list.heifer.org. Include your name, city and a telephone number or e-mail 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.



immediate help to these towns in the Region of Sedhiou?

JEAN THOMTE
Minneapolis, Minn.

Editor's note: The Senegalese organization Oceanium works specifically in Casamance. The International Rescue Committee, Oxfam, the World Food Program and World Vision all work in Senegal. Heifer Senegal works in the areas of Thies eastward to Tambacounda and is studying ways to further assist areas throughout the Sahel.

HUNGRY FOR MORE VEGETABLES

I am a financial and moral supporter of Heifer International. In reading recent installments of *World Ark*, I notice just one aspect of the magazine with which I take issue. I've been reading recipes for dishes with meat. In both developed and developing nations, meat consumption is directly linked to a host of far-reaching societal and environmental ills: obesity, land and water pollution. Meat production consumes huge amounts of water, grain, petroleum and fossil fuels, pesticides and drugs. It seems that any advocacy for meat consumption flies in

the face of what Heifer stands for: environmental care, management of solid waste, local production and sustainability. It may not be in Heifer's interest to directly support vegetarianism or veganism, but to tout recipes with meat seems at best counterproductive, and at worst, foolish and immoral.

STELLA PADNOS-SHEA
Brooklyn, N.Y.

Q&A MAY

What, or who, has challenged your idea about what charity really means?

Recently I heard a speaker explain the theory of *tikkun olam*, a Hebrew phrase that means "repairing the world." I like that idea as a motivator and challenge to do good all around us such that the Creator would be happy with our work to restore and heal the world.

WENDE NICHOLS-JULIEN
Manhattan Beach, Calif.

I'm currently enrolled in a graduate degree program in nonprofit management (at Bay Path College in Massachusetts). The work is seen less as a charity but more of a cause or a public trust that deserves proper stewardship, accountability and an investment in community.

RUBY MADDOX
Springfield, Mass.

Q&A AUGUST

What steps are you taking to become more informed about where your food comes from?

E-mail your answers to worldark@list.heifer.org. Please limit your answer to 250 words or fewer. We reserve the right to edit responses for length, clarity and grammar.

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Since 1944, Heifer has helped 15.5 million families 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 InterAction, the largest alliance of U.S.-based international development and humanitarian non-governmental organizations, and of Global Impact. Federal and state employees may designate gifts to Heifer through payroll deduction by entering CFC #12079.

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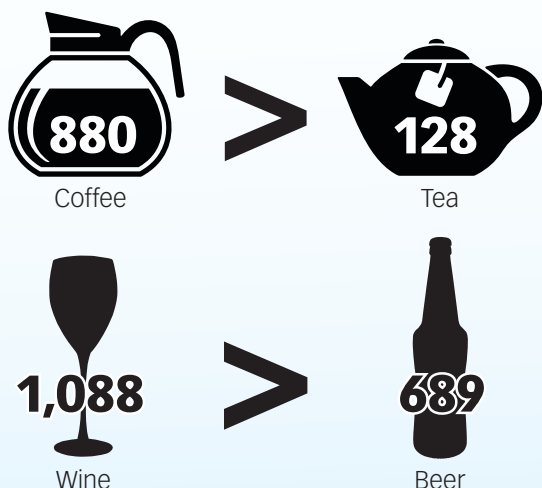
ALL SOAKED UP

how much does it take?

Fixing leaky faucets and taking shorter showers will certainly help a bit, but you might be surprised to discover the other ways we're draining our water supply. Manufacturing food, electricity and clothing all soak up far more water than you might expect.

Brewing a gallon of coffee requires significantly more water than a gallon of tea, and wine is more water-intensive than beer.

WATER REQUIREMENTS PER GALLON:



HOW WET ARE THOSE DRY GOODS?

"Dry goods" is a misnomer considering that it takes **713 gallons** to produce a single T-shirt.

Your shoes are already wet. Half a pound of leather requires **1,096 gallons** to produce.

Don't forget to recycle this magazine after sharing it with friends. The paper for each issue took about **76 gallons** to produce.

WHAT'S FOR DINNER?

A pound of beef requires **1,799 gallons** of water to produce, meaning a burger weighs in at **660 gallons**.

A pound of chicken requires **468 gallons** of water to produce, and eggs require about **53 gallons** each.

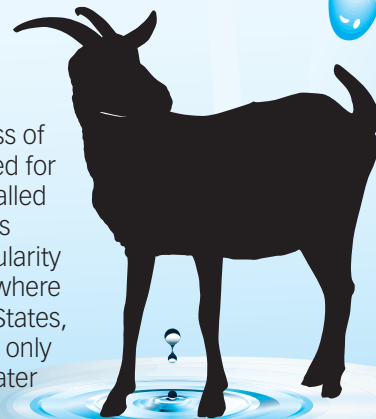
A pound of cheese soaks up **600 gallons** of water; a pound of soybeans requires **216 gallons**.

Splurging on chocolate for dessert costs a hefty **3,170 gallons** of water per pound. Save your teeth and some water by choosing apples and oranges, which take less than **20 gallons** each.

Livestock serve as a key means of income and savings in Heifer projects around the world. Appropriate water sources for people, livestock and crops must be present before animals are placed, and projects are designed to conserve water and protect water quality.

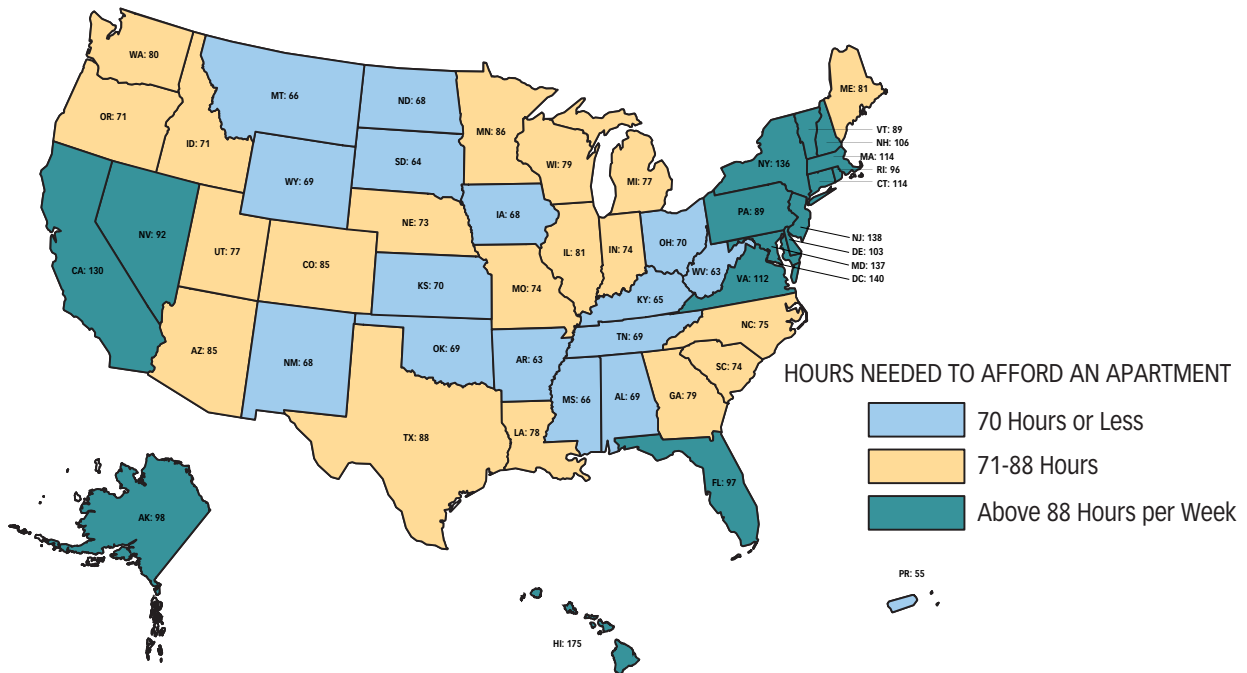
MORE MEAT FOR YOUR WATER?

You could make less of a splash if you opted for goat. Sometimes called the soccer of meats because of its popularity pretty much everywhere except the United States, goat meat requires only **127 gallons** of water per pound.



HOURS AT MINIMUM WAGE NEEDED TO AFFORD RENT

In no state can a minimum wage worker afford a two-bedroom unit at fair market rent, working a standard 40-hour week.



How hard is it to keep a roof over your head on minimum wage? This infographic from the National Low Income Housing Coalition shows how many hours it takes working a minimum wage job to afford a market-rate two-bedroom apartment. Spending the standard 30 percent of income on housing, workers in most U.S. states have to clock in for more than 70 hours per week. Minimum wage earners in New York state have it especially rough. They would have to work 136 hours a week to pay the rent.

SOURCE: NATIONAL LOW INCOME HOUSING COALITION

India's Johnny Appleseed

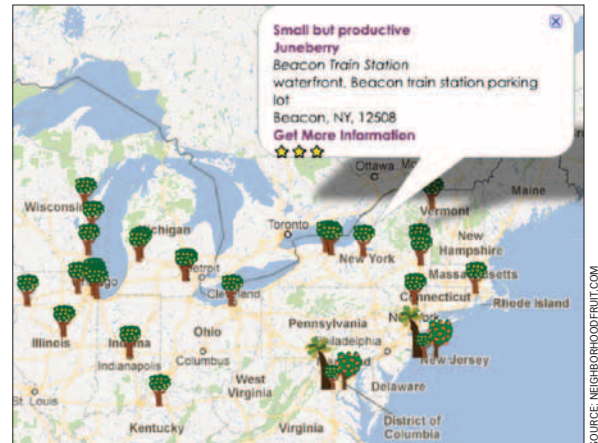
Plenty of teenagers dream big, but Jaday "Molai" Payeng's grand plans really took root. Three decades ago he started planting seeds along a barren sandbar in the Assam region of northern India. His goal was to create a wildlife sanctuary. "There was nobody to help me. Nobody was interested," Payeng, now 47, told *The Times of India*. Today, a 1,360-acre jungle grows from the seeds Payeng planted, and rhinos, tigers, birds, elephants and deer have all moved in.

Jargon

Bushmeat: meat from wild animals, including primates and rodents. Considered by some to be a derogatory term, bushmeat is linked to extinction and the spread of disease.

Forgotten Fruits

Feeling up for a treasure hunt? It's harvest season, and if you don't claim the bounty from that fig tree leaning into the public right-of-way, the possums will. Off-the-grid harvests are happening in parks, in the gardens of foreclosed properties and in alleys, sidewalks and other spots considered public and therefore fair game. In fact, the freegan foodie fringe has been at it for years now. Plenty of websites offer tips on urban gleaning, and trailblazing foragers in many cities have even posted maps online to guide your quest. Some are taking it further, hosting dinners and jam-making parties with the foraged food or donating it to charity. To find treasure maps to guide your search, visit neighborhoodfruit.com or use the Find Fruit app on your iPhone.



Posh Poultry



Some people like braised chicken, others hold out for *coq au vin*. That's why Williams-Sonoma is launching its Agrarian line of products that includes upscale supplies for raising chickens, keeping bees, making cheese and growing and canning your own vegetables. The line offers everything from balls of twine all the way up to a swank mobile chicken coop with both indoor and outdoor living spaces for the pampered backyard chicken.

Pin Your Hopes on Heifer



The next time you're poking around Pinterest for decorating ideas or recipes for homemade laundry detergent, take a peek at Heifer International's boards. Photos, videos and graphics combine to tell the story and mission of Heifer in beautiful and easy-to-digest tidbits. There's also information about current happenings in development work and tips on maintaining a sustainable, Earth-friendly lifestyle. See for yourself at pinterest.com/heiferint.

Curbside Composting

According to the EPA, as much as 65 percent of our grass trimmings, raked leaves and other yard waste is being composted. That's great, but there are still 60 million tons of food scraps, paper and other compostable materials sent to landfills each year. Bay Area trailblazers cut their landfill contributions by about 25 percent with three-stream (compostables, recyclables and trash) curbside pickup. Other cities and counties are composting, too, and the EPA reports the amount of waste diverted from landfills through composting quadrupled since 1990. If curbside composting isn't available where you live, you can still recycle food scraps the old-fashioned way by feeding them to pet chickens or composting them in a backyard bin.

Harvest: Cucumbers

Cucumbers are among the most widely cultivated vegetables, trailing only tomatoes, cabbage and onions. In the same botanical family as melons and squashes, cucumbers have such a high water content that their interiors can register up to 20 degrees cooler than the outside air. That high water content also keeps the calorie count low: Half a cup of sliced cucumber has only 10 calories.



Dean's Unbearably Tangy Refrigerator Pickles

Ingredients:

- 3 cups cucumbers, peeled and sliced a quarter-inch thick
- white vinegar
- one medium white onion, cut into rings
- water
- salt

Fill a quart-sized mason jar nearly full of the sliced cucumbers. Top with onions. Fill the jar halfway with vinegar, then top off with water. Add salt to taste. Seal and shake, then chill in the refrigerator before serving.

CORNERSTONES IN ACTION

For decades, families and communities around the globe have used the principles of Heifer's Cornerstones to build successful projects and become self-reliant. What exactly are these principles, and how can they help strengthen and enrich our own lives? *World Ark* is featuring a different Cornerstone in each issue, along with suggestions on how to put them into practice.

The 12 Cornerstones form the acronym PASSING GIFTS. This month: **Gender and Family Focus**



HOW IT WORKS: In Heifer's work, gender equity is central to success. Men and women must work side by side in equally respected roles and responsibilities for a family to lift itself out of poverty, which is why Heifer confronts issues of patriarchy and inequality head on. Also, women are more likely to share the fruits of their education and success with their families.

IN ACTION: Encourage girls to study math and science, and support female entrepreneurs. Raise your sons to treat women as equals, and make sure you advocate education for both genders equally. Parents, teach your boys how to cook and teach your girls how to wield a hammer.

Gender and Family Focus

On the Road with Heifer



Betty Londergan, a longtime advertising creative director and book author, is several months into an adventure as Heifer International's global blogging ambassador. For *Heifer 12 X 12*, Londergan is traveling to 12 programs in 12 countries this year to feature Heifer's participant families, country staff and cutting-edge work. Her work with Heifer follows her successful *What Gives 365* blog, where she chronicled what happened when she donated \$100 each day for a year.

Interview by Donna Stokes, *World Ark* managing editor

WorldArk: Please tell us more about *What Gives 365* and how it led you to start the *Heifer 12 X 12* blog.

BETTY LONDERGAN: *What Gives 365* was a huge, inspiring, emotional introduction to the incredible number of people around the world doing good work and inventing creative solutions to solve chronic global problems. It got me all fired up and invested in exploring more. But because I was blogging every day—doing all the research, interviews, writing, photo editing, etc.—that also meant that I spent most of the year at my desk. When the year was over, I was dying to get out and actually see some of the projects and people I was writing about in action. So I thought, hey, I'm pretty good at blogging. Why not just try to put that skill in action for an organization I really respect? And that led me to Heifer!

What's the most challenging part of this year-long project?

As with most things in life, the most

challenging parts are also the most fulfilling. For me that is being on the road, working really long days meeting the beneficiaries of Heifer's work, taking photos and digging down to the real-life stories. Spending five hours every day in a truck, bouncing around on awful roads to get to the remote places where Heifer works is exhausting, but it gets me to places and people that most travelers never, ever get to experience, so I have come to love those crazy, bumpy rides.

Really the hardest thing is to let go of the country I'm writing about and still crazy in love with and go on to the next. But luckily, I listened to the song "Love the One You're With" at an impressionable age and oddly, that is exactly what happens.

What is your end goal for donating an entire year of your time and talent to do Heifer 12 X 12?

I hope a lot of the people who read my blog and are touched by my stories will become committed donors to Heifer. I'm fairly obsessed with the idea of

"paying back" my travel expenses by raising those additional funds. However, on a deeper level, I feel like my task is to explain—in a fun, accessible and entertaining way—the complexity, breadth and depth of what Heifer is all about. I want to help people truly understand what it means to donate an animal, how great they should feel for making that donation, and how powerful this idea of long-term sustainable change can be to communities that suffer and struggle with poverty and hunger. And of course, I want millions of people to read my blog and love it!

As a donor yourself, what is encouraging to you about the direct results you're seeing from Heifer's training in the field?

What I love about the Heifer model is that it's not just about giving somebody an animal, it's about giving that person the tools, the training and the confidence to be successful. In every country I've been to, I've been astounded at how deeply, personally committed the Heifer field techs and

program directors are to the people they work with and to the 12 Cornerstones. These Heifer folks work insanely long hours, travel all the time and know the personal situations and circumstances of the people. The staff's high standards and expectations of the beneficiaries are really powerful motivation. And ... it works. With Heifer's help, communities gain the methods and the means to become self-sufficient, to make bigger plans, and to accrue the resources to accomplish some of their goals. I've seen it, and it's really beautiful to behold.

What has surprised you the most about the work being done on small farms around the world?

I was way up the road on a small farm in Uganda, and I suddenly just got it. The only thing these people had to eat was what they grew and the animals

they raised; they had no other food security than that. That's such a position of vulnerability, it's almost hard to conceive of it.

I've also been blown away by the incredible industry and creativity of small farmers: The clever way they save and use every resource we take for granted, the remarkable diversity of crops they grow on the smallest plots of land and their ferocious desire to give their children an education and a better life, even if they have to sacrifice everything to do that. In circumstances that most of us would find overwhelming, these small farmers are indefatigable and have hope, optimism and faith. I find that profoundly moving.

You take beautiful photos of landscapes, people and animals to help readers travel along with you. What's your favorite subject to photograph?

Always people, especially children. Every country I go to, I fall madly in love with the people and think they are just the most beautiful in the world. And I try to capture that in my photos, to show the dignity, integrity and spirit that I see in those faces.

How can Heifer supporters and donors get involved with your project and learn more about Heifer's work in the field?

Of course I think everybody should read my blog at heifer12X12.com and recommend it to friends and family. I pack a lot into the posts about the history and geography and culture of the countries I'm visiting as well as information about Heifer programs. I answer almost all of the comments on my blog, so comment or ask any questions there; I'd love to hear from you! Also, please visit Team Heifer 12x12, and donate to help even more families out of hunger and poverty. ■



Blogger Betty Londergan (above) zooms in on donkeys in Haiti. She takes readers along on every trip with her stunning photography of Heifer farm families, landscapes and livestock. Photo by Dave Anderson.




Londergan's favorite subjects to photograph are the people, "especially children." These kids in Guatemala enjoy the process, too. Photo by Vivian Martinez.

AlpacaCountry

By **Brooke Edwards**, Heifer International writer
Photos by **Dave Anderson**



A photograph of a vicuña in its natural habitat. The vicuña is a small, slender camelid with light-colored, fleecy fur, standing on a rocky, brownish ground. It is looking directly at the camera. In the background, there are steep, barren mountains under a sky with scattered white clouds. The overall scene is high-altitude and arid.

In the Andean highlands of Peru, 13,000 feet above sea level...

AlpacaCountry

...very little can grow. The air is thin, the water scarce, the earth rocky and infertile. Against a backdrop of glacier-capped mountains, however, indigenous families survived since ancient Incan times by raising hearty alpacas. Climate change, severe deterioration of water sources and pasture, low incomes, low market value of alpaca varieties and little diversity of food in more recent times have made life here even more tenuous. Heifer International's Alpaca Biodiversity in High Andean Communities Project works in 22 indigenous, small-farming communities to reduce vulnerability to climate change and food insecurity of 4,333 alpaca-raising families.





Alpacas are gentle not only to their human caretakers but also on the land. They eat scrub vegetation other livestock won't eat, and their padded feet don't damage the fragile terrain. Their droppings help fertilize the topsoil, improving crops and reducing erosion. The exceptionally soft wool is collected without injuring the animal, providing Heifer families with fine material to make blankets, ponchos, hats and carpets.

AlpacaCountry

Three key factors prevent alpaca-raising families from earning higher incomes from the sale of their products: low genetic quality of the alpaca herds, low quality of the alpaca fiber and textiles due to poor quality control during shearing and processing and the use of intermediaries to sell their products.





As the alpaca wool industry flourished in Peru over the last century, alpaca farmers turned their focus away from the natural variability of alpaca colors to produce only white stock. White fiber is easier to dye, making it more valued on the commercial market. However, this practice resulted in a gradual loss of biodiversity and richness of the species and, therefore, a level of vulnerability to external commercial interests these indigenous families cannot afford. A more recent shift in smaller, local markets' preference for natural colors of wool has led to a resurgence in breeding alpacas in a variety of hues, which are in turn genetically more resilient and resistant to climate change.

Artisan goods made with natural colors of wool sell for high prices to tourists. For a farmer to get a good price for the wool, however, the color must be uniform. Although adorable, this alpaca (at left) is of lower quality than desired, according to alpaca farmer Lucio Mandura Crispin. The reason? She has three distinct shades of fiber.

AlpacaCountry



Crispin learned techniques to improve the genetics of his livestock through training from Heifer International's Peru country program. Now, instead of depending on the sale of his alpacas' wool, his income comes largely from selling high-quality breeding stock, which can bring in as much as \$5,000 each.

Crispin, posing with one of his award-winning, solid-brown alpacas in his community of Fundo Tumpata, Pacchanta, says he loves his alpacas almost as much as he loves his wife.





So far, Crispin has won 150 awards for his alpacas' fiber color, quality and conformity. In addition to recognition, Crispin also received tools, irrigation supplies and veterinary products to improve his farm.

The successes of farmers like Crispin who raise quality breeding stock trickle down to the rest of the community. High-quality breeders yield offspring with high-quality wool, which can be sold raw at higher prices than before or woven into beautiful products for sale.

**THE NEW
LIVESTOCK:**

Rodents of Unusual Size



Grasscutters are prized throughout West Africa for their sweet meat. Farmers raising the rodents in Heifer projects are making as much as twice the income of the average Ghanaian.



PHOTO BY JAMES GROOVES

As Heifer Ghana got its start in 1999, staff swiftly tackled the challenge of affordably domesticating grasscutters, a wild rodent prized in West Africa for its sweet and lean meat. Since then, Heifer developed an accessible and hugely successful method to raise the rodents to improve nutrition and income among its project participants. Today, demand in West Africa and beyond drives exponential growth in the production and sale of the animals.

BY ANNIE BERGMAN, *WORLD ARK* SENIOR WRITER
PHOTOS BY JANE HAHN

ANANG CHARLES, Ghana—She was clearly nervous. Strange people were milling about in front of her house asking questions about her. When she saw the camera, she froze. Her mouth full, food in hand, she didn't know what to do.

So she kept eating.

"She" was an overly large cross between a beaver and a rat, or a Rodent of Unusual Size, to use a popular culture reference. "She" is a grasscutter. And she has no idea that she's helping make the farmers who raise others like her very successful indeed.

It takes just 30 minutes to get to Jonathan Mensah's place by car from the Heifer offices in Accra, Ghana's sprawling capital city that's home to more than 2 million people. But Mensah's village is where you'll find more than 100 of Heifer Ghana's grasscutter farmers.

Farm is really a misnomer for where Mensah lives. He owns just more than two acres—down from the five he had before the capital seized part of his land to accommodate the burgeoning population.

Mensah, 53, joined a Heifer grasscutter project in 2006 not long after he lost most of his farmland. He was struggling to provide for his family of six by selling vegetables from his meager acreage with little access to water for irrigation.

"My father died when I was 13 years old, so I only completed my elementary education. I had to look after myself," Mensah said.

By the time he was 19, Mensah had found a job with the district Animal Health and Production Department. It was there that he learned how to feed and care for animals and also how to administer drugs. In 1989, he lost his job. His department was deemed overstaffed, and he was one of the unlucky few to be cut.

He received a small severance but almost immediately fell ill.

"I wanted to use the money to invest in my farm, but I couldn't because I was sick. I used the money for treatment. And even that money didn't treat me. So I sold some of my belongings. I lost everything. I became poorer and poorer. I had to start my life again," he said.

About a year after starting over, Mensah attended a farmers association meeting in



“We heard about this NGO called Heifer who was helping. They were offering cattle, goats and these grasscutters, so we applied. At the end of the year, they approved us. It was a group of about 36 original farmers,” he said. “It changed my life. It was a blessed event.”

—JONATHAN MENSAH

Jonathan Mensah (above) has raised grasscutters for four years. The income he's earned has enabled him to start a savings account and build a home for his adult children. Rebecca Ashorkor (right) received five grasscutters in a Pass on the Gift Ceremony.





his district. He and other farmers were commiserating about the difficulty of farming in Anang Charles village with the intermittent rain and other challenging weather conditions.

Another farmer brought up an organization that was helping farmers just like them.

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Man domesticated some of the most common livestock on farms today thousands of years ago. We’ve herded sheep for more than 10,000 years and raised cattle for nearly as long.

In contrast, the domestication of the grasscutter began in Ghana in the 1970s. It should come as no surprise that farmers are still learning exactly what it takes to raise the animal with as much financial success as chickens or cows.

Grasscutters, sometimes referred to with the less than appealing name cane rat, are native in much of central and West Africa and have long been a favorite food for many in the region.

Because of the grasscutter meat’s popularity, a study was launched in the 1970s to gauge if the wild animals could be raised in captivity. The results indicated raising grasscutters on farms could be successful, but the idea fizzled. The startup costs for the small-scale and subsistence farmers involved were just too high, said Roland Kanlisi, interim country director for Heifer Ghana.

In 1999, a few years after the studies were abandoned and just as Heifer Ghana was opening its offices to support project work, Kanlisi was researching environmentally harmful methods with which Ghanaians were harvesting wild game.

What he found was that the Ghanaian taste for the rodent hadn’t changed since the initial studies of the 1970s.

“The grasscutter came out as one of the most hunted animals from the wild,” he said. “It’s an animal that attracts premium prices on the market. Everyone wants grasscutter meat.”

But Kanlisi’s research found the high demand for grasscutter meat had adverse effects on the animal’s habitats and the surrounding environment. Hunters used ei-



PHOTO BY JAMES GROOVES

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—ROLAND KANLISI

A grasscutter eyes the camera (above). Heifer Ghana has played a main role in the domestication of this native West African species.

Grasscutter houses on Jonathan Mensah's farm are pictured at right. Mensah keeps more than 50 grasscutters at a time.

ther poisonous traps for the animals or set bush fires to, quite literally, smoke out the creatures.

The poisonous meat would sicken those who ate the animals, and bush fires often got out of control, burning nearby farmland, he said. So Kanlisi decided the best answer would be to resume raising and breeding grasscutters on farms.

Around the same time, Kanlisi said, a happy coincidence occurred. Farmers in the Republic of Benin were having success in the captive rearing of the rodents with the help of a German development organization. The next step was to see exactly how they were doing it.

"We decided to go to Benin to learn from them. We also reviewed a lot of literature and realized it could be done in a sustainable and environmentally friendly manner, and it could be done in a manner that would not injure the health of human beings, and that it was also financially and technically viable," he said.

That trip was enough to convince Kanlisi to propose grasscutter production projects to Heifer headquarters.

"We developed a concept and submitted to Heifer to propose grasscutter production as one of the main interventions in the Ghana program. The reaction was, in the

first case, 'What is a grasscutter? Is it a rat?' " Kanlisi said.

The concept was approved, which set Kanlisi to the next task: finding a foundation stock of grasscutters to provide the ready and willing farmers.

Kanlisi said Heifer had to decide between asking local hunters to cull the animals from the wild and buying the rodents from the farmers in Benin who were already in the business of raising grasscutters.

With a shipment of 300 grasscutters from the Republic of Benin, Heifer Ghana's grasscutter program started in 2001. The original project was the genesis for four other grasscutter projects, including Mensah's.

"I know grasscutters, but formerly, I didn't think they could be kept," Mensah said.

Ten years after the implementation of grasscutters into Heifer Ghana's programmatic work, and five years after Mensah began training on raising the rodents in captivity, he is now one of Heifer's most successful grasscutter farmers making, at minimum, \$1,400 a year from his grasscutter operation alone, which is about double the average annual income of other Ghanaians.

Grasscutters were a natural fit not only because the meat is highly desired, Kanlisi said. The animals require few external inputs, like feed. As its name implies, it feeds on grasses, which farmers like Mensah can grow or harvest from the wild for free.





Mensah reaches in one of the animal cages to feed and water his grasscutters under the mid-day sun.

And because they are a native species, the rodents are also strong and resistant to diseases. Kanlisi said there are only two difficulties to the grasscutter projects. One is the difficulty in determining the sex of the animals, and the other is their relatively long gestation period of 159 days, similar to that of a goat.

Mensah said those difficulties were fully disclosed to the farmers when they were choosing what animals they'd like to receive from Heifer.

"We chose grasscutters because I like grasscutter more than goats. At times goats give more trouble. If they get out they can destroy other people's things. Grasscutters have bigger litters, and you get more than one [offspring] like with the goats. We compared all these things and then settled on grasscutters," he said. "They also bring good prices."

After a year of training, Mensah and the 35 other farmers in his group received five grasscutters each: three females and two males. The farmers also received the wooden and wire mesh housing in which to keep the animals.

He now keeps upwards of 50 grasscutters, depending on how many he's able to sell and if his animals are breeding. His stock dips at Christmastime, too, when grasscutters are the favorite for the holiday meal.

But the year-round sale of the grasscutters, whether for meat or to others interested in raising them, has allowed Mensah to open a savings account and to build a second home on his property, which he gave to two of his children. He's also adopted his brother's two orphaned children and is providing them with private schooling.

Business is still good. Mensah said there is a steady stream of people who come to see



"Whatever I've been given, I will pass on. Through this grasscutter project that Heifer brought, it has changed many people."

—JONATHAN MNSAH

him about grasscutters.

"In a month I can sell about five, but it depends on if the animals have bred. Some people come by and order about 20 for rearing. So the orders vary. Sometimes they come and ask for one or two, but then sometimes people are afraid, so I process them and smoke the meat for them," he said.

The prices he receives vary depending on the size and age of the grasscutters. A 3-month-old animal fetches about 35 Ghanaian cedis, or \$19.50. The older the animal, the higher the price: \$28 for an animal up to age 2, and \$33.50 for a pregnant female.

The pregnant females are highly desired, too, since many farmers who haven't received training still have difficulty breeding the animals, Mensah said. But if interested, Mensah will provide training on raising and breeding the animals at no cost. It's just one of the ways he passes on the gift.

In fact, Mensah and the original 35 members of the project keep giving to others.

"Whatever I've been given, I will pass on. Through this grasscutter project that Heifer brought, it has changed many people. The farmers I have trained, they also want to start a farm in the Eastern region. So we constructed the cages for them, brought the grasscutters for them. I trained them. So, we've supplied another region," Mensah said.

Aside from selling the animals, Mensah also builds the grasscutter hutches for others for a small fee plus the cost of building materials. But he can't handle the demand on his own. So the group found a local artisan and now contracts with him to build the cages.

These small-scale entrepreneurs are creating jobs for others, and Mensah has bigger plans, yet.

"I will start a training center here (at his home). I will train people," he said. "A lot of young men who go to Accra cannot get

jobs because they don't have skills. So we will train them in grasscutters."

So much of the grasscutter program in Ghana seems improbable. A giant rat-like creature being a popular food source seems strange enough, but raising the animals on farms was an idea that was nearly discarded. Yet it has gained success. Further, grasscutters are feeding a growing population. It takes almost no land to become a successful grasscutter farmer, and the projects are sustaining the farmers who provide them.

Kanlisi notes that improbability.

"We've come a very long way," he said. "The first grasscutter project that we had has come to an end, but the farmers are still rearing grasscutters and some of them are real big-time grasscutter farmers. Many times we've used those farmers to mentor new project participants that are undertaking raising grasscutters as a business."

It is already a lucrative business, but Kanlisi sees Heifer grasscutter farmers building into national, regional and, maybe, even international suppliers. The market is definitely ripe for something like that in Central and West Africa, he says.

Kanlisi has anecdotal evidence from his own travels and from West African friends in other countries that there are vibrant markets for grasscutters in the diaspora, especially in Britain and the United States.

Though he knows the strict laws on importing foreign meats could be a potential roadblock, Kanlisi said Heifer Ghana will cross that bridge when needed. Still, he's excited by what he sees happening in Ghana right now.

"The long-term goal is to export, but we know to export is quite tricky. Regardless, it's a project that's got a very bright future," he said. ■

Grasscutter:



PHOTOS BY ANNIE BERGMAN



PHOTO BY ROLAND KANLISI



PHOTO BY ROBBY S.

Clockwise from top left: red red, a bean stew, is dished up for lunch; fresh coconuts are opened for visitors in Brahoho Village; Heifer staff dine on grasscutter soup; and a closer look at the grasscutter soup, a popular meal all over Ghana.

The Other, Other White Meat

We had been on the road for nearly six hours. I was fighting a pretty bad case of jet lag, trying hard not to nod off so I could take in the Ghanaian countryside. We stopped for fresh coconuts about two hours in, but I was getting hungry, and I knew exactly what I wanted for lunch.

The day before this journey to visit poultry projects in Techiman, about an eight-hour drive from Accra, Dr. Ebenezer Ghamli, a Heifer programs officer and veterinarian, took us to visit grasscutter farmers.

As it turned out, Ghamli wasn't just a helpful guide but also a great salesman. He touted the grasscutter meat's sweetness, and mentioned its health benefits, too. It's a white meat and is higher in protein and lower in fat and cholesterol than beef. Though I don't typically think of myself as an adventurous eater, he convinced me to try it for myself. Trying new cuisines is actually one of the most fun parts of traveling for Heifer. I've tasted some pretty weird stuff—goat brains to name just one dish—but it has usually been at the insistence of my hosts.

This time no one was pushing me to try grasscutter.

So when we pulled into the restaurant in Kumasi, I asked Roland Kanlisi, the interim country director for Heifer Ghana and my guide for this part of the trip, if

getting grasscutter might be possible. It was. I let him order for me. I figured he knew what was best.

While I was waiting for my meal, I tasted a few other Ghanaian favorites. Jane Hahn, the photographer working with me, let me sample some of her *red red*, a bean stew made with red pepper and red palm oil, and *kele wele* (pronounced "killy willy"), which are fried plantains on the not-too-sweet side.

Both were delicious. I was certain that if the other food was this good, my meal wouldn't disappoint.

My dish appeared: a tomato soup with two large pieces of bone-in meat at its center and a side of white rice. I dug in.

As I took my first bite, Kanlisi waited for my reaction.

"Any meat to compare it to?" he asked. I thought for a second. Took a second bite. "Not really," I answered. It truly has a flavor of its own. Gritty. Earthy. No "it tastes like chicken" from me. Also, if someone says it tastes like chicken? They're lying.

It wasn't bad, though. Closest in flavor, at least to me, of goat, which isn't exactly my favorite. So, if I ever make it back to West Africa, I doubt I'll ask for grasscutter soup again. But I had to try.

— Annie Bergman

Sorry to Eat



and Run, But ...

WHAT DRIVES OUR FOOD CULTURE? FOR MANY AMERICANS, IT'S CONVENIENCE AND SPEED OF DELIVERY. BUT HOW IS THAT DIFFERENT FROM THE REST OF THE WORLD?

By **J. Malcolm Garcia**, *World Ark* contributor

Illustrations by **Robert Roth**

THE BUTCHER SHOP was named Al's Meat Market, but my family just called it Al's after its Italian owner. My mother and I would drive to Al's just north of Chicago at least once a week. As I examined long rolls of bologna, liverwurst and salami beneath a glass counter, Al would offer me a slice of whatever I wanted, handing it to me on a square sheet of wax paper.

Customers would ask Al what was good that week. He explained the differences between prime and choice beef, choice beef from select beef, pork steak from bottom round steak, rump roast from cube steak. Brown butcher-paper drawings of cattle hung from the walls with lines sectioning off the different cuts.

When I was a boy, supermarkets were making inroads on neighborhood stores like Al's. They were cheaper, yes, but as far as Al was concerned, the salespeople didn't know their product. It was all pre-cut. Al apprenticed for years before he became a butcher. Sirloin steak, short ribs, bottom round—sometimes called goose round. He learned to cut it all and bought it from trustworthy sources.

He did not live to see the continued rise of discount stores that further stretched the distance between consumers and the food they eat. Nowadays, I press my thumbs into a price-reduced, plastic-wrapped package of hamburger to see if it looks fresh. I know which store has the best sales, but I don't really know much about the food I eat.

I'm not alone in this. Our distance from food and the land it comes from stands in contrast to other parts of the world where food belongs to a culture of self-production and social gathering, part of an intimate process for maintaining bonds with family and the earth.

"Agriculture comes from the term culture," Asma Lateef, director of Bread for the World Institute told me, "and we've lost the sense that food is part of a broader culture. Food is part of a convenience lifestyle. Everything has to be convenient and fast. The culture of eating together and telling stories has disappeared here."

Equally important, our ignorance about food limits our ability to participate knowl-

edgeably in agricultural policy or choose the most nutritious items for the grocery cart.

“Consumers don’t know where food comes from,” said D. Scott Brown, assistant professor of Agricultural and Applied Economics at the University of Missouri-Columbia. “Not being able to debate food policy with educated consumers makes it difficult to have an open exchange about it. Should we have more or less meat in our diet? What is inhumane animal treatment? If we don’t know or understand, how can we have a debate about it?”

Nearly 80 cents of each dollar Americans spend for food goes to pay for marketing services—processing, packaging, transportation, storage and advertising, said Sara Baer-Sinnott, president of Oldways, a Boston-based nonprofit that educates Americans on food and nutrition. All of these costs are associated with getting food into the most convenient form and packaging, sending it to the most convenient location at the most convenient time, and then convincing us to buy it. As consumers, we pay far more for the convenience of our food than for the food itself, she said.

“Since the 1950s we’ve moved away from the traditional diet of whole grains, fruit and vegetables,” Baer-Sinnott said. “Status, the perception that it’s easier, women moving into the workplace, that all played a part.”



I don’t know if the drawings of rural Italian landscapes on Al’s walls influenced me, but when I was a boy I wanted to be a farmer. By the time I was a teenager, I had long since abandoned that goal, but farms continue to attract me. When my brother told me that the husband of a colleague was a farmer, I asked to meet him.

Bob Brackman farms about an hour outside Chicago in Bartlett, Ill. I parked behind a red pickup near a shed and watched Brackman

drive a combine toward me across his 60-acre cornfield. Husks bounced in a front tray of the combine before being sucked inside it. Seconds later, corn spewed into a trailer behind the combine, rising and falling in a dissembling mountain of knotty yellow kernels.

Every other year, Brackman grows soybeans. The crop rotation keeps the rich, dark soil fertile. He showed me how his field rose and fell in small waves. No reason. Just part of the natural undulation of the land. In some areas the soil gave way to clay and gravel, and the corn there was smaller than the rest of the crop.

Brackman’s father put him on a tractor when he was 13, and 43 years later he was still glad to be sitting atop one kind of farm contraption or another. His father taught him to be patient, to work hard when crops are ready for harvest and to be persistent when droughts suck the land dry and rains turn the fields into swamps.

But in many cases, Brackman said, science has trumped the vagaries of Mother Nature by transforming farming into the art of the possible. Most people don’t know it, he continued, but the corn they eat is most likely a hybrid developed in laboratories to resist insects, drought, wind, flooding and other environmental pressures. Farmers used to spray against rootworm. These days, however, farmers can plant rootworm-resistant corn, cutting costs and other problems associated with pesticides. These traits are naturally present in other vegetable species. Scientists simply crossbred these qualities into the seeds.

The technology does not stop with the development of hybrids. Brackman said new combines will appear to have more computer parts than the space shuttle and may cost as much as \$700,000. Push a button and the blades will adjust to different settings accommodating different crops. Global positioning systems will map out farm fields, and the farmer won’t even have to steer.



“Cheap supply and new technology increases our distance from the food supply,” Brackman said. “It’s a never-ending issue.”



My thoughts of becoming a farmer somehow morphed into a desire to be a reporter. And it was in that capacity that I flew across the globe and about as far from Brackman’s farm as can be imagined, to the African nation of Chad.

There, the notion of cheap supply took on a whole new meaning. I hired a driver to take me

from the capital to the town of Abeche. A flock of gray African quail crossed the cattle trail that served as a road. The driver accelerated. The quail scurried and squawked, and I heard one of them thump beneath our Land Rover. The driver removed a knife from the dashboard and ran back a few yards watching the side of the trail. He paused at a clump of weeds, knife raised, and made a slashing motion. He looked up smiling, carrying the dead pheasant by its feet. Lunch.

I was also introduced to the *zeer* pot, an ingenious device that helps keep food fresh without



electricity, a handy tool in areas where power outages are frequent and the poor lack basic amenities like refrigeration. Also known as the pot-in-pot refrigerator, the *zeer* works like this: A large porous pot holds a smaller container insulated by wet sand. As water evaporates from the sand, it draws heat from the inner pot where food is stored. Periodic additions of water keep the sand wet and the process of evaporation continuous so that the food remains cool and fresh.

Refrigeration remains a problem in many parts of Africa. Aisha White, employment program coordinator for the Nashville International Center for Empowerment, explained to me that in her native Nigeria, families buy food daily to get around the problem. Meat is either boiled or fried to preserve it.

A typical diet in White's family consisted of beef, rice and casaba, a kind of melon. They ate corn and tomatoes often, purchased not from supermarkets but in community bazaars similar to our farmer's markets. A typical dinner required at least two hours of preparation.

"Everything is so quick here in America," said White, who moved to the United States in 2000 to attend college. "Here you have to intentionally plan to eat as a family. In Nigeria, a meal may take an hour. We sat, lingered, ate and drank tea afterward."



Subsistence agriculture, where small farmers grow their own food to feed their families, remains common in developing

countries. The typical subsistence farm includes a variety of crops and animals the family needs to feed and clothe themselves during the year. Planting decisions are made with an eye toward family needs for the coming year rather than market prices.

Roughly 65 percent of sub-Saharan Africa's population relies on subsistence farming. For instance, 86 percent of Ugandans earn a living through subsistence farming; 85 percent of Angolans also rely on subsistence farming. Most of the economies of Lesotho, Malawi, Zambia and Rwanda are also based on subsistence farming.

In contrast, the United States employs commercial farming on a massive scale. In the 1930s, crop yields in the United States were comparable to those of India, England and Argentina. Since the 1950s, the use of pesticides and fertilizers as well as a host of governmental policies have vaulted the U.S. into the biggest farming economy in the world. Today, fewer American farmers feed more people than ever before in the history of food production. In contrast to Africa, and as Illinois farmer Bob Brackman reminded me, virtually none of these farmers feeds his or her own family with homegrown crops.

"It's hard for Americans to understand, because U.S. farmers are very different from African farmers," said Pedro Sanchez, of the Earth Institute at Columbia University. "African farmers can't buy on credit because there's no credit system. In the U.S., farmers are heavily subsidized. The U.S. as a country is so varied that it is difficult to conceive of food shortages. If it's dry in Texas, it's fine in Nebraska. In the U.S., hunger is an economic issue; in Africa it's a shortage issue."

Although Redda Mehari, program director of the Ethiopia Community Development Council in Arlington, Va., has lived in the U.S. since the 1970s, he continues to be surprised at how crops produced through large agriculture

morph into packaged and easily accessible food.

"American food buyers don't have to farm," he said. "You just grab it from the store and run without labor, without physically sweating. For me, even now years later, I am still amazed. In Ethiopia, you eat to live. Americans live to eat. Back home, what we ate was not a topic of discussion. It's just another meal.

"What we made came from the farm straight to you," he continued. "We cooked it and maybe spiced it a little but there were no additives. In the market, a cow would be milked in front of you, butchered in front of you."

Injera, a yeast-risen spongy flatbread, remains a staple food in Ethiopia. "Preparing *injera* is a half-day to day-long activity," Mehari said. "Nobody buys loaves of bread."



Americans have begun inching toward eating fewer processed foods. Community gardens are now trendy in cities across the nation. Backyard gardens are seeing a comeback as well. "Gardens are a teacher," said Jill Litt, associate professor at the Colorado School of Public Health. "Gardens reconnect us to where food comes from. People do it to get their hands dirty. We've taken the tactile experience out of our environment. Convenience has replaced feeling. We garden because it feels great. It's very natural."

I realize my small vegetable garden won't soon replace regular trips to the supermarket. But if I know nothing else about my dinner, I'll know the tomatoes and green peppers. My garden is admittedly a small reconnection to the land and to food, a start. But as I slice a homegrown tomato, I flash back once again to Al advising my mother—not only on what to buy for dinner and how best to prepare it, but also on the journey that white-wrapped package of protein took before it landed in her hands. ■

REVIEW

Brave New World

Review by Donna Stokes, *World Ark* managing editor

Abundance for all is within our grasp. It says it right there on the inside book jacket, second paragraph. But is the “for all” part for real? The thing about a book published in 2012 offering both hard and soft data that we’re on the verge of exponential change for the better *for all*, is that it’s nearly impossible to believe. Until, of course, you begin to read the book. After the first few mind-blowing examples that it’s already happening, that doubt becomes something else. Hope? Yes. Fear of the unknown? Maybe, if we’re honest.

Authors Peter H. Diamandis, who runs the X PRIZE Foundation and co-founded Singularity University, and journalist Steven Kotler first explain that by abundance they don’t mean Trump Towers, Mercedes-Benz and Gucci. “Abundance is not about providing everyone on this planet with a life of luxury—rather it’s about providing all with a life of possibility,” they say. “To be able to live such a life requires having the basics covered and then some.”

Diamandis and Kotler are also ready to explain our knee-jerk skepticism of sunny predictions. Humans are hard-wired to be hyper-alert to any perceived threats to survival. It’s the role of the “fight or flight” amygdala in the temporal lobe of the brain, which is much quicker to respond than the parts of the brain that fuel compassion, empathy and altruism.

They use the old newspaper saw, “If it bleeds it leads,” as an example. Bad news sells because we’re always looking for something to fear, even though getting chased by tigers in the wild is largely in our past. Today we’re resistant to change for fear it will leave us in a worse place than before.

What’s more, we’re “local optimists,” seriously overestimating our own attractiveness, intelligence and work ethic, and “global pessimists,” significantly underestimating possibilities such as ending hunger in the world because we believe we have little control over that kind of scale.

The message of the book is that we do have some con-



Abundance: The Future is Better Than You Think
by Peter H. Diamandis
and Steven Kotler
Free Press, 2012

trol, that innovation and practical, affordable technology are more within our reach now than ever before. According to the United Nations, poverty was reduced more in the past 50 years than in the previous 500. “Because of the growth of exponential technologies, small groups are now being empowered to do what only governments once could—including fighting famine.”

Abundance stands out for its specific examples of innovations already in development, or in some cases on the market, by DIY innovators and technophilanthropists. It also acknowledges the role of the rising billion as presenting huge market potential for new technology. Just a few examples from the book to test your knowledge of cutting-edge breakthroughs:

- The Slingshot, invented by physicist Dean Kamen, can purify 250 gallons of even severely contaminated water a day using the same energy it takes to run a hair dryer.
- Sweden’s Plantagon is working on five vertical farming projects in Sweden, China and Singapore. Its standard model allows a greenhouse of 107,640 square feet to grow more than 1 million square feet worth of produce.
- NASA pioneered cultured (or in-vitro) meat grown from stem cells in the late 1990s. By 2008, an economic analysis showed that meat grown in tanks known as bioreactors could be cost competitive with European beef prices.
- 3-D printers allow anyone anywhere to create physical items from digital blueprints. Think of the Star Trek replicator and you’re getting there. Or how Iron Man goes about rendering his latest rocket suit from a computer model.
- The telecom Grameenphone started in Bangladesh in 1997 and by February 2011 had 30 million subscribers in that country, contributing greatly to measurable poverty reduction in a short time.

Chapter Nine, “Feeding Nine Billion,” is for those

particularly interested in ending hunger and poverty. Vertical farming; aero- and aquaponics; agroecology; robotics and artificial intelligence; cultured meat and genetically-engineered seeds are all mentioned as pieces of the solution. Though we may not all agree on how we get there, it's useful to understand what's already happening to make informed choices on what fails and what succeeds.

The authors acknowledge that advancement does come with "grave danger." And "it would be a significant oversight" to ignore them. Find the "Dangers of the Exponentials" chapter in the appendix. It will certainly set your amygdala into warp drive if it isn't already. In short: "The wrong technology in the wrong hands leads nowhere good."

Regardless of whether you're ready to dive head first into a future best explained by *Star Trek* references or if you'd rather flee into the Amish hills, *Abundance* is an important book for anyone interested in global sustainability, fascinated by science and technology or inspired and awed by the continuous march of human possibility.

One last word about judging a book by its cover: This one appears to be wrapped in aluminum. I'll leave it to you to figure out why. ■

NEW AND NOTEWORTHY

How to Run the World

By Parag Khana

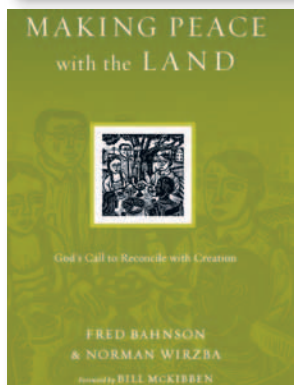
The author, a well-respected scholar of globalization, posits that these sometimes dark and tumultuous days can transform into an era of peace and enlightenment if we create new, far-reaching networks among governments, businesses and other groups that can work together to solve problems and bring harmony.



Making Peace with the Land: God's Call to Reconcile with Creation

By Fred Bahnson and Norman Wirzba; forward by Bill McKibben

Theologian authors consider how Christians can recreate mankind's natural bond with the earth through local food production, Eucharistic eating and delight in God's provision.



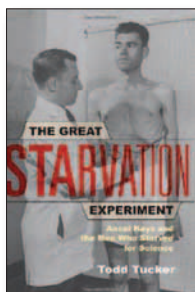
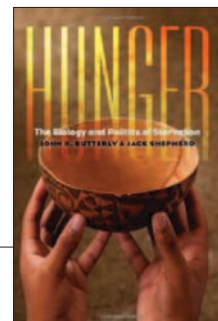
FIVE FAVORITES ON:

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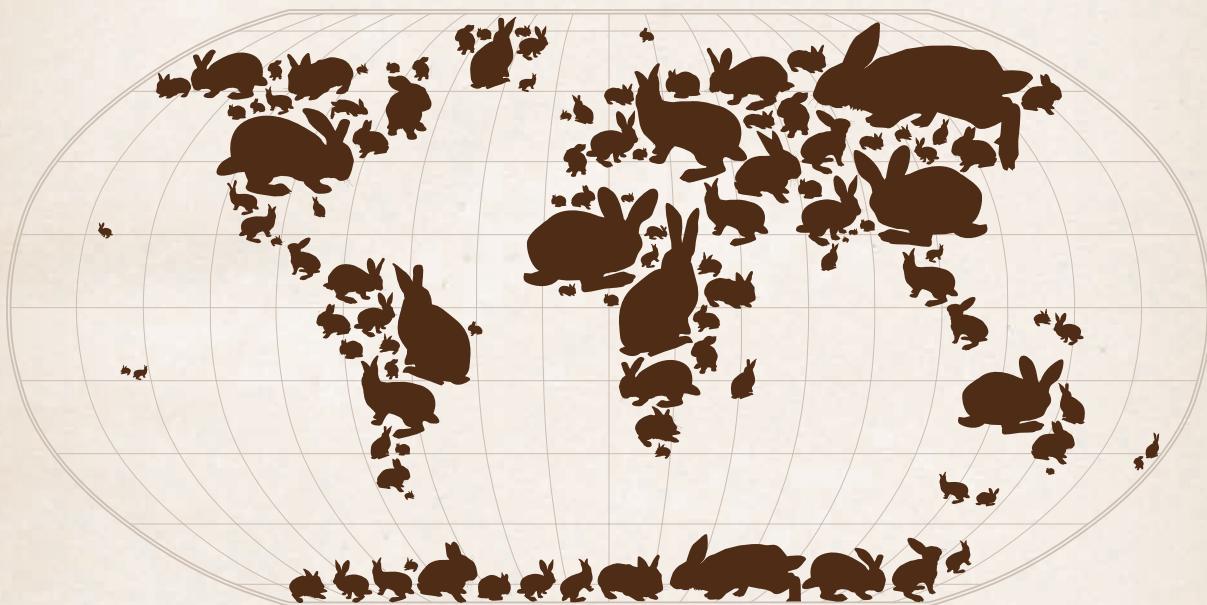
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Everette Woods, Edward Rucker, Alexis Cole and Antoine Burks help move a chicken pen at Heifer Ranch. The four were at the ranch for a weekend of training in eco-friendly farming practices.

Working Ranch

Arkansas learning center, Heifer International USA sow Seeds of Change with training for Delta farmers in profitable, sustainable agriculture.

By **Kelly MacNeil**, *World Ark* contributor | Photography by **Russell Powell**

PERRYVILLE, Ark.—The group of visitors to the Learning Center at Heifer Ranch treated the place as a wonderland, snapping cell-phone pictures of the camels and water buffalo and marveling at the lush, rolling landscape. They came from the Arkansas Delta, near the Mississippi River, where no hill or knoll breaks the horizon for miles. The ranch was only a three-hour drive away, but seemed utterly foreign.

This was no casual sightseeing trip, though. The visitors were potential participants in Heifer International's new

Seeds of Change project, which is working in Arkansas and Appalachia to increase incomes in areas of need through sustainable agriculture. The Delta residents had come for a weekend of training in the kind of eco-friendly practices used at the ranch. The new training program taking root here represents the first time in years that Heifer Ranch has been engaged on the front lines of Heifer International's hunger-fighting work.

Heifer Ranch has been a part of Heifer International since 1971, when it was purchased for use as a holding

area for livestock that would be given to families in poverty around the world. But Heifer learned in the 1980s that it was more effective to purchase animals in-country, where they would be properly acclimatized and their sale would support the local economy. The ranch has been used in recent decades mainly to demonstrate aspects of Heifer's work and to educate the public about hunger and poverty.

The new trainees, though, have already seen plenty of poverty. In the Arkansas Delta counties targeted by Seeds of Change, about 22 percent of the population was living in poverty in 2010. Nearly one in four people in the area are food insecure, which means they don't always know where their next meal will come from. For children, the rates are even worse—about 28 percent are food insecure.

In a Heifer Ranch yard, trainer Paul Casey showed participants how to flip a goat and trim its hooves. A few trainees volunteered to try their hand at it. The squirming goat, though, had little patience with their swipes at the tough, overgrown hoof. "Don't be shy," Casey said. "It's just like a fingernail. And you'll get a feel for it."

Some of the participants from the Delta have experience growing row crops like soybeans or rice. But they've never seen profitable agriculture done without extensive use of pesticides and big machinery. "This is hard work," affirmed Everett Woods, from Colt, Ark., noting that an organic farmer must stay attuned to every detail in order to keep the farm ecosystem in balance and forgo chemicals. The ranch trainers have encyclopedic knowledge of natural techniques to head off pests, weeds, and disease.

In the coming years, new farmers could stay on the

ranch for months at a time to learn the intensive agriculture on display here. Perry Jones, the director of Heifer's USA program, envisions a "farmer incubator" program that would take in novice farmers and, over the course of a few years, give them the skills to run their own family farm.

Chuck Crimmins,



Trainer Paul Casey explains goat care.



Edward Rucker takes a chicken from Heifer livestock volunteer Sarah as specialty crops at Heifer Ranch in Perryville, Ark.

agricultural educator who oversees the ranch animals, is enthusiastic about the possibilities for sustainable agriculture. He sees new demand for local and natural foods outpacing the ability of growers to provide it, especially in the Delta area. "To me, it's the best time to be in small-agricultural production since 100 years ago, when people respected the people who grow food for them," he said.

Heifer's USA program is working to identify a demonstration farm in the other project area, Appalachia, for participants living there. But for those living in Arkansas, Heifer Ranch provides an ideal facility for learning. It has comfortable lodging, on-site dining, ample land and technical experts in holistic agriculture that Jones calls "best-in-class." Because the ranch is so close to the project area, its climate and vegetation are similar to the land the farmers will be using. Integrating the facility with the U.S. project work seemed a classic "win-win."

For Antoine Burks, one of the early attendees of weekend trainings at the ranch, the chance to see actual farm



Strohmeyer. *Trainees are learning how to cultivate livestock as well*

work made the concepts of sustainable agriculture come to life. “When we get hands-on, you get more out of it,” Burks said. “It’s real now.”

Heifer Ranch has always provided some targeted training to participants in various smaller-scale Heifer projects in the United States. But leaders at the ranch and at the USA program say that with the launch of Seeds of Change, the time was ripe to take full advantage of the ranch.

The collaboration with the Seeds of Change project means new tasks for the ranch, and a slightly different layout. A sort of “farm-within-a-farm” will be set aside as a demonstration area, to work out how to make the best profit off of just a few acres of land.

That eye toward marketability will be a new approach. “Because we’re under Heifer [as a learning center], we didn’t really need to say, ‘Is this [farming method] profitable?’” said Michelle Dusek Izaguirre, senior director of Learning Centers. The ranch’s vegetables, fruit, eggs and meat have largely been used in

the on-site cafeteria and in a Community-Supported Agriculture program. The demonstration plot will need to pay its own way, and more.

“That’s the part that will be completely different, and extremely exciting,” she said.

In the 2013 growing season, three to five acres will be carved out for the demonstration market farm. For the Seeds of Change project to be successful, it’s vital that the farmers learn more than just how to grow vegetables and raise animals. They must also learn how to sell those products at a good price and how to manage their costs and their cash flow.

“The economic viability of small-scale agriculture is what’s most called into question,” Jones said. So at the demonstration market farm, the lessons will begin long before any seeds go in the ground. “Production plans will be made not just because somebody has a special love for radishes but because there’s a market for those products.”

The new training program won’t detract from the ranch’s current role as a learning center for the public. Izaguirre said that, if anything, the experience for visitors to Heifer Ranch will be enhanced.

“People who visit the ranch in the future could see Heifer International’s real-life work against hunger and poverty in action. It won’t be a re-creation,” Izaguirre said. “That’s priceless, as an opportunity to understand poverty in the U.S. and connect to Heifer.”

The training program will bring Heifer Ranch full-circle. The picturesque property was once central to Heifer International’s project work, and by coordinating with Seeds of Change, it will be a crucial program element once again.

“It’s an exciting time,” said trainer Crimmins. “I just hope we can teach them well. These are real people, struggling to get by, and we have an opportunity to help make their life easier.” ■



Grower Everette Woods of Colt, Ark.



PHOTOS SUBMITTED BY LINDSAY WOOD

Alex Wood, 13, displays just a few of the many confections he bakes at his home in Lee's Summit, Mo. Wood started Clean Hands Bakery when he was 9, and donates all his profits to help the hungry through Heifer International. Wood has raised more than \$5,000 for Heifer in about four years of baking.

Baking a Big Difference

By Annie Bergman, *World Ark* senior writer

Not many 13-year-old boys know how to make a dark chocolate cake topped with chocolate ganache, and probably fewer take the time to bake that sweet treat for family members' birthdays.

But Alex Wood does all of that and a whole lot more. He now owns a nonprofit bakery and donates all proceeds to end world hunger.

Alex began his philanthropic endeavors at age 5. He had heard in church about the poor living conditions of children in Haiti and decided he could do something to help.

"I thought that this was really sad how they had so little and we had so much, so I started out by doing bake sales and lemonade stands for them twice a year

until I was 9," he said.

When he saw how much impact just those efforts made—he was able to raise \$150 to pay for teachers and children's tuition in just eight times out—he decided to go one step further and open Clean Hands Bakery.

Baking seemed like a good fit to Alex. He liked the taste of cookies, cakes and brownies, but then he became interested in the chemistry behind it all, he said. He knew all along he'd use his profits for good, too.

Through a bit of research, Alex found Heifer through charitynavigator.org. With a bit of urging from parents Lindsay and Becky Wood, who were aware of Heifer's mission, the boy's decision as to who would benefit was made.

Alex said he quickly latched on to the sustainable nature of Heifer's strategy of Passing on the Gift, an-

other reason he chose Heifer to be the beneficiary of his hard work.

"I think what really sets you apart from other similar charities is that you have families Pass on the Gift and you teach them how to use and care for their animals," he said.

From there Alex set the goal of raising \$5,000 for Heifer. It was a goal his parents said they supported completely.

"As a family, we decided that we all wanted to make a commitment to Heifer through the bakery, so Lindsay and I agreed to purchase all of the ingredients if Alex, and occasionally [Alex's brother] Josh, would do the baking," Becky said.

And bake he did.

Alex soon had a variety of confections for sale, and was allowed to sell at the local farmers market in his hometown of Lee's Summit, Mo. Among the choices were banana walnut bread, classic chocolate brownies, gluten- and dairy-free chocolate cookies and spiced pumpkin cranberry bread.

When Alex was about two-thirds of the way to his goal, he started receiving regional and national attention for his endeavors. In 2010, he received the Prudential Spirit of Community Award—an honor bestowed

on one middle school student and one high school student from each state for their volunteer efforts. He's also been named a Ben Carson Scholar and the Gee Whiz Kid of the Year.

"These have all been great ways for me to get my message about Heifer and the fight against hunger and poverty out to the world," he said.

But it was actually Josh who helped achieve his goal.

When it came time for Josh's 9th birthday last year, he decided to ask friends to donate toward his brother's goal of raising \$5,000 for Heifer instead of buying him gifts. All told, his party made more than \$200 for Clean Hands Bakery.

"Alex is a cool big brother. I am really proud of him. It made me feel so good and proud to be the one who put Alex over the top," Josh said.

Despite meeting his goal, Alex still has plans to continue baking and supporting Heifer. He'd like to fund a larger project over the next few years, he said, in either South America or China.

But a more immediate goal is to travel to the Heifer Ranch in Perryville, Ark.

"I really want to experience just how these people that I'm helping live so that I can help them more," he said. ■



PHOTOS SUBMITTED BY BRAD CANNING

The Postmark Cafe in Brooklyn, N.Y., donates all of its tips to various nonprofits, rotating on a monthly basis. The cafe raised more than \$2,000 for Heifer over a period of six months.

Church Coffee Shop Pools Tips for Better World

By Linda Meyers, *World Ark* contributor

The Postmark coffee shop in Brooklyn, N.Y., isn't your average coffee shop. Here the baristas are volunteers from the Church! of Park Slope, and they donate all of their tips—every single penny—to various nonprofits, designating a new beneficiary with each passing month.

The congregation had a desire to find new ways to reach others in their community, said Pastor Brad Canning. According to the church's website, the idea for the café came on a prayer day at the church, and they couldn't seem to let go of the idea.

Giving Resources, Giving Self

“We love making friends with our neighbors. We love to share life with friends. We love hanging out and drinking coffee. We love not being hidden in a church building somewhere,” Canning said.

So out of that day of prayer came Postmark, a nonprofit full-service coffee shop, and it was “the perfect fit” for the congregation. Postmark serves coffee, tea, hot cocoa and many other drinks and goodies, and helps them fulfill their mission to “purposely care for our neighbors and world,” Canning said.

Postmark Café has given tips to different nonprofits and to meet community needs since its beginning about seven years ago. Heifer has benefited at least six times, netting nearly \$2,000 in change from the tip jar.

The café’s manager, employees, and volunteers work together to choose strong, accountable organizations that they believe the community can really get behind.



Patrons’ tips at the Postmark Cafe go to benefit various charities, including Heifer.

Postmark Café has given to Heifer through tips almost every year because Heifer is one of the congregation’s favorite organizations, Canning said.

“Our church, my family, as well as many of our friends had given support for Heifer’s work. We love what Heifer does and love that when we give, sustainable help is given to build struggling communities,” he said.

Visit www.churchofparkslope.org for more information on either the Church! of Park Slope or the Postmark Café. ■

In addition to Heifer, Postmark has given to other nonprofits such as the International Justice Mission, World Vision, City Harvest, Love146, NYC Food Bank, Habitat for Humanity and Doctors Without Borders.

“Once our customers learn that their tips go to these different nonprofits, they seem to love it, as you would guess,” Canning said.



In April 2011 Rosalee Sinn visited women’s goat and sheep projects near Ouarzazate, Morocco. Sinn is pictured (second from left) with members of Tadoula village project, who received sheep from The Rosa Association, a group named after Sinn. Hassania Kanoubi, (on the right) is president of The Rosa Association and works with 52 villages to support rural women in Morocco. Eighteen villages have goats, while others have sheep and chickens.

Dan West Fellow Award

Rosalee Sinn, who served Heifer International for nearly 40 years and is a recognized authority on goats and an adviser to the International Goat Association, was recognized recently for her long dedication and many contributions to helping the world’s impoverished people. The Heifer Foundation—a separate nonprofit organization that grows and oversees the endowment for Heifer International—bestows the Dan West Fellow Award to individuals who have given of themselves to help the less fortunate. Sinn was the foundation’s 2011 awardee. “Rosalee is a wonderful fit for this award,” said Ardyth Neill, Heifer Foundation’s president. “She’s devoted her life to improving others’ lives.” ■

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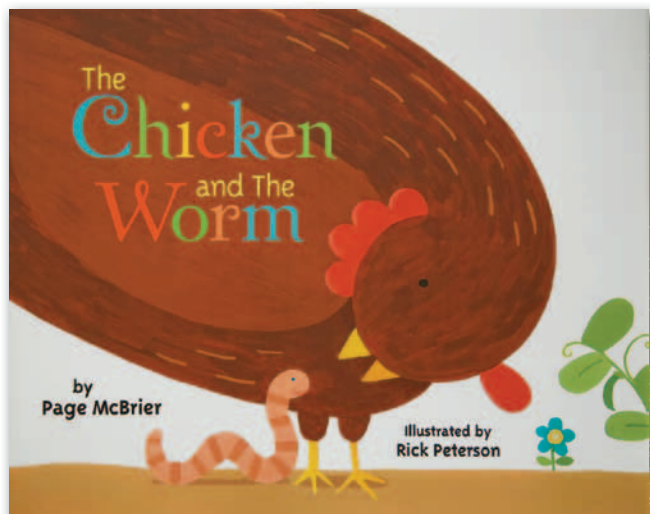
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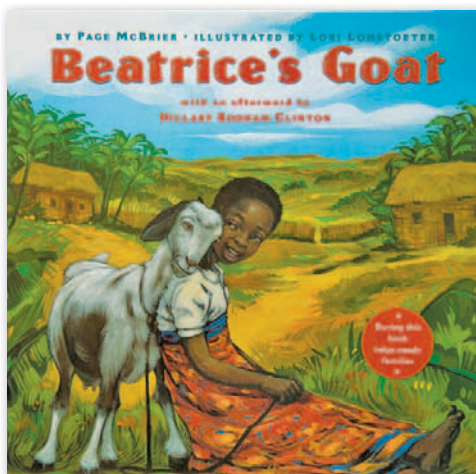
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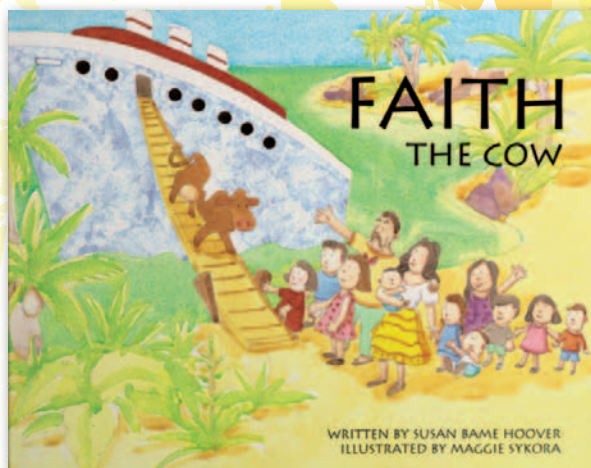
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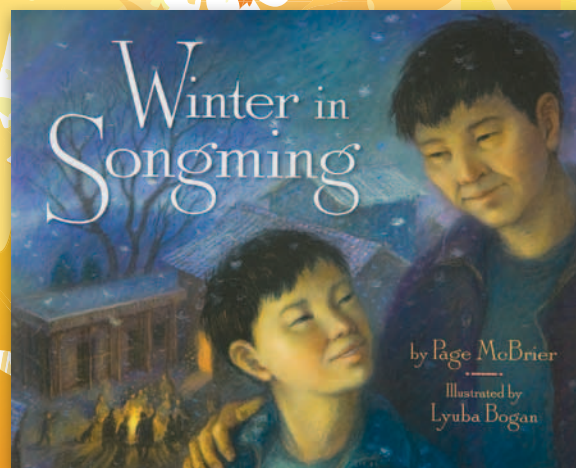
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NLGOURD \$10





PHOTO SUBMITTED BY DIANA CARSEY

Teaming Up to Help the Hungry

By Diana Carsey, area volunteer coordinator and
Cindy Sellers Roach, area community engagement manager

Read to Feed® is Heifer's immensely popular program for educators used around the world to encourage reading and engage students in making the world a better place. But a little ingenuity from the Dunedin, Fla., Rotary club and local Heifer volunteers adapted Read to Feed into a joint program tying civic activism with the reading program.

The Dunedin Rotary club has purchased books for local school libraries for several years. Last school year, they began looking for a way to enrich their annual giving. When area volunteer coordinator Diana Carsey gave a presentation about Heifer that included information on Read to Feed at one of the club's monthly meetings, the club knew Read to Feed was their answer.

One of the groups the club reached out to was the Rotary Interact Club at Dunedin Highland Middle School about the concept of working together to raise money for the hungry through the reading program. After Carsey

gave a Heifer presentation to the Interact club, the students were so excited about the idea they wanted the whole school to be involved.

After gaining principal and staff support, the project was a "go." The Rotary club and the students entered an agreement: if the students met their reading goal of 2,000 books in the 89-day grading period, Rotary would donate \$1,000 to Heifer International on the students' behalf.

In many schools, students solicit individual sponsors for their reading achievements and donate those proceeds to Heifer International. But this was a unique case where the sponsor for the whole group was already in place and the students were ready to read. The students chose Bob Milo, the 8th-grade Language Arts teacher, as their Read to Feed champion, to keep the official tally of what the students read.

Teachers viewed the Heifer video "Passing on the Gift" with their classes and circulated the Read to Feed brochure to each student. As students read their books, their teachers initialed each entry on their forms. The completed lists were handed over to Milo. The student read familiar titles

and new ones, from Charles Dickens' *The Christmas Carol* and Wilson Rawls' *Where the Red Fern Grows* to popular modern fiction like the Harry Potter series.

Additionally, teachers were able to incorporate Heifer's work in their lessons.

"Our 8th-grade gifted curriculum features a 1940s unit and the role of the Seagoing Cowboys and their efforts to replenish European livestock after World War II fit right in to the lesson plans. The efforts of Heifer provide living proof of the generosity and goodwill of the American people to help those less fortunate, and the Read to Feed opportunity also provided a 'service' component to school and community," Milo said.

Eighth-grader and Interact Club President Eva Amram agreed. "It felt amazing to know that an enjoyable activity could benefit others, even feed communities that have been starving since World War II or before," she said.

By the end of the program in January the students had read 2,719 books, well beyond their goal. Jim Haley of the Dunedin Rotary presented a check to Heifer International for \$1,000 on behalf of all the 700 readers and the 12 teachers who sponsored them. The presentation was broadcast to the entire school.

The children decided they wanted Heifer to spend the money on a Milk Menagerie: a heifer, two goats and a water buffalo. With training for recipient families, each animal in the Menagerie will produce gallon after gallon of wonderful, life-sustaining milk.

Dunedin Rotary Club has already planned to encourage every elementary school in the city to set and achieve their reading incentives next school year by giving to Heifer in the school's honor. The elementary schools will be able to combine their reading incentive program with Read to Feed and raise \$500 per school to help other kids and their families across the United States and in the world.

This cooperative project empowered students to both improve reading skills and their understanding and compassion for other people in the world and allowed the Rotary club to promote its goals for both literacy and international action.

"I was thrilled that so many students participated in the reading project. Not only did the students personally benefit from a literacy point of view, they also participated in a worthy service project, and it was fun for all the kids to see Rotary present a \$1,000 check on our behalf to Heifer International," Milo said. ■

Making service fun and educational, Read to Feed could be a great fit for your local clubs and schools, too. To learn more about Read To Feed, or to order or download free materials, please visit www.heifer.org/readtofeed or call (877) 275-READ (877-275-7323).



PHOTO BY DERO SANFORD

Learning Centers

Heifer's Learning Centers provide interactive programs and exhibits showcasing Heifer's model for sustainable development for schools, congregations, youth organizations, families and individuals. Programs are offered throughout the year and range from a few hours to five nights. Learn more at www.heifer.org/visit.

Contact Information

Get your community involved with Heifer by calling 1-877-2HUNGER or by emailing volunteer@heifer.org. To learn about Heifer's educational offerings at each Learning Center, visit the web pages below.

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“When I see these grasscutters, I am delighted. The way things are going, I know that I’ll be very successful. My grandchildren will be better off than me because everything I do in the project I do with them in mind.”

—Rebecca Ashorkor

Rebecca Ashorkor, 64, knows that patience and planning are key to starting a successful business. A recipient of five grasscutters through a Passing on the Gift ceremony in 2009, she’s waiting to increase the number of her grasscutters from the stock of 30 she has now before she starts to sell them to ensure a non-stop profit.

Read more about Ghana’s grasscutter farmers on pages 20-29.

Photo by Jane Hahn



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