in this issue: returning to the soil • expanding resources in Central America research: you can help • conference sneak peek • intern spotlight: Alison Campbell
Walt Trock was one of the men who, early in my role as CEO, invested in my life and taught me many things, including a whole lot about priorities. Walt has since gone home to be with God, but his lessons have never left me. Walt once drew three circles, one inside the other, on the white board. In the innermost circle, he wrote “The Poor” and outside the outermost circle, he wrote “Resources – Human, Intellectual, Financial.” In between the outer two circles Walt wrote “ECHO” and between the inner two circles he wrote, “Partners.” Walt, in his wisdom, pointed to the “Resources” and said to me, “Stan, never forget that God provides all of these resources to help the poor,” as he pointed to “The Poor” in the inner most circle. Then he pointed to the area that contained the word “ECHO” and said to me, “If you ever think these resources are here for ECHO, you have lost your way!”

Dr. Tim Motis is working with Joy and Arun in South Africa to research ways for small-scale farmers to increase the fertility of their soils to produce healthier, more abundant crops. Tim, Joy, and Arun all get the essential role that God plays in the amazing success they are having. Lydia, who just finished her 14-month internship at ECHO, understands, as she shared with the staff a few weeks ago, God’s role both in the growth she saw in the gardens she tended at ECHO and in the way God taught her so many “unexpected” lessons during her time here. Robert understands the mighty hand of God at work in West Africa on a daily basis as he leads our team in Burkina Faso, even during the difficult times created by the current outbreak of Ebola in the region in which they serve.

ECHO was invited to travel to Cuba a few months ago to provide agricultural training and consulting. While there, the ECHO team visited the farm of Antonio who had a beautiful field of corn, yet was surrounded by other farms that had failed corn crops. The ECHO staff asked Antonio what happened, and Antonio told them his story. Antonio had planted his corn seed after the rains had begun, just like all of his neighbors. Soon, the entire region was colored green from newly sprouting corn plants. But then the rains stopped and the seedlings began to droop from lack of water. Antonio told the ECHO team that when he saw that his entire corn crop was going to die, he went out early one morning and knelt down in the middle of his corn field and began to pray. He said his prayer was a simple one. He told God that this entire field of corn belonged to God, and if God chose not to let it survive, then Antonio was depending on God to find another way for his family to survive. Day after day no rain fell, until all of the corn seedlings in the surrounding fields had died, while Antonio’s seedlings refused to die. When the rains finally came back, Antonio’s corn field flourished and he harvested a bumper crop of corn. All of his neighbors came and asked him what new seed he had used or what new technique he had used!? Antonio had the opportunity to share with his neighbors just how mighty the God he serves is and that it was God who kept His corn alive. Proverbs 3:6 – “In all your ways acknowledge Him, and he will make straight your paths.”

In this ECHO News, you are going to read about what God is doing to help small-scale farmers around the world through ECHO. We recognize and give God the credit for your critical role in these successes just as much as the ECHO staff, researchers, and agriculture development workers who train, discover, verify, and distribute the intellectual resources that are changing lives around the world.

Thank you for your willingness to let God use the resources He has given you to make it possible to meet the ever-growing demand to help our network become more productive.
Late last year, Amazon.com launched AmazonSmile, a program that makes it easy for you to support ECHO every time you shop. Customers who visit AmazonSmile (smile.amazon.com) will find the same prices, selection, and shopping experience -- with the added bonus that Amazon will donate a portion of the purchase price to their favorite charitable organization. There is no cap on the total donation amount.

When you first go to AmazonSmile you’ll be asked to select your favorite charitable organization -- and that’s it. Make sure you choose ECHO, Inc. in North Fort Myers, Florida. Once you have selected ECHO on your first visit, Amazon will donate 0.5% of the purchase price from any eligible purchases from that point forward, whether you shop just once or once a day. All you need to do is remember to type smile.amazon.com into the browser on your PC, tablet, or phone when you shop.

Donations to charitable organizations will be made by the AmazonSmile Foundation. You can learn more and support ECHO while you shop at smile.amazon.com.
Returning to the Soil

By Rick Burnette. Photos by ECHO Staff

Have you ever heard of the Coalition of Soil-Based Hunger Fighters? Okay, probably not. I just made that name up. But there actually is such a coalition. It includes small-scale farmers, compost, lablab bean, microbes, cows, mulch, zai holes, ECHO, and you. These partners, and many more, are engaged in boosting farm productivity through restoring and maintaining healthy soil.

Unfortunately, through the centuries, soil has been taken for granted. We have mistreated the resource by disturbing the soil and leaving it exposed and unnurtured. As a result, a major threat to global food security is farmland that has become eroded, poisoned, and degraded to the point of being unable to sustain crops or natural vegetation, much less, communities.

Fortunately, there have been exceptions to poor soil stewardship. In the 1908 classic, Farmers of Forty Centuries, USDA official Dr. F. H. King recounts his travels through the Far East to better understand how this ancient and crowded region was able to feed itself. One of King’s observations was that the health and condition of soil in parts of China, Japan, and Korea was continually being maintained through the addition of manure and even canal mud, both rich in nutrients and organic matter.

In contrast, modern agriculture attempts to compensate for traditional and rather burdensome soil maintenance through the use of machinery and chemical fertilizers, particularly over large acreages. And conventional wisdom asserts that with adequate soil conservation, soil testing, maintenance of a proper soil pH and the timely application of inorganic fertilizers and water, along with high-yielding crop varieties, the world can be fed.

However, in terms of boosting global food security, what we often fail to account for is that: (1) Smallholder farmers, working on up to 10 hectares (25 acres) of land, provide up to 80 percent of the food supply in Asia and Sub-Saharan Africa; (2) A large segment of these food producers till marginal land that is either degraded or at risk of such; (3) For most smallholders, there is no access to reliable, year round irrigation; and (4) Other inputs, such as chemical fertilizers, not to mention expensive capitol items (tractors, harvesters, etc.) and farm credit, are out of the reach of many smallholders.

Smallholder farmers, working on up to 25 acres of land, provide up to 80 percent of the food supply in Asia and Sub-Saharan Africa.

Convinced that small-scale farmers in the developing world are crucial for global food security, a key response of ECHO and our partners is to evaluate and promote the best and most appropriate options for nurturing the soil on small farms.

Good farmers recognize that healthy soil is not simply sterile media, but rather a habitat for beneficial soil life ranging from microbes to earthworms. Combined, these creatures help to fight plant disease, aerate the soil, and enable crop root systems to access essential nutrients.
Fortunately, many local materials, such as dried leaves and straw, can be used as mulch to cover and protect the soil, or be composted with manure. When compost is added back to the earth, it increases the availability of organic matter, making the soil even more habitable to beneficial soil life. Additionally, compost improves soil condition so that better drainage takes place during wet periods enabling soil moisture to be conserved during drought.

Since a key ingredient for compost is manure, properly integrating livestock into small-scale farming systems is extremely important. Manure from goats, rabbits, and cows can be composted in various ways. Deep-litter systems, by which pigs are raised on thick layers of sawdust or rice husks, can produce excellent compost. Also, cow manure or rabbit droppings can be fed to earthworms to produce vermicompost.

Another soil-friendly approach is to graze cows, goats, pigs, and chickens in well-managed rotational systems so that pasture forages are not depleted, nor compacting the soil surface. The manure that is left behind on pastures will nourish the land, benefiting both animals and farmers. Recognizing the soil-building role of farm animals, ECHO
evaluates, teaches, and promotes a variety of livestock approaches for small farms.

Soil improvement is not limited to the addition of compost or animal manures. Green manure/cover crops, such as lablab bean, supply soil organic matter via their residues. And many add crop-yield-boosting nitrogen while covering the soil, thereby minimizing weeds, erosion, and the loss of soil moisture. Additionally, planting and managing green manure/cover crops generally requires less effort than handling and applying manures and composts.

These various soil-improving options can also be combined for increased benefits. For instance, ECHO is currently engaged in research looking at the effects of zai holes enriched with compost. Along with the use of mulch and green manure/cover crops, these microcatchments are a means of sustaining crop production, particularly in semi-arid regions of the world.

These are only a few of the options available to smallholder farmers for the nurture of healthy soil. While some require less effort than others, all of these options reduce the potential waste of valuable farm byproducts such as manure and straw. Additionally, various other practical approaches are presented in ECHO technical documents via ECHOcommunity.org and promoted through ECHO educational programming.

Finally, do not forget that you are another significant member of the coalition. As an advocate of healthy smallholder farming systems, you can extend your influence by supporting ECHO’s efforts to evaluate and promote soil-health strategies that increase food security around the world.

Over the past decade the Latin American/Caribbean Region has seen its rate of extreme poverty reduced by nearly one third. This decrease, both in terms of percentage of population and real human numbers, is heartening, but much is yet to be done.

164 million people in Latin America still find themselves in poverty; the vast majority living in rural areas as subsistence farmers.

To meet this daunting challenge, ECHO has launched an exciting new ministry to bring our diverse and proven resources directly to smallholder farm families and development workers living throughout Latin America and the Caribbean.

Working from our main campus in Fort Myers, the new Latin America/Caribbean Regional Impact Team follows the model of the successful strategy employed through our Regional Impact Centers in East and West Africa and Asia. The SG foundation and the Light a Single Candle Foundation have been key partners in the launch of the Regional Impact Team. Their support has provided the resources needed to begin implementing core activities such as:

- Targeted, in-country workshops with key regional partners to bring ECHO’s technical knowledge and experience directly to those who desperately need it.

- Wide-reaching regional networking opportunities to bring together both large and small organizations to enhance cooperation and build synergistic partnerships.

- Additional Spanish language technical documents and online training opportunities to increase the impact of existing ECHO resources.

- Localized seed saving and exchange networks to help better meet the most frequently expressed need of development workers and small farmers throughout the region.

The newly formed Regional Impact Team launched its efforts with a trip to Cuba in late May to provide consultation to small local churches looking for ways to increase food security in their communities and to hold training workshops for small holder farmers. In December, the Regional Impact team will be holding seed saving and exchange workshops in Nicaragua with BioNica/CCID.

ECHO is grateful for a larger opportunity to bring life-giving agriculture options to our neighbors living and working throughout the Latin America/Caribbean region.

Expanding Resources in Central America

*Regional Impact Team serves the Caribbean*

By Brad Ward. Photos by ECHO Staff
what's happening

Training on “Foundations For Farming” and the production of Moringa was held this summer in Sanekui, Mali. This training provided learners with new practices that can increase their crop yields and improve their livelihoods. Review allowed participants to summarize the techniques for classmates.

Five baby goats were born this summer to Cali and Phi. They are growing quickly, jumping, and playing in their pasture home.

Follow us on Instagram for pictures of ECHO’s work all around the world. #echofightshunger

ECHO staff Charles “Bonny” Bonaventure shows special guests around the demonstration garden in Arusha, Tanzania.

East Africa Demonstration Garden
Agri Corps Students

Agri Corps volunteers who trained for a week at ECHO Florida are now serving in various villages in Ghana. They are teaching agriculture and applied science while mentoring 4-H clubs, gardening, and supporting other community projects. Learn more about Agri Corps at www.agricorps.org.

Annual Tilapia Harvest

Staff, interns, and volunteers seined two ECHO ponds in May, harvesting 262 fish, for a total of 98 pounds of tilapia meat.

New Bee Hives in Asia

ECHO’s Asia Seedbank built and installed three appropriate bee hives. Pictured here, they utilize a brick base, bamboo for support, and a hollowed out trunk for the main hive.
Philanthropy & Stewardship at ECHO
celebrating the generosity & faithful legacies of our family and friends worldwide

Gifts of Stock

Others can benefit from your gains. Pass on the blessing, retain the tax deduction.

Intelligent donors like you are always looking for ways to make your charitable dollars go further and make more of a difference to the causes you care about. With the end of the year quickly approaching, a gift of stock to ECHO might be a taxwise contribution. Donating long-term appreciated securities directly to ECHO — rather than selling the assets and then donating the cash proceeds — is one of the best and easiest ways for you to give. By taking advantage of the applicable tax incentives, you can significantly decrease your tax liability while increasing the funds available to you for charitable giving.

One of the most tax-efficient ways to give

A charitable contribution of long-term appreciated securities — i.e. stocks, bonds and/or mutual funds that have realized appreciation over time — is one of the most tax-efficient of all ways to give. This method of giving has become increasingly popular in recent years.

The two key advantages:

• Any appreciated securities with unrealized gains (purchased over a year ago, and have a current value greater than their original cost) may be donated to a charity and a tax deduction taken for the full fair market value of the securities — up to 30% of the donor’s adjusted gross income.

• Since the securities are donated rather than sold, capital gains taxes from selling the securities no longer apply. The more appreciation the securities have, the greater the tax savings will be.

Donating Appreciated Securities: A Win-Win for Donors and for ECHO

If you are looking to maximize the power of your charitable contributions — to make a single asset make more of a difference to ECHO and other charitable causes you care about — consider donating stocks, bonds, or mutual funds.
Tips on Timing Your Year-End Charitable Gift

As the end of the year approaches, please keep in mind a few deadlines and tips to ensure your gift to ECHO is processed and applied to the 2014 tax year.

**Give Online**
Electronic gifts are effective immediately as your purchase is automatically charged to your debit or credit card. EFT debits are effective once the funds clear your bank.

**Gift by Check**
The effective date of your charitable contribution is the day you mail or hand-deliver the check, provided you have placed no restrictions on its cashing. A check dated December 31 and mailed and postmarked on that date is deductible this year. It does not matter that we receive the check in the new year and that it is actually charged to your account in January. Note: If your check is mailed in December but postdated so that it cannot be cashed until the next month or if it is dated in December but not mailed or handed to us until January, it cannot be deducted on the prior year’s return.

**Gift of Securities**
Securities are among the most popular assets for making charitable gifts. The rules for transferring securities, while not complicated, are strict. If you plan to take a deduction on this year’s return, you will want to exercise care to ensure that you execute your transaction so as to complete your gift this year.

Remember that the amount of your deduction depends on the value of the securities at the time the gift is completed. Choosing the date to complete your gift can make a difference in the amount of your deduction. Practical tips:

If you hand-deliver a properly endorsed stock certificate, or an unendorsed stock certificate and a properly endorsed stock power, the gift is effective on the date we receive it.

If you deposit these documents in the mail, the postmark constitutes the date of the gift. It is important to send the stock certificate and the stock power separately when sending securities through the mail.

If your securities are held in a brokerage account, ask the broker to call for instructions and transfer stock from your account to a temporary account in our name. The gift is effective when the stock is transferred from your account. After receiving instructions, a broker can usually complete the transfer electronically. The broker must call us for instructions on handling the stock, in order to ensure that the valuation of the gift—and your charitable deduction—takes effect on the proper date.

**Gift of Mutual Funds**
As the donor, by letter or by completing a form provided for vouchers, you instruct the fund’s transfer agent to transfer all or “x” shares to an account established for us. Your signature should be guaranteed. The date of the gift is the date the shares are credited to our account.

**Gift of Real Estate**
Your gift is complete on the day the signed deed is delivered or mailed to us. Although the actual execution of a deed can be delayed until the very end of the year, the gift should be put in motion earlier, as we will need to determine the acceptability of the gift. Also, in most cases an appraisal will precede the gift. ECHO’s Gift Acceptance Policy is available upon request.
Around the world, over 7,000 members of ECHOcommunity are working together, sometimes at great distances, to diagnose issues and innovate solutions. Members are sharing their knowledge and research to improve efficiency and increase project success rates.

In a recent study by Joy Longfellow at ECHO South Africa, lablab bean (Lablab purpureus) has proven to be a top-performing legume in HGBF-funded ECHO research trials. Currently, lablab is being evaluated in an intercropping system with maize and cowpea. A variety of cowpea is being grown that spreads rapidly and produces a crop early, within 12 weeks of planting. Lablab is slower to establish, but if well-watered in the early months, can continue to produce green fodder and biomass during prolonged dry spells later in the growing season (Bunch, Roland. 2012. Restoring the Soil. Winnipeg: Canadian Food Grains Bank). This proved to be the case in 2013-14 season trials at Ukulima Farm in South Africa. Results indicated that cowpea and lablab can be planted together with maize to extend the time over which food/fodder is produced.

At the onset of the dry season, after the cowpea and maize were harvested, the lablab (“Rongai” variety) was still green and vigorous, providing excellent ground cover and a living mulch. However, while producing dense, late-season biomass, seed harvest was adversely affected by small green and brown worms that bored holes through the maturing seed pods and feasted on the developing seeds. Many of the mature pods were opened to find shriveled seeds or no seeds at all.

After some research, it appears that the culprit is most likely Adisura atkinsoni, a pod-boring pest whose larvae makes holes in the pods and feed on the seeds as they develop. ECHO South Africa is curious about others’ experiences with lablab and with pod-borer pests.

Do you have experience dealing with this pest? Are there any suggestions for control? What management practices have you found helpful or unhelpful?
The ECHO International Agriculture Conference brings together some of the brightest minds in international development. This year will be no exception. Plenary sessions highlight educational topics that have been proven around the world with great potential to improve the lives and livelihoods of small-scale farmers.

John Thumi never thought he would be an international trainer. Raised in Mweiga, Central Kenya, by his grandparents, John grew up with little money and distinctly inauspicious prospects. He did not complete secondary school, and — as a young adult — had no marketable skills.

In 2009, however, John discovered the Children and Youth Empowerment Center (CYEC), a non-profit community organization in Nyeri, Kenya, connected to Penn State University, where he took carpentry classes. Zawadi Youth Enterprise was born out of the entrepreneurial aspirations and abilities of young CYEC alumni, providing training and entrepreneurial opportunities to young people. Zawadi ventures include tailoring, chickens, bee-keeping, gardening, and zero-grazing dairy goats.

Dr. Sjoerd Duiker, an associate professor of soil management and extension specialist, introduced innovative and yet affordable technologies to mow grass and bale hay to the Zawadi Youth in December of 2011. Despite numerous challenges, by 2012 the hay-baling initiative had become a viable, rapidly growing business, allowing John and his friends to make their own income.

Duiker believes that training trainers is key to effectiveness and sustainability. “If we really want to make an impact, we should empower youth so that they can not only develop their own business, but also so that they can train others.”

Eric Toensmeier is the award-winning author of Paradise Lot and Perennial Vegetables, and the co-author of Edible Forest Gardens. He is an appointed lecturer at Yale University and an international trainer presenting in English and Spanish in the US, Canada, Mexico, Guatemala, and the Caribbean. Currently he is writing Carbon Farming: a Global Toolkit for Stabilizing the Climate with Tree Crops and Regenerative Agriculture Practices. He has studied permaculture and useful plants of the world for over two decades.

Eric has spent much of his adult life exploring edible and useful plants of the world and their use in perennial agroecosystems. Eric ran an urban farm project for Nuestras Raíces in Holyoke Massachusetts, providing access to land for Latino and refugee beginning farmers and serving as a cultural agritourism destination. His urban homestead is a model of how to apply permaculture to a small space with poor soils. His writings, videos, and more can be viewed at www.perennialsolutions.org.
Hi! My name is Alison Campbell, and I am the current Community Garden intern. I started my internship here in October 2013, and am headed out this December. I am originally from Northern Virginia, and having spent four years of college in Atlanta, some would say I am a “townie.” I found my way to Georgia Tech through volleyball, and three years later found myself living in a refugee community, sharing a home with two Iranian, Farsi-speaking women. Little did I know how God would use my relationship with refugees, and a farming internship my last semester of college to fill a graduation requirement, to lead me to ECHO a year and a half later.

My passion for sustainable agriculture quickly grew. I loved being able to get my hands dirty and spend time outside. After working on various farms I began to see that farming is more than just seeing the success of one’s crop. While being at ECHO I have gained not only the knowledge of caring for various plants and soil life, but have also been able to experience agriculture in a more wholistic sense. It has not just been an internship, it has been a season of learning many things: how to live life in community, the difficulties of development, and the interconnectedness between agriculture and the call to care for God’s creation.

After my time at ECHO, I plan on making my way back to Clarkston, Georgia, to work with refugees in an agricultural context. Because of my experiences at ECHO, it will give me another way to reach out to recently arrived refugees through a common ground of farming. With numerous farms and community gardens scattered throughout the area, I will be able to build relationships with non-English speaking refugees from all over the world through a shared language of agriculture. I look forward to seeing how God will provide and open doors through this next season of life.
Solar Dryers at ECHO Asia

The ECHO Asia Impact Center has teamed up with the Horticulture Innovation Lab at University of California, Davis (UC Davis), to build and compare two solar dryers.

Fruits and vegetables have the potential to be profitable commodities for small-scale farmers, but have high risk. These crops are often harvested in high volume over a short period of time, when quality is high but prices are low. Rates of loss and waste in fresh produce can be quite high, especially in developing countries. Solar drying of fresh fruits and vegetables is a processing technique that preserves and extends food supplies, creates value from crop surpluses, empowers smallholder farmers with income, and creates rural employment.

Bamboo

The bobber is starting to bounce up and down in the water. Is there a fish on the other end? I give a tug and then, expectantly, swing my long bamboo fishing pole around. Triumphant, I drop my catch in the boat.

I do not consider my pole very much while I am fishing, but if I really thought about it, I would be amazed to learn that I am fishing with grass. Bamboo is actually in the grass family.

One of the most useful plants in the world, bamboo provides shade, building material, animal fodder, and food. Some countries use it for everything from scaffolding on skyscrapers to pig troughs. Edible varieties produce shoots that can be eaten after being boiled.

Bamboo grows well at ECHO. When we harvest the stalks we select the three-year-old, cured stalks (culms) for building material. Bamboo groves should be harvested from the inside out to reach the old growth first. Bamboo should not be planted in wet or flooded soil, but ECHO’s bamboo has tolerated some flooding.

Clumping bamboo sends up new culms only inches from the earlier ones. The diameter of the clump increases year by year. Varieties differ greatly in size, some being dwarf and some reaching over 100 feet.

Most of our bamboo growth is on permanent display at ECHO Global Farm in Fort Myers, Florida.

The ECHO Asia Seedbank is one of seven sites around the world that has been chosen to build and run trials between two dryers. One is a traditional model designed by the United Nations Food and Agriculture Organization (FAO) in the 1980s, and the other a new UC Davis design.

The result is two large drying apparatuses, where before there was only hog manure and compost. Between the two, they set up a weather station that will monitor wind velocity, wind gusts, hours of daylight, relative humidity, and ambient temperature. Preparations for trials on 140 kgs of tomatoes and 15 kgs of chillies have now begun, and these will be repeated in the cold and hot seasons when weather conditions are even more suitable for cooking.
Save the Dates

**ECHO East Africa Highlands Symposium - Burundi**
October 29-31, 2014

**21st Annual ECHO International Agriculture Conference**
November 18-20, 2014

**Tropical Agricultural Development I: The Basics**
January 19-23, 2015

**Forum Ouest Africain/West Africa Networking Forum 2015**
January 27-29, 2015

**East Africa Symposium - Tanzania**
February 3-5, 2015

**Ambassador Day**
February 6, 2015

**Farm Day**
March 21, 2015

**Tropical Agricultural Development II: Basic Gardening for the Tropics**
June 22-26, 2015

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