“God is able to make all grace abound to you, so that in all things at all times, having all that you need you will abound in every good work.” 2 Corinthians 9:8

David Erickson, President/CEO

Years ago I had an experience that has always stuck with me. I was meeting with a group of people who wanted to know more about the mission and impact of ECHO in Florida and around the world. As the meeting was wrapping up, I mentioned that I was leaving for Tanzania later in the day in order to spend some time with our East Africa Impact Center Team. After the meeting, one of the participants took me aside and pressed some money into my hand. He said: “I’d like you to give this to the first person you meet in Tanzania whose need touches your heart.” The impact of that “assignment” was surprising to me—it put my heart and mind on high-alert; it made me the custodian of a special gift; it commissioned me with a sacred duty. I’ve never forgotten that experience and the deep impact it had on me.

As I read through the articles in this issue of ECHO News, that experience…that feeling came back to me. We are custodians of special gifts—Gifts of trust, of knowledge, of responsibility. People around the world look to ECHO for knowledge upon which they can rely; not simply information (of which there is an overwhelming supply) but knowledge. We strive to ensure that the knowledge we share—about plants, agricultural practices, and appropriate technologies—is practical, proven, and applicable. Sometimes this means that we need to conduct field research at one of our Centers or with partners elsewhere in the world. Inside of this issue of ECHO News there are a couple of great ECHO research stories!

Effectively sharing this knowledge with those who need it is a tremendous responsibility. Learning to grow more (and better) food is not only a pressing current reality; it is also intimately tied to what gives life meaning and purpose and opportunity. Equipping those who have been disadvantaged and preparing the leaders of tomorrow are part of ECHO’s responsibility. You will learn more about some recent ways ECHO has done this inside this ECHO News.

In this issue we also launch a new series on the Biblical Basis for ECHO’s Mission. This is a big topic that is at the core of who we are and what we do. Giving expression to the grace and goodness of God is both a sacred duty and extraordinary privilege. I think the upcoming articles will be thought-provoking and deeply affirming of the mission of ECHO.

As you choose to give to the work of ECHO, you are giving us an “assignment” to take the special gifts entrusted with us and use them to bless and benefit people in need all around our world. We are grateful to you and are fully engaged … with heart and mind.

Thank you!
“I joined ECHO as the Program Coordinator for the Central America/Caribbean Regional Impact Team in January, 2016. To say I feel blessed would be an understatement.

Since coming to ECHO, I have pressed sugar cane, attended Tropical Agricultural Development (TAD) training classes, participated in the Global Food and Farm Festival, and celebrated new staff as they join the team. I appreciate our ECHO interns, full of life and energy, who are eager to learn. I admire our volunteers who give their time, talent, and hard work. I am filled with awe and wonder to see the complex system of people, agriculture, and technologies come together to form the ECHO family.

Every day, as I drive home, I am grateful for the gift of this wonderful place where I work and hope to make a difference. Thank you for the privilege of serving at ECHO.”

—Libby Arcia, Program Coordinator, Central America/Caribbean Regional Impact Team
Relational Gardening

Gardens at The Plaster House nourish residents and promote creativity, dignity, and mentorship.

The Plaster House is a not-for-profit organization based in Arusha, Tanzania. Their aim is to provide a safe place for healing after surgery for children of all ages. At any one time you can find around one hundred kids boarding at the house waiting to go into surgery or recovering from operations. It’s common to find children with severe burns, club feet, cleft palates, or missing limbs playing together in the yard.

Safe spaces can be hard to find when so often village-life is based on living within the standard of normalcy, which too often includes appearances. Children who don’t look ‘normal’ are sometimes shunned, abused, or abandoned. Plaster House gives off a fragrance of acceptance and visitors can see a smiling community in the midst of such trying circumstances. Children can spend an indeterminate amount of time at the Plaster House depending on the severity of the surgery.

Volunteers come and visit regularly, but oftentimes the older boys can be overlooked as they don’t quite fit into programs that are directed to young children. As a result, Plaster House nurse, Hannah, invited ECHO to come and design some educational opportunities for the youth. The goal was to construct some kitchen gardens and provide a mentorship between the boys, Victor the gardener, and other male role models.

Over the last several months, Venance Mollel, Adiveckson Mamkwe, and Travis Silveus and others have visited weekly.

On the first visit, Venance explained that the purpose of ECHO was to encourage creativity with farmers to
solve problems that they’re facing. Before we left, we asked the boys to be creative to make something new out of used water bottles.

The following week, the ECHO staff was happy to find that the youth had made a number of things out of the bottles including several garden designs and a simple drip irrigation system, showing immense creativity. The consecutive weeks included activities surrounding sack gardens, tire gardens, medicinal uses of native plants, and nutrition. The ECHO staff planted chaya and leaf cassava cuttings and explained the uses of the perennial greens and encouraged cooking staff to incorporate them into the diets. Along with the sweet potato greens from the sack garden, the amaranth and celery in the tire garden and the garlic to be planted in the keyhole garden, ECHO has worked to supplement the diets of the children who stay there.

Most of the time, a trip off of the campus means going into surgery, so the teens were relieved for a chance to explore and learn outside of the walls.

In January 2017, ECHO was very pleased to host a group of youth from Plaster House at the ECHO demonstration farm in Arusha. Most of the time, a trip off of the campus means going into surgery, so the teens were relieved for a chance to explore and learn outside of the walls. We are looking forward to continue mentoring Victor, the gardener, as the on-site teacher to continue educating each new group of boys and girls hosted at Plaster House.
If you’re like me, academic citations and peer-reviewed journals don’t always make me think of small-scale agriculture or international missions. Did you know that publishing and staying current in academic journals are part of ECHO’s strategy to reduce hunger and improve lives?

Peer-reviewed academic journals are the backbone of academic collaboration, research, information verification, and dissemination. Scientists build on the discoveries of others, painstakingly documented and tested by others in their discipline. These journals are well-respected and trusted to publish articles with verified information of value to the greater scientific community.

In February 2017, ECHO’s most recent reviewed article was published in Agronomy for Sustainable Development, an “international journal for scientific research on the interactions between cropping systems and other activities in the context of sustainable development.”

This ECHO Asia research published in the Journal of Agronomy for Sustainable Development by former interns (Brian Lawrence and Kimberly Duncan) along with Director Dr. Abram J. Bicksler, was carried out in 2012-2013 at the ECHO Asia Seed Bank in Thailand to determine what effective low-cost strategies might be employed to prevent certain pests (cowpea bruchids in this case) from ruining particular types of stored seed (specifically lablab bean) in the tropics, whether being stored by small institutions or smallholder farmers. The tested approaches included treatments and materials that either institutions (i.e. seed banks) or smallholder farmers might readily access.

The research determined that vacuum storage, which our ECHO Asia Seed Bank employs and can be done with low-tech materials such as bicycle pumps and sealed jars, is very effective at controlling the pests and maintaining seed viability in storage. In addition, various effective bruchid-controlling materials include powder made from galangal root, carbaryl (a commercial insecticide), and bamboo charcoal.

These published results are very important for ECHO’s network as they demonstrate that vacuum sealing and several other appropriate treatments provide novel, low-cost seed storage options for seed banks and smallholder farmers in the developing world. In other words, the use of expensive pesticides as well as climate-controlled facilities can be avoided for effective seed storage.

Additionally, by having its work published in a refereed journal, such as Agronomy for Sustainable Development, ECHO is demonstrating its commitment to sourcing our network with reliable and relevant information. In turn, this information will be shared and taught within the network, and beyond, in various appropriate contexts.
Whether it’s a roots and shoots club in Tanzania or a gardening club in Honduras, ECHO often seeks to give back to our communities by investing in the next generation. The goal is to inspire students and equip them with the knowledge to make a difference in their community.

In January 2017, ECHO had the opportunity to invest in 150 high schoolers in Cape Coral, Florida. The Model United Nations clubs from around the region were gathered for a mock summit. ECHO addressed the students as the keynote speaker, highlighting the role of sustainable development and agriculture in solving some of the world’s most challenging problems. Students then debated issues as they shared what they had learned and gained insight from other students. The summit helps to shape the students’ worldviews as they identify with needs and struggles of peoples around the globe. Sarah K., a club officer, feels that through Model United Nations and ECHO she has learned “leadership skills and global awareness necessary for [her] future career in public service.”

This experience led the students to action as they realized how ECHO’s work impacts communities worldwide. Helping to spread the word, the students distributed ECHO seeds and brochures during a fundraiser spanning two weekends. ECHO helped them raise $3000 for their club, and the students were able to act locally and spread the word about what ECHO is doing globally.
what’s happenin

Craig Bielema, AT Manager, demonstrates how to build a Top Lit Up Draft (TLUD) stove for making bamboo biochar.

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

“Companion Planting” with East Africa Interns

ECHO East Africa interns planting a field of maize and lablab. The fields are part of continuing research in partnership with Canadian Foodgrains Bank.

#echofightshunger
Research through Field Trials

Asia Research and Technical Associate and former Intern, Patrick Trail has been travelling again, this time to the Philippines to plan for a workshop to take place at the beginning of 2018.

While there, he was also able to help a few farmers use soil test kit materials to measure the levels of nitrogen, phosphorous, potassium, and pH in their garden beds and eroded soils, to illustrate the benefit of building up soil fertility!

Seed Bank Visitors

The ECHO Asia Seed Bank regularly hosts visitors and trainees, hungry to learn about the various sustainable agriculture methods used there. A group experiences up-close appropriate technology demonstrations and then enters the Seed Bank to learn about various seed-saving techniques.

Bamboo Construction Workshop

With over 1,000 different species of bamboo in the world, the plant remains an essential source of food, implements, and construction materials. In this hands-on workshop, participants were exposed to dozens of useful tropical varieties of bamboo, practical insights related to the propagation, harvesting, and preservation of bamboo, and basic construction techniques.
ECHO Asia, in collaboration with Medical Teams International and Shanti Nepal, will be hosting a Sustainable Agriculture and Community Development Workshop over three days at the Annandaban Training Center in Kathmandu, Nepal.

Topics will be pertinent for not only Nepal, but other South Asian countries and will include hands-on demonstrations and also several site visits.

As the first official ECHO training event held in Nepal, we look forward to strengthening partnerships and expanding the reach of ECHO’s resources.

Give to ECHO this Mother’s Day

Honor Mom with a special gift

Did you know that a gift to ECHO can empower a mother around the world? ECHO trainings can equip women to provide for their family’s nutritional needs. Simply put, when small-scale farmers increase production, hunger is decreased.

Give a gift of $100 to help provide a scholarship for a woman to attend an ECHO training or join with family members and provide training for an entire village. We can send you an attractive gift card, or send the card directly to Mom.

Honor Mom this year with a gift in her name.
Less Fertilizer, More Cauliflower

Supporting Agricultural Extension in Bangladesh

With 160 million people living in an area the size of the state of Georgia, cropland is not an overly abundant resource in the country of Bangladesh. In order to meet the ever growing needs of its population, it is not uncommon for farmers in this delta nation to produce three consecutive seasons of rice on the same piece of land in a given calendar year. This relatively recent intensification of the land doesn’t come without its costs and relies heavily on expensive external inputs such as fertilizer, a dwindling of irrigation water resources, and an uninterrupted “invitation” extended to crop pests and diseases.

Before receiving a visit from an agricultural extension agent last year, Abdul had never been introduced to or attempted to grow a Green Manure Cover Crop (GMCC). Unaware that cover crops offer numerous soil-building benefits through nitrogen fixation, the addition of organic matter, weed suppression, and surface temperature reduction, he likely would have been wary to give the concept a shot on his valued piece of land. Not without the nudging of Jahangir Alam, a trusted friend who is also a Mennonite Central Committee (MCC) agriculturalist.

Jahangir was invited by ECHO to participate in a research study on GMCCs in which five varieties were grown in different locations in Asia. The information gained from the study gave partners like Jahangir more experience with the crops, and will be published for ECHO’s entire network.

Leveraging ECHO’s regional field trials of different GMCCs, last year, Jahangir, a very good agricultural extension agent, was able to take ECHO’s research straight to the farm. Working together with Abdul, they implemented a GMCC trial on Abdul’s farmland. Data on the comparison of GMCC varieties was used through relationships with ECHO Asia, and valuable ECHO information was compiled and disseminated throughout its wider network. MCC Bangladesh improved its standing and credibility in the community through sharing trustworthy techniques in their interactions with farmers, and Abdul learned a new approach to building up his soil fertility in a way that is practical and appropriate to his environment.

At the conclusion of the ECHO field trials, Jahangir suggested to Abdul that as he planted his next round of crops in the field he might try and reduce his regular rate of fertilizer by half to see for himself the benefits the legumes had provided. Abdul did as was suggested and found that the cauliflower he planted on the GMCC portion of the field grew just as well as usual or better than those on the portion of the field not receiving GMCC treatment!

This research, initially conducted in ECHO’s South Africa project, has been expanded and is being verified to assess the benefits for farmers throughout Southeast Asia. Abdul has benefitted by finding that he is able to cut his fertilizer usage by half, meaning more of his income can be used for other needs for his family.

ECHO is also compiling this research into an online legume selection tool and a technical document [in multiple languages] to increase the reach of this valuable information even further.

From a field in South Africa, to a farmer in Bangladesh, this is the ECHO Effect.

Supporting Agricultural Extension in Bangladesh

L-R Abdul Motin, farmer, and Jahangir Alam, extension agent with Mennonite Central Committee, work together to implement Green Manure Cover Crops on Abdul’s farm for the first time. Jahangir gained experience in GMCCs through ECHO research.
ECHO is pleased to announce availability of the eBooks *Options for Restoring Unproductive Soils* and *Options Where Water is Scarce*. These electronic publications include the content from the second and third chapters of *Agricultural Options for Small-Scale Farmers: A Handbook for Those Who Serve Them* (originally published in 2012 as a sequel to *Amaranth to Zai Holes*).

*Options for Restoring Unproductive Soils* builds on the foundational concepts explored in ECHO’s previous electronic publication, *Fundamentals of Agricultural Development*, and covers practical, project-oriented options for restoring unproductive soils. Topics discussed in this eBook include lessons and practices in land stewardship; specific farming systems with proven success in soil restoration; and soil amendment options that reduce reliance on mineral fertilizers.

*Options Where Water is Scarce* also builds on foundational agricultural development concepts. It covers options for coping with scarce rainfall, including rainwater harvesting strategies and irrigation options.

Upcoming eBooks include Chapters 4 and 5, which cover practical, project-oriented options for crop utilization to improve human nutrition (Chapter 4) and for diversifying the smallholder farm (Chapter 5).

The eBooks *Options for Restoring Unproductive Soils* and *Options Where Water is Scarce* are available for purchase from Amazon for $4.99 each, in Spanish, French, and English.

We hope that the perspective found in these eBooks will help lead your mission teams, equip local pastors, or assist missionaries through your church to carry out holistic ministry around the world.

Stay tuned for the next chapters available later this year. 📚
What Compels You?
Turning your Compassion into Action

by Amy Wiggins

There’s one Mother’s Day card I’ve kept for years because of the note my son wrote, “You’re the best cook ever.”

Sure there are compelling statistics and biblical commands about caring for the poor. But if I am honest, my son’s message perfectly captures the reason I will always support ECHO’s mission. I know moms everywhere long to provide for their children, yet many lack the resources they need. I simply can’t imagine not having enough food to feed my hungry sons.

But reality forces us to imagine it. Instead of letting the ease and abundance of our lives blind us to the difficult circumstances others struggle against to survive, we can choose to see the need and respond. These simple questions can help you turn your compassion into action…

I know moms everywhere long to provide for their children, yet many lack the resources they need. I simply can’t imagine not having enough food to feed my hungry sons.

Are there ways you’d like to reduce your tax burden? You can satisfy your desire to support ECHO while also benefiting from valuable tax savings through a gift of stock. Important factors are how long you’ve held the shares, and whether the value has appreciated. If you’ve held appreciated securities more than a year, you can eliminate capital gains tax and receive a charitable deduction based on the stock’s fair market value at the time of transfer – making this more cost effective than writing a donation check. If you want to rid your portfolio of underperforming securities while also reducing your taxable income, you’re better off selling depreciated stock first and donating the proceeds.

Is there someone you would like to honor? Make a gift to ECHO to establish a fund in honor of a loved one. For example, one ECHO supporter established a fund to provide scholarships to help train women in East Africa. Another ECHO volunteer is considering how she can honor her late husband’s dedication to medicine and missions by setting up a scholarship fund. By inviting other family members to contribute, you can pass the legacy of giving onto younger generations.

Do you wish you could make a larger gift than you can afford right now? While available cash might be tight during this current stage of life, you can make a lasting gift by designating ECHO as the full or partial beneficiary of your retirement accounts. Donors appreciate the ease of not needing to draw up a new will – just complete a beneficiary designation form from your retirement plan custodian. The flexibility of being able to easily change your designation, and the possible tax advantages to your heirs can make this a wise way to steward the wealth you’ve worked hard to build during your lifetime.

For more about how your compassion and generosity can make a lasting difference, please contact ECHO’s Advancement Office at 239-567-3327. The legacy you leave tomorrow starts with the plans you make today!
The Biblical Basis
for ECHO and Agricultural Missions

by Bruce Wilson

William Carey, the “Father of Modern Missions” was a world class botanist. Among his many contributions to the country of India, in 1820 he founded the Agricultural and Horticultural Society of India. For the next 80 years - until 1900 - that society acted as the de facto department of agriculture of India. Today, the Society continues to play “a crucial role in horticultural development and environmental restoration”.

The convergence of missions and agriculture is making a comeback. More and more mission agencies and cross-cultural workers are understanding the Biblical basis for agricultural missions, the need for Christian engagement in environmental issues and the power of agriculture to convey spiritual truth.

The mission of ECHO is to follow Jesus by reducing hunger and improving lives worldwide through partnerships that equip people with agricultural resources and skills.

That mission of witness and agriculture takes place at the convergence of nine Biblical themes. Over the next issues of ECHO News, we will be sharing about each theme:

1. Stewardship of God’s Creation.
2. Creation Proclaims the Beauty and Majesty of God.
3. Creation was Intentionally Designed to Illustrate Spiritual Truth.
4. God Provides for His Creation.
5. Compassionate Care for the Poor and Hungry.
8. Equipping the Saints.

These Biblical themes provide the foundation for the mission of ECHO. Our strategy is based on scripture, informed by statistics, and developed under the guidance of the Holy Spirit.
Join ECHO for Upcoming U.S. Trainings

Seed Saving: A Practical Overview for Small-scale Seed Banking May 8-12

ECHO offers over 350 varieties in its Florida seed bank requiring diverse approaches to growing, processing, and storing seeds. This five-day course will begin in ECHO's seed production plots to help participants better understand how crops are managed and harvested, as well as germination testing. Emphasis will be placed on seed saving technologies and approaches for challenging tropical locations.

Tropical Agriculture Development: The Basics July 24-28

This course will especially benefit those who are considering short- or long-term involvement in international agricultural development work. It can also be of benefit to those who have been on the field doing development work for a few years but who would like to take a step back and re-evaluate their approach.

Course participants will gain an introduction to aspects of poverty and community development and an orientation to ECHO. They will also receive instruction on proven agricultural principles/practices and practical techniques, systems and technologies to meet agricultural and nutritional needs of small-scale, impoverished farmers.

Introduction to Community Development August 14-18

As a development worker or missionary, where do you start? How might you ensure that development efforts will be relevant, realistic, and community-owned? This five-day course will cover the basics of effective community development. Using proven participatory methods, experienced community development workers will introduce attendees to basic tools that can enable development workers to survey local assets and needs and create project management cycles.

For more information on any of our trainings, visit www.ECHOcommunity.org and view the Calendar.

Mango

Around the world, mangoes are considered one of the finest fruits. The tree originates from India and Southeast Asia, but is now grown all over the tropics and subtropics. Each country and people group has their favorite type of mango. Jamaicans favor the dwarf Julie, Indians the Alphonse, Haitians the Madame Francis, and the Thai relish the Nam Doc Mai. Each mango varies in taste, shape, and size. There are over 500 named varieties, and well over 200 grow in Florida.

The Mango tree has a broad round canopy standing erect in most cases. In Florida, the largest grow around 50ft high and 40ft wide. The soil type is not as important to the tree as long as it has good drainage. Mature mangoes can handle as low as 25 °F temperatures, but varying some between varieties.

Stop by ECHO's tropical fruit nursery to get your own mango tree! The nursery is open Monday-Friday 9:00am-5:00pm and Saturday 9:00am-4:00pm.

Tip: Cutting a Mango

1. Slice both ends off the mango, revealing the long, slender seed inside. Set the fruit upright on a work surface and remove the skin with a sharp knife.
2. With the seed perpendicular to you, slice the fruit from both sides of the seed, yielding two large pieces.
3. Turn the seed parallel to you and slice the two smaller pieces of fruit from each side.
4. Cut the fruit into the desired shape.
Ducks at Work

Often, throughout the day, you can find the ducks at ECHO-Florida roaming the farm in search of food. One of their favorite places is pre-sale, where propagation staff grows and maintains plants for sale. The ducks are a welcome addition to the staff and volunteers that care for the plants as they do a wonderful job eating pests that would otherwise eat the plants.

The plants benefit from the pest management of the ducks, the ducks enjoy the shaded ‘buffet’, and the staff appreciate both the supply of duck eggs and the lower pest management work load.

Around the world, animals are an integral part of any small farm system. Visit our facebook page to see a short video of the ducks in action @ECHOfitsHunger