



EMERGING OPPORTUNITIES FOR SUSTAINABILITY

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NOTE FROM THE EXECUTIVE DIRECTOR

Welcome to Emerging Opportunities for Sustainability – EOS International, NFP!

EOS has been more than a year in the making and we are excited to be sharing our first newsletter with you. Our vision is to help millions of people living in poverty by collaboratively implementing sustainable technologies that serve their needs and improve their lives. We will not accomplish all this overnight, but we are already taking initial steps – creating our basic organizational structure, establishing our vision and mission, and beginning our first projects in Nicaragua. This semi-annual newsletter will keep you informed on our progress towards this vision in the future.

Before getting into what EOS International has been working on recently, I want to start with a little history. In December 2007, ten friends at Iowa State University started meeting to discuss interests, ideas, and dreams related to international development. Conversations became more serious last spring between four students that wanted to begin working in the development sector after college. They decided to start their own non-profit organization focused on international development work and thus Lee Beck, Chris Deal, Wes Meier, and I founded EOS International at a late night meeting in May '08. We have since incorporated EOS International and recently submitted our application to the IRS to obtain official 501(c)(3) non-profit status.

This year has presented challenges and created excitement for us. Lee is finishing his final year at Iowa State, Chris spent the '08-'09 school year in a Master's Program for Renewable Energy at Makerere University in Uganda on a Rotary Ambassadorial Scholarship, and Wes began his two year term as a Peace Corps Volunteer in Nicaragua this past September. I started an 18-month engineering rotation program at General Mills in Cedar

Rapids, IA and have been managing EOS operations from my apartment. Our first board meeting was in February and we elected ten members to our Board of Directors and also voted three dedicated volunteers to join me on the EOS staff. The Board of Directors' names and Staff bios are included in this newsletter.

We took our first project trip last month to install a drip irrigation system in Wes' village in Nicaragua. Wes will be teaching local farmers how to use the system as they grow vegetables during the dry season for the local elementary school. Having Wes on the ground for the next 18 months will provide an opportunity to get our initial projects started and will steer us towards thinking about long-term success and sustainability after Wes finishes his term.

Many of you have supported us so far and we would not be where we are today without your time and talent. Special thanks are in order to graphic designer Cori Myhre, the legal help of Bill McGrath, Christine Mohr, and Kelly Smith from Davis McGrath, LLC, the finance and tax expertise of Dean Sellheim, and the marketing expertise of Vicky Strahan.

We look forward to hearing back from all of those interested in supporting and getting involved in our mission. Please help spread the word about EOS! As an African Proverb goes, if you want to go fast, go alone; if you want to go far, go together. Contact us about getting involved so we can get farther, sooner.

Peace!

Greg McGrath
Executive Director



EOS BEGINS INITIAL PROJECTS IN NICARAGUA

From March 14-21, 2009, Iowa State engineering students Lando Roberts and Charles Fisher traveled with Greg to San Jose, Nicaragua on the initial EOS Development Trip. The group spent most of their week in Wes' village installing a drip irrigation system for the local elementary school's garden. System installation took two days and was successful despite minor setbacks. This project was made possible thanks to Drip Technologies, Inc., a California-based company that designs drip irrigation systems, who donated their basic components for a large garden drip irrigation system.

In April, Wes planted radish, tomato, onion, and pepper seeds in the garden with the help of 15 people in the village. He is teaching them how to use the system to gauge the potential impact this technology may have on the village and also so they will take over control of the garden.

Drip irrigation is important to EOS because it can make a significant impact for local farmers to increase their income and improve the nutrition of their family during the annual 6-month dry season. Most farmers do not plant gardens during the dry season because there are no simple irrigation solutions currently in place other than using rainwater during the wet season. Drip irrigation allows a farmer to plant a vegetable garden, and obtain two harvests while using a minimum amount of water due to the efficient design of this technology.

Over the next 18 months, Wes will be leading efforts to test this method of drip irrigation and gauge interest from local farmers via the test plot in his village. EOS plans to build test plots in other villages where there are other Peace Corps Volunteers for the next dry season, starting in January '10, in an attempt to impact more farmers in Nicaragua.



FUTURE EOS PROJECTS IN NICARAGUA

San Jose is a rural, agriculture-based village consisting of 43 families and nearly 400 people. The labor rate is \$2.50/day, and a day is equivalent to a solid five hours of work. Wes lives in San Jose, just off of a main paved road that leads to El Sauce, a larger city of 2,000 where he must travel to use the Internet, visit a hardware store, and meet other various needs. He has a potable water spout just outside his house, cooks on an improved wood-burning stove, takes showers from a bucket and collects manure daily for his fertilizer/compost pile which he'll use to fertilize his garden.

After living in San Jose for four months Wes has established relationships and is working with villagers to implement a number of projects focused on improving lives and livelihoods of his neighbors. EOS plans to make a positive impact in all 43 families in San Jose and is helping raise money to give Wes the start up capital for these projects and will help him in the implementation process. To keep the process sustainable, villagers will make payments over the next two years and may offer labor to help Wes implement other projects.

» Biogas Digester | \$130 each

(includes: parts, labor, installation, and a gas cooking range)

Cows are plentiful in San Jose. They appear to be roaming freely, yet everyone seems to know which animals are theirs and where they are. Biogas digesters need water and manure to function, and there is not a shortage of either in San Jose. Adding manure and water to a digester every one to two days will provide five hours of gas for cooking daily. The previous Peace Corps Volunteer in San Jose helped build sixteen biogas digesters and Wes hopes to build another nine.

» Improved Stoves | \$30 each

(includes: parts, labor, and installation)

Most Nicaraguans breathe in smoke every day from cooking indoors on an open fire with no chimney. The improved stove design still burns wood, but does so more efficiently. This stove design also is insulated to prevent burns, and has a chimney, which takes smoke out of the kitchen and drastically improves the long-term health of the user.

» Improved Ovens | \$60 each

(includes: parts, labor, and installation)

A co-op in San Jose would like to build two ovens to be able to make bread for consumption and to sell in local markets. This oven design uses less wood and is more efficient than current oven designs.

» Environmentally Friendly Washstands | \$70 each

(includes: transportation of materials, training, installation, materials)

The majority of women in San Jose currently carry their laundry up to a mile to wash their clothes in the river. This is inconvenient and it also introduces soap and chemicals into the river's ecosystem, harming marine life and causing long-term damage to the environment. This project will install a washstand at the house for ease of use and will safely deposit the wastewater and soap into the ground.

» Drip Irrigation Test Plots | \$50 each

(includes: parts, labor, instruction, and installation)

We will use Wes' Peace Corps network to build more drip irrigation test plots in villages where there are other volunteers to spread this technology in an effort to help local farmers generate income during the 6-month dry season.

» Solar Lighting for Homes | \$500 per house

(includes: solar panels and related parts, batteries, labor, installation, and monthly maintenance by Wes)

There are villages near San Jose without electricity and these villagers have an interest in solar lighting technology but do not have the capital to purchase a system and do not have access to credit. A \$500 lighting system will provide enough power to use a radio and four lights for four to five hours per night. This allows them to follow the news and extend their workday, while giving their children an opportunity to study.

These are projects we feel confident that Wes will be able to implement starting immediately that will make an impact during his time in the village and will also be sustainable and continue to positively impact the community after he leaves.

GET TO KNOW THE EOS STAFF

Greg McGrath | Executive Director



Greg graduated from Iowa State University in 2008 with a degree in Mechanical Engineering and a minor in Spanish and is currently a Project Engineer at General Mills. While studying at Iowa State, Greg gained experience in designing systems utilizing sustainable engineering principles and appropriate technology. Greg has worked in Honduras, Nicaragua, and Mali on projects including drip irrigation systems, water valve design, off-grid lighting systems, biomass cook stoves, and sustainable building design. In his travels, Greg has gained insight on development by working directly with local laborers and NGOs.

Joe Dunlay | Assistant Director



Joe is a 2006 graduate of Iowa State University with a B.S. in Mechanical Engineering. After graduating, he went to graduate school for Mechanical Engineering. During graduate school, Joe worked on rural lighting and electrification for off-grid rural villages. Joe also worked on biomass stove development for the same rural villages. Joe has traveled to Mali three times to work on lighting and stove projects. Joe is currently working as a design engineer for John Deere while completing his master's degree.

Joe Lamusga | Finance Director



Joe graduated from Iowa State University in 2007 with a degree in Aerospace Engineering and is currently a Design Engineer for Rolls-Royce (think planes, not cars) in Indianapolis, IN. Joe has always had an interest in development and became passionate about this field when he spent part of a summer in Sri Lanka after the devastating tsunami. There, he was able to witness first hand both the difficult conditions that people in the developing world face and the great potential contained in the Sri Lankan people. Joe focused mainly on construction and education while in Sri Lanka and split his days between rebuilding a leveled village and teaching basic English to any who wished to learn. Joe is excited to bring his passion for people and his technical knowledge of mechanical design to EOS International.

Megan Sellheim | Director of Operations



Megan has a bachelor's degree in Chemical Engineering from the 2006 Iowa State University class. She is currently a Manufacturing Technology engineer at 3M in St. Paul, MN. After studying at Iowa State, Megan spent three months traveling in Europe and she has had the travel bug ever since. Since starting at 3M, Megan has traveled to the Middle East and Asia, observing difficult living situations and the need for wider use of appropriate and sustainable technology development around the world. Megan is the U.S. based project manager on EOS's drip irrigation project recently installed near El Sauce, Nicaragua.



EOS BOARD OF DIRECTORS | 2009

Greg McGrath,
Project Engineer, General Mills

Krishna Athreya
Program Director, ISU Engineering
Leadership Program

Chris Deal
Rotary Ambassadorial Scholar, Makerere
University, Uganda

Joe Dunlay
Engineer, John Deere

Joseph Lamusga
Design Engineer, Rolls Royce

Lee Joseph Beck
Undergraduate Student in Horticulture and Food
Science, Iowa State University

Mark Tekippe
Senior Design Engineer, Digi International

Megan Sellheim
Manufacturing Technology Engineer, 3M

Penn Taylor
Consultant, ADTE Consulting

Wesley Meier
Peace Corps Volunteer, Nicaragua

WE'RE OFF AND RUNNING

Great news for friends of EOS and anyone looking to support sustainable development! As of May 7th, EOS has applied for 501(c)(3) status with the IRS. As Greg described in the Future Projects in Nicaragua article, EOS will not only continue to advance drip irrigation technology for rural farmers in Nicaragua, we will also be supporting the implementation of biogas digesters, laundry washstands, improved stoves, and more. We are seeking financial support to make these projects a reality.

If you are interested in supporting these projects, below is an estimate of what your donation will provide:

- » **\$20** | Basic drip irrigation components for a small garden plot
- » **\$30** | An improved stove for a house in San Jose
- » **\$50** | Basic drip irrigation components for a 20' x 20' garden
- » **\$60** | An improved oven for the local co-op
- » **\$70** | A laundry washstand for one family in San Jose
- » **\$130** | A biogas digester for a family in San Jose
- » **\$400** | A flight for an EOS member to travel to Nicaragua
- » **\$500** | A solar lighting system for a house without electricity
- » **\$3,000** | Washstands for all 43 families villages in the San Jose, Nicaragua



DONATE

Donations can currently be made by writing a check made out to EOS International. Please send donations to:

EOS International

c/o Joseph Lamusga

454 East North Street Apt# 301

Indianapolis, IN 46202

Please note that while EOS has submitted their application for 501(c)(3) status, donations will not be tax-deductible until this status is obtained from the IRS. However, all donations will be tax-deductible retroactive to the date of donation once we do obtain this status. For questions, please e-mail us at info@eosintl.org.

EOS is not only seeking financial donations. We are always excited to receive in-kind and technology donations. We have already partnered with Drip Technologies, Inc., through an in-kind donation of a drip irrigation system, to facilitate the garden plot reconstruction project in Nicaragua. This partnership allows EOS to demonstrate and educate the local community about drip irrigation technology. This donation also allows Drip Tech to receive free product testing, provided by EOS engineers, in a new market area. EOS hopes to grow more of these symbiotic partnerships with other companies developing sustainable, life-improving products.

GET INVOLVED

EOS is still a new organization and we have a lot to learn, so if you have ideas, resources, relevant contacts, etc. we are excited to hear from you! Please contact us at info@eosintl.org to get in touch, to learn about more opportunities for involvement, and to join the conversation. We look forward to hearing from you soon!

Visit us on the web!

The EOS Web site has been live as of January. Find more information about our group, projects, and opportunities to get involved at www.eosintl.org.

» You can also view pictures of our Nicaragua trip and other related pictures on Greg's Picasa page, <http://picasaweb.google.com/gregory.mcgrath>.