NEWSLETTER

ECHO
East Africa Impact Center

October 2017 Issue No. 012

ECHO's Best Practices!

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UPCOMING E VENTS.

"Strong Harvest"
Moringa Peer Educator Training Seminars in Tanzania
3rd – 4th November, 2017 (English)
6th -7th November, 2017 (Swahili)
ECHO East Africa Impact Center
Arusha, Tanzania
Click here for location details
For more information about these trainings please click this link

Best Practices in Pastoralist Areas Symposium;
6th – 8th , March, 2018
Sportsman's Arms Hotel, Nanyuki, Kenya

Best Practices on Improving Nutrition in Dryland Areas Symposium
7th – 9th August 2018
Naura Spring Hotel
Arusha, Tanzania

For more information and registration of the above two symposia please visit:
www.ECHOcommunity.org

For more updated information visit us on facebook at
https://www.facebook.com/echoeastafrica

DO YOU WISH TO ANNOUNCE A TRAINING OPPORTUNITY?
LET US KNOW AND WE WILL POST IT ON
www.ECHOcommunity.org
East Africa Blog

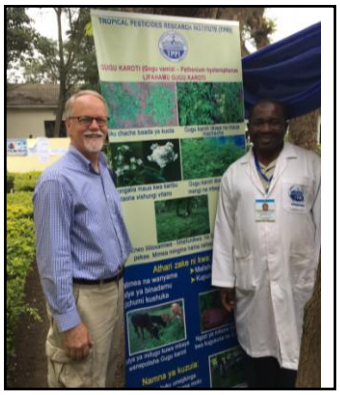
NANENANE AGRICULTURAL SHOW
Reaching small scale farmers

ECHO EA participated in this year Nanenane Agriculture show. The whole preparation from the beginning involved the establishment of demonstration plots for showing the use of green manures / cover crops. ECHO EA issued seed packets for propagation at the Nanenane Agricultural show, including GM/CCs, perennial vegetable seeds and planting materials.. Chaya cuttings were particularly popular among perennial vegetables given to attendees.

Harold Msanya, ECHO EA staff explains about green manure/cover crops to students who visit ECHO demonstration plot at the Nanenane Agricultural Show

ECHO team at the Nanenane Show demonstrated other technologies including (a) a new design for hauling water by human power, (b) a new simpler dry eco-toilet not requiring water which stores human feces for 6-12 months for subsequent use as fertilizer, and (c) a simple storage method (2 weeks) for human urine making it safe for fertilizer. These innovations are inexpensive and do not require water. Many farmers were thankful for getting a chance to know about green manure / cover crops and their usefulness in conservation agriculture.

ECHO's CEO/President paid a visit to the Nanenane Show during his visit to East Africa to facilitate various collaborations with institutions and organizations across the East Africa region.



ECHO CEO/President, David Erickson stands with Ramadhani Kilewa of the Tropical Pesticides Research Institute who shares about an invasive weed, "Parthenium".

Appreciation: Local Interns facilitate ECHO's work

ECHO hosted 12 university students over the summer from different local universities. They were involved in preparing for the annual Nanenane Agricultural Show in August, in the tree nursery, seed bank activities and lablab field trial monitoring. ECHO East Africa welcomes students from local universities to gain experience of how its activities can impact the future career of University students. We thank them for devoting their time towards the mission and vision of ECHO. We wish them God's blessings in their future careers hoping that their practical training with ECHO has added to their abilities to solve challenges relating to hunger and poverty.

Sokoine University of Agriculture interns– August 2017

ECHO EAST AFRICA WEBSITE

ECHO East Africa Impact Center shares information and resources on sustainable agriculture and appropriate technologies in the surrounding region. ECHO interns, volunteers and advisors who work to achieve its mission of sharing resources are provided with mutual advantages and opportunities. View the robust reservoir of resources available for free now online at ***www.ECHOcommunity.org***

"Newsletters from our Network collaborators"

Conservation Agriculture newsletter - September, 2017.
Tanzania Newsletter No. 3 by AgriProFocus - July, 2017.
Tanzania Newsletter No. 3 by AgriProFocus - September, 2017

APPROPRIATE TECHNOLOGY. Moving towards energy self-sufficiency: addressing challenges to biogas technology uptake for improving rural livelihoods

In recent times biogas technology is increasingly important around the world due to the requirements for renewable energy production, the need for recycling and reuse of materials and reduction in greenhouse gas emissions. Biogas addresses all the above concerns, using renewable inputs such as animal manure, producing methane-rich gas as an output which can be used as a source of energy in various ways. Another key output of biogas is the residual material which contains all the nutrients in the original raw materials and offers a way to recycle them. Besides being renewable, biogas is a source of clean energy meaning that methane when burnt is converted into heat and carbon dioxide. The latter is a lot less harmful to the environment in terms of contributing to climate change than methane which would have been released into the atmosphere in the absence of a biogas setup.

Agricultural biogas is one of the multifunctional practices that can contribute positively to improving rural livelihoods in the East African region. First, the dependency on firewood/charcoal (or other non-renewable energy sources) for domestic cooking is partially or completely eliminated. This is a significant saving to the household which would typically use a major portion of its income on the purchase of domestic energy sources. Importantly, producing biogas in the homestead reduces the workload of women and children who would typically walk far distances in search for firewood. Bio-slurry, another important output from biogas is a source of manure which enhances production of crops and maintains soil productivity. Importantly, bio-slurry is broken down and acted upon by the microorganisms during the process of biogas synthesis thus helping to create a cleaner environment free of flies and odor. As such biogas is considered to be a low-cost sustainable practice for small farmers in the region who typically have a sustainable source of animal manure.

A new tubular biogas digester built with funds from Innovate UK at a farmer homestead near to ECHO (Picture on the left above). A new digester is already providing cooking fuel for the family (Picture on the right above).

Currently four digesters have been installed through ECHO out of which three are at the farmers homestead. Farmers are extremely happy with the

INNOVATIONS
Empower College Students

Creative Livelihood Challenge (CLC) training was conducted with 15 students of Arusha Technical College and 15 CCB innovators from nearby communities. This type of training was developed and facilitated by Dr Elizabeth Reece- an Australian volunteer who has been based at Twende in Njiro, Arusha. It is similar to Creative Capacity Building training (CCB) but focuses on the business side. It engages participants to practically develop items while thinking who are going to be their customers. A 'shop' selling various materials that participants might need is created at the corner of the classroom and participants are given cash to buy materials and keep records in booklets. The booklets are designed to guide innovators to keep records in a very simple way. On the last day of the training customers (communities) are invited to come to buy the items from the market. Each group of participants sells its items to the market and keeps records in booklets. Other records that are kept in the booklet include time used by group members to create items, hiring of tools, labor costs/salaries and other costs. After selling the items in the market each group prepares a simple balance sheet which enables members to realize whether they are making profit or not. They finally put a way forward on what changes they would like to make in their business in the future. This activity was done in collaboration with ECHO and Twende. The picture above shows CCB innovators documenting costs of products they created during the CLC in Twende.

biogas venture on their premises. Records show a replacement or complete substitution by biogas from charcoal/firewood for the beneficiaries. The beneficiaries who have been early adopters are becoming opinion leaders among fellow farmers/villagers in disseminating biogas practices. One demo biogas plant is within ECHO's appropriate technology section for easy viewing by visitors. Together these are providing important learning lessons for furthering the cause of sustainable energy production in the region.

ECHO is facilitating a year-long effort to improve efficiency of biogas plants through remote monitoring sensors, working in conjunction with four other partners, the Centre for Agricultural Mechanization and Rural Technology, Tanzania - CAMARTEC; the University of Nottingham (UoN), CREATIVEnergie, and Scene Connect Ltd from the UK. This project is funded by INNOVATE UK/DfID in collaboration with CREATIVEnergie. Sensors will monitor pressure inside the digesters (a key parameter for successful biogas production) which are simple, low-cost and can relay signals through the phone network. This will enable technicians/experts to monitor digesters remotely and identify remedial actions. The monitoring of the digesters is anticipated to increase efficiency and uptake of the technology.

At a recent Biogas Summit different stakeholders explored what remote sensing and networking can do to enhance biogas efficiency. In other activities, the Smart Biogas project funded 3 different biogas digesters on 3 nearby farms ready for piloting a new remote testing APS in September.

ECHO's ongoing efforts provide an important link between various stakeholders in the awareness and promotion of biogas. It is working together with government agencies such as the Tanzania Domestic Biogas Program along with many other local and international organizations. ECHO would like as many farmers taking up the biogas technology as possible. ECHO realizes that currently biogas is only spread through word of mouth, from farmer to farmer and person to person. ECHO would like to create awareness in the communities through printing media and online platforms using social media and mobile phones. It is anticipated that biogas practice adoption will lead to generating local employment in the form of technicians, biogas installers, entrepreneurs, financers and conveyers in the cause for sustainable energy production in the region. ECHO is happy to further collaborate with anyone interested in the application of biogas technology to optimize the benefits and improving rural livelihoods in East Africa.

NEWS IN BRIEF

PARTHENIUM HYSTEROPHORUS

Embarking on the road to combat an invasive weed

Malvery Begley joined ECHO East Africa from the US Peace Corps in May this year. She will facilitate ECHO'S activities including our work to combat invasive weeds which threaten the life of people and animals in Arusha, Tanzania. Since joined ECHO East Africa she has been aware of the issue of Parthenium or as we call it in Tanzania "Gugu Karoti". This invasive weed presents a huge challenge to the communities served by ECHO which tries to increase awareness of its negative impact in northern Tanzania over the past few years. It is fast spreading throughout the Arusha region of Tanzania and beyond. The US Peace Corps / Feed the Future have partnered with ECHO East Africa in providing seed funding to educate rural farmers and villagers in the Arusha area on control of Parthenium. With this project already in action ECHO has been able to catch the attention of various government officials through many meetings. ECHO is currently preparing for a campaign day of Parthenium and other invasive weed species which will take place on October 19 of this year at TPRI-Ngaramtoni. There will be many important stakeholders who have partnered with ECHO in the awareness promoting project who are presenting in the campaign day. The issue of Parthenium is surely grabbing hold of the communities in Arusha and will hopefully become widely known to the nation. **For more information on Parthenium visit this** link

ECHO staff and stakeholders during a Parthenium control mobilization meeting to raise awareness of people in Arusha

Managing soil erosion with the help of local NGO's

Restoration of Green Environment and Eradication of Poverty in Tanzania (RGEEPT) and Rural Community Network (RUCONET) are two local NGOs working among communities near to ECHO. ECHO has provided technical support to them in construction of various types of vegetable gardens and contour bunds on sloping lands. In May RGEEPT and RUCONET received 23 visitors from Belmont College, Nashville, TN through a local tour operator, to come for 2 ½ days to accompany farmers to reduce soil erosion, harvest water and improve their environment in 2 sub-villages of Lemanyata and Lengijave villages. They learned how to measure contours, dig ditches, plant trees and grasses, and channel water from the nearby roads into the field ditches. The villagers were highly animated to be accompanied by the students. At the end, each student donated support to the two NGOs, in order to sustain their support of the villages to address degraded areas where some ravines are more than 5 meters deep. In the past year, several miles of contour bunds have been measured and dug in these villages and village by-laws have been re-enacted which were dormant for more than a decade.

Belmont College students practiced to dig contours in Lemanyata and Lengijave villages.

ECHO EAST AFRICA SEED BANK:

Seed exchanges with small scale farmers

Educating farmers about green manure/cover crops (GM/CC) is a focus at events and trainings supported by the ECHO EA Seedbank. Farmers appreciate to receive lesser known crops, valuable seeds for their lives and soils. The importance of seed conservation is regularly taught, sharing simple, traditional methods that reflect local farmers' environments, encouraging most importantly that they are able to produce their own quality seeds. Eighty five percent of the world's diversity of food plant species are still in the hands of small farmers who play a key role in maintaining biodiversity. ECHO Seedbank values this and follows these approaches which may be helpful for seed savers.

Collection: The seed bank has been collecting germplasm from farmers on lesser used crops, and also indigenous tree species for its tree nursery. Collection from farmers and from the wild is crucial.

Grow out: ECHO regenerates seeds in its grow-out section and also multiplies some types of seeds in partnership with local farmers when required.

Distribution: Both internal and external distributions are done. Demand depends on farmers' choices and distributions depend on the available quantity.

RECYCLING HUMAN WASTE IN OUR GARDENS?
Total sanitation and agricultural sustainability

Recycling human waste into agricultural fertilizer addresses two key issues that can raise the standard of living of marginalized communities in Africa: sanitation and food security. Inadequate access to sanitation is the main cause of diarrhoea, a major killer for children in this part of the world. Annual outbreaks of cholera due to contaminated surface and ground water from traditional pit latrines is a big challenge for marginalized communities. On the other hand food security at the household level is increasingly endangered as a result of decreasing soil fertility. African history has changed: land abundance, shifting cultivation and low population pressure are things of the past which supported agricultural practices wherein nutrient re-use was rarely maximized. New trends result in imbalanced nutrient cycles whereby more minerals leave farms in the form of agricultural products, by-products and erosion than what is returned back to the soil through manures and fertilizers. This is a serious challenge to future soil fertility and productivity. Safe practices used in Asia and Latin America can also be extended to Africa.

Learn from the posters in these links compost toilet and urine as fertilizer which present ways to safely recycle human excreta and urine into agricultural fertilizer and to address the issues of sanitation and soil fertility.

Edited By: Erwin Kinsey
Charles (Bonny) Bonaventure, Sophia Kasubi, Rose Dusabeyezu and Malvery Begley

Relations: There is mutual relationship between ECHO's Seedbank and seed beneficiaries who multiply seeds and return some to ECHO. This mutual relationship helps ECHO EA to enlarge its network members. For more information, request the seeds through this easeeds@echonet.org

Happy Martin shows Jackbean seeds to guest of honor at a recent SARI Agricultural Field Day

Reducing hunger and poverty across East Africa

ECHO East Africa was blessed to provide various Sustainable Agriculture trainings in collaboration wiht various organizations and institutions over the past five months. These trainings were designed for lead farmers to share what they were taught to fellow farmers, colleagues and people they serve in their surrounding areas. ECHO's mission and vision are to give knowledge to development workers across East Africa so that they can share with their community members to ensure they are able to reduce poverty and hunger. The past five months has enabled ECHO to deliver these trainings in Tanzania, Kenya, Uganda, Rwanda and Zambia. Trainings encompass sustainable agricultural best practices, appropriate technologies and seeds. At the end of training participants receive free packets of trial seeds and cuttings of Chaya for planting and multiplying in their areas. For more information's about these tailor made trainings offered by ECHO East Africa please write to ekinsey@echonet.org

End of June/early July, ECHO trained on food security options in Turkana with Share International partners (pictures above)

Do you need a consultation? (For pay or free): ECHO Impact Centers provide opportunities for other agencies to obtain consultations for free or pay, according to the nature of the request.