ECHO® Development Notes

Edited by Dawn Berkelaar and Tim Motis | July 2013 | Issue 120

Implementing Your Agricultural Project / Farm Plan: Farm Management Principles

by Brad Ward

EDN 118 featured an article that described the planning of an agricultural project. The article laid out a step-by-step process by which a wide variety of farms or institutional agricultural projects could be envisioned, evaluated, and ultimately articulated to help stakeholders maximize the stewardship of resources and to avoid unnecessary mistakes. Too often, these detailed and compelling visions for the future are placed into a three-ring binder, tucked away on a shelf and largely forgotten. If remembered, it is usually only as a fuzzy picture of what was hoped for. This is a real shame. The discipline and effort required to create the farm plan was just the first, and often most difficult, step in the important task of good stewardship and ongoing project management.

This follow-up article will share ideas of how to put your written farm plan to work. It will start with a brief outline of some basic project management principles. Next, it will cover a simple system used by the author to implement his farm plan. Finally, it will describe the process of ongoing planning and adjustment that is a vital part of diligent project stewardship.

Basic Management Principles

Being a good manager is kind of like being a good friend, a good neighbor or a good spouse. As in each of these relationships, every manager is unique, with a unique set of skills and gifts, a unique personality, unique weaknesses, and a unique environment. This simply means that there are many, many ways to be a good manager. Given that good management can express itself in so many ways, what are some common traits or principles that are present in the manager of a well-managed project?

The first common trait of good managers is that they have a **system to organize their work**. Systems range from very informal, such as a note pad with "to do" lists, to complex computer programs synchronized to a smartphone. The important feature of any such system is that it gives the manager a way to store and retrieve information outside of their head. The best of these systems not only store information, but provide a mechanism for prioritization and a means of reminding the manager about important time-sensitive tasks.

Figure 1. *A successful harvest is the result of carefully managing many tasks, both large and small. There is great joy in work well done!*

The next common trait is the **ability to communicate clearly to the team** the what, how, when and why of the tasks needing to be done. The more complex and/or sophisticated the task, the more thorough the explanation should be, and the more need there will be for additional written procedures to ensure that those charged with completing the task can enjoy success. The "why" component of communication is very important, and often overlooked. When team members know why a task is being done, they have a sense of purpose that often inspires them to creatively explore better ways of accomplishing that goal.

That creative energy can be captured and utilized most effectively by managers who have **systems in place for obtaining feedback**. Such feedback is used by a manager to make informed decisions about the direction that a project is headed. The information will often lead a manager to reprioritize assets and to re-communicate instructions and/or purpose. It may even lead to the re-visioning of the project.

Much has been written about good management, and many other factors could be addressed, but fundamentally good project management is about effectively receiving, sorting, storing and communicating information that directs the assets and energies that are available. These traits need not all be strong in one individual; a good manager knows his or her weaknesses, and seeks partnerships that bring balance.

A Simple System to Manage Agricultural Projects

Agricultural projects can be divided into two main categories. First are the projects that are ongoing or have regular cycles. Some examples are the care of animals, the maintenance of equipment, the planting

Featured in this EDN

ECHO is a global Christian organization that equips people with agricultural resources and skills to reduce hunger and improve the lives of the poor.

ECHO
17391 Durrance Road
North Fort Myers, FL 33917 USA
p: 239-543-3246 | f: 239-543-5317
www.ECHOcommunity.org

and harvesting of seasonal crops, and record keeping. Second are one-time, or infrequent projects. Examples of this kind of project are the building of a structure, the clearing of a field, the installation of an irrigation system and the purchase of a tractor. These are the kind of projects typically outlined in the farm plan.

On the farm where I worked in Honduras, we used a simple management tool to successfully help implement our project's farm plan and to manage our team's day-to-day activities. The system is flexible enough to be used for both of the above project categories, and consists of three simple, low-tech items.

1. Clipboards
2. Simple written operating procedures
3. Project Organizers / log sheets

Clipboards and the "Project Organizer" (or a simple log sheet) are at the core of both ongoing and one-time projects. Simple, written operating procedures are an added component to those tasks that are ongoing.

Clipboards

First, let's take a look at three uses of the clipboards. First, the clipboard serves as a convenient locator for the Project Organizers/ log sheets. Each major project has its own clipboard. Second, the clipboard serves as a visual reminder of the things that need to be addressed. Third, the clipboard is portable. It can securely hold instructions and operating procedures and can go where the work is, to provide a writing surface. Our clipboards are hung in two rows in the farm workshop. One row is for the clipboards with information on continuously ongoing projects, like moving chicken tractors and harvesting palm fruit. The second row of clipboards are for one-time projects like purchasing a new brush cutter and building benches for the greenhouse.

The clipboards that are used for ongoing work have the basic operating procedures taped to their surface. Clear packing tape is used to completely cover the paper on which the instructions are written, thus protecting them from wear and water damage. Laminating the pages would work equally well. Above the instructions, clipped onto the clipboard is either a "Project Organizer" or a simple log sheet, which serves as a place to record the tasks that have been done, including who did them and when, and also gives space for the team member to write a note. The Project Organizer worksheet is more thoroughly described below.

Operating procedures

The next component of this simple, low-tech system is the written operating procedures. These documents can use either the written word or pictures to convey the basic information necessary for the successful completion of a task. Their intended purpose is to remind a trained worker of critical steps, so that careless mistakes can be avoided. They need not be so comprehensive as to imitate a training manual. An example of an operating procedure might look like this:

Moving Chicken Tractors:

- Move chicken tractor to fresh pasture
- Clean and refill water tanks
- Fill Feeders
- Observe birds for stress or illness
- If wind is expected – secure tractor with rope and stakes

This list may seem overly obvious, but on routine tasks like this, it is a common mistake to forget to carefully observe the condition of the birds. Also, it may be calm now, but wind might be in today's forecast. It is helpful to have this reminder in the morning, while tending the birds, as opposed to the mad scramble that ensues after the chicken tractor has been blown over and the chickens are running all over the pasture.

Project Organizer worksheets

The third component of this simple system is the Project Organizer. A worksheet like this helps the project manager stay on track by providing a space for the itemization, organization, and prioritization of all of the project's details. The contents of the Project Organizer worksheet are:

- Project name
- Start and end dates
- Project purpose
- Task / activity
- Priority
- Cost
- Who will be responsible for the task
- Resources needed

Some of these items are obvious, such as "Project Name", but others warrant some additional comment. Stating the project's purpose on the project worksheet is a critical tool for helping communicate and reinforce the "why" aspect of the project. It is especially important to identify who and/or what will benefit due to the project's success. As an example, chicken tractors are not built simply for the love of creating poultry housing. They are built for the food resource provided by the eggs and meat that the birds produce, as well as the healthier pasture conditions resulting from the natural fertilizer and scratching activity of the birds. Also, the chickens eat the eggs and grubs of the parasites that infect livestock, thus reducing the need for expensive anti-parasite medication. Listing all of the beneficial outcomes on the Project Organizer worksheet serves as a reminder that we can, and should, anticipate good returns from our diligent labors.

Other important features of the Project Organizer worksheet are the start and end dates. Timelines and deadlines have proven to be critical in the success of many projects. The old saying, "If it weren't for the last minute, nothing would get done" can be all too true.

Lastly, identifying who will be responsible for completing the various tasks of the project is critical. When a project is first started, the team can be brought together and various activities can be assigned, with their associated deadlines determined. As the project progresses, team members can be reminded to check and see if they are on target. Also, as unexpected work invades a team member's day, the project manager can identify a task that might need to be reassigned or be given a new deadline. It is important that deadlines not be allowed to simply pass by, unattended to. If a deadline cannot be met, a new deadline must be given. Without strict adherence to this principle, both the team members and the manager will learn that the deadlines are meaningless, and good projects will languish.

A system such as this can be used to manage a wide variety of projects, including a small family subsistence farm, a community garden or even a complex commercial agriculture enterprise. An additional benefit of the system is that it helps with project record keeping. Once a project is completed, the information contained in the Project Planning Worksheets and work logs is easily transferred to bookkeeping and associated reporting systems. A system like this can also lead to better communication among team members, reduce the incidence of careless mistakes, keep project timelines on track and lead to a greater sense of purpose.

An important note regarding this or any system used to help organize and manage a project: It must be difficult to ignore! I used clipboards located at eye level in a

frequently visited workspace. The high visibility of the clipboards served as a constant reminder of the tasks at hand.

Ongoing Planning and Making Adjustment to Your Original Farm Plan

In this last section we will take a brief look at revisiting your farm plan and adjusting it to match up with new opportunities and unexpected obstacles.

Be sure to read through your existing farm plan at least once a year. In some cases, you may want to do so every six months. You will be surprised by the details that have slipped from view, and tickled by the items you were passionate about when the plan was developed, that now seem to be at cross purposes to the direction the farm is headed.

I recommend that before you take the time to revisit your farm plan, you spend a few hours recording the current status of your farm. This inventory should include the physical attributes, the human assets, the crops, the livestock and even a sketch of the environment—both physical and relational—that the farm is part of. Once this has been completed, open up the farm plan and see how the current state of the farm compares with the plans you made six months to a year before. In my experience, there will be some disappointment, but it will be far outweighed by a sense of accomplishment and possibly even a sense of wonder at the transformation brought about through the dozens of small tasks and the hundreds of baby steps that have been taken.

Now take some time to analyze each individual component of the plan. Is the component still important? Are the timelines still accurate? Do deadlines need to be adjusted? Are there new priorities? These general questions and ones more specific to your project will help you make necessary adjustments and determine new priorities. Next, go over the high points of your discoveries with your team. This is a time to celebrate and reflect. Share with them your observations, and get their feedback about your new ideas and priorities. Finally record the new directions, priorities and timelines in your farm plan document.

As we have seen, creating the farm plan is just the beginning. Don't make the mistake of making a farm plan just to let it collect dust on the shelf. Put your plan to use with simple, hard-to-ignore management tools that play to your strengths, and find partners to shore up your weaknesses. The process of thoughtful planning and the diligent execution of your plan are great ways to worship!

For Further Reading

Getting Things Done by David Allen (Read after I implemented the system described in this article, but helped me organize the projects on which I am currently working)

The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change by Stephen R Covey (A good foundational reference that played a major role in the development of my overall management style)

The E-Myth Revisited: Why Most Small Businesses Don't Work and What to Do About It by Michael E. Gerber (Helped form my approach to management by teaching me to think about things systematically, breaking them down into their simplest components and building easy to follow operating procedures)

The System of Crop Intensification

by Dawn Berkelaar

The System of Rice Intensification (SRI; see *EDN* 70, and http://sri.ciifad.cornell.edu/) has changed the way millions of farmers plant rice. The management practices used with SRI have also now been tried with many other crops. Here we present an update about crops that have demonstrated increased yields using similar management practices.

System of Rice Intensification – A Recap

To recap, SRI includes several main cultivation practices that stem from broad principles (more information is available in *EDN* 70):

1. Seedlings are transplanted early and carefully. With rice, seedlings are transplanted when only the first two leaves have emerged from the initial tiller or stalk, usually when they are between 8 and 15 days old. Careful transplanting of seedlings when they are very young reduces shock and increases the plants' ability to produce numerous tillers and roots during their vegetative growth stage. Grains of rice are eventually produced on the panicles (i.e. the "ears" of grain above the stalk, produced by fertile tillers). More tillers result in more panicles, and with SRI methods, more grains are produced on each panicle.

2. Seedlings are transplanted singly rather than in clumps of two or three or more. This means that individual plants have room to spread and to send down roots. They do not compete as much with other rice plants for space, for light, or for nutrients in the soil. Root systems become altogether different when plants are set out singly, and when the next practice is followed:

3. Wide spacing. Rather than in tight rows, seedlings are planted in a square pattern with plenty of space between them in all directions. Usually they are spaced at least 25 x 25 cm apart. The optimum spacing (producing the highest number of fertile tillers per square meter) depends on soil structure, soil nutrients, temperature, moisture and other conditions. The general principle is that plants should have plenty of room to grow. If you also use the other practices mentioned here, seldom will the best spacing be closer than 20 x 20 cm. The maximum yields for rice have been obtained on good soil with 50 x 50 cm spacing, just four plants per square meter.

Because of the wider spacing and single transplanting, SRI uses a much lower seeding rate than do traditional methods, saving up to 100 kg of seed per hectare. Yet yields generally increase greatly, because each plant produces so much more grain.

4. Moist but non-flooded soil conditions. Rice has traditionally been grown submerged in water. Clearly rice is able to tolerate standing water. However, standing water creates hypoxic soil conditions (lacking in oxygen) for the roots and hardly seems to be ideal! Rice roots have been shown to degenerate under flooded conditions, losing ¾ of their roots by the time the plants reach the flowering stage. This die-back of roots under flooded conditions has been called "senescence," implying that it is a natural process. But it actually represents suffocation, which impedes plant functioning and growth.

With SRI, farmers use less than half of the water they would use if they kept their paddies constantly flooded. Soil is kept moist but not saturated during the vegetative growth period, ensuring that more oxygen is available in the soil for the roots. Occasionally (perhaps once a week) the soil should be allowed to dry (e.g. to the point of cracking, if your soil is clay and prone to cracking). This will allow oxygen to enter the soil and will also induce the roots to grow and "search" for water. After all, when the soil is flooded, roots have no need to grow and spread in search of water, and they will lack enough oxygen to grow vigorously. *EDN* 70 includes a more thorough explanation of water management with SRI, including its benefits for plants.

5. Weeding. This can be done by hand or with a simple mechanical tool. Farmers in Madagascar find it advantageous, both in terms of reducing labor and of increasing yield, to use a mechanical hand weeder developed by the International Rice Research Institute in the Philippines in the 1960s. It has vertical rotating toothed wheels that churn up the soil as the weeder is pushed down and across the alleys formed by the square formation of planting. Many other weeder designs are also available. A manual published by WASSAN (Watershed Support Services and Activities Network), available on the SRI website from CIIFAD at Cornell, outlines what to look for in a good weeder, and shares information about a number of innovative designs for weeders: http://sri.ciifad.cornell.edu/countries/india/extmats/SRIWeederManual06.pdf

Weeding is labor-intensive—it may take up to 25 days of labor to weed one hectare—but the increase in yield means that the work will more than pay for itself. The first weeding should be done ten to twelve days after transplanting, and the second weeding within the next two weeks. At least two or three weedings are recommended, but another one or two can significantly increase the yield, adding one to two tonnes per hectare. Probably more important than removing weeds, this practice of churning the soil seems to improve soil structure and increase aeration of the soil.

6. Organic inputs. Organic matter enriches the soil with plant-essential nutrients and creates an aerated environment conducive to microbial life and root growth. Compost can be made from any biomass (e.g. rice straw, plant trimmings and other plant material), with some animal manure added if available. The source of plant biomass can be selected to optimize levels of certain nutrients in compost. Banana leaves, for instance, are high in potassium. Leguminous plants add nitrogen, and other plants such as *Lantana camara*, *Afromomum angustifolium* and *Tithonia* are good sources of phosphorous. Compost adds nutrients to the soil slowly and can also contribute to a better soil structure. It seems fairly intuitive that some form of nutrient input is necessary on poor soils if chemical fertilizer is not added. With huge yields of rice being harvested, something needs to be returned to the soil! Targeted application of compost (in the planting holes, for example) will make the most of a valuable but limited nutrient supply.

Together, these crop management practices can result in plants that are stronger, larger and more resilient, and in soil that teems with diverse microorganisms.

The System of Crop Intensification

The System of Crop Intensification (SCI) is the term being used to describe the principles of SRI when applied to other crops. In India, the term System of Root Intensification (another SRI) is sometimes used. These principles are:

1. Early establishment of healthy plants, with care taken to protect the root growth potential of seedlings.
2. Sufficient space between crops, as influenced by planting densities, to allow for optimal capture of soil nutrients and sunlight.
3. Enrichment of soil with organic matter, which slowly releases nutrients to crop plants and provides aerated conditions conducive to root growth and soil microbial life.
4. Controlled water management to avoid anaerobic conditions in the soil, a principle especially relevant to irrigated crop production.

These principles are the basis for the above-mentioned SRI practices, which can be adapted for other crops, local conditions and available resources.

Why do these crop management principles and practices work? It seems that setting up the proper environmental conditions helps plants reach their genetic potential. An organism's genotype is the actual genetic information of that particular species and variety of plant. With plant breeding, changes are made to the genotype, so that the resulting plants will have desirable characteristics (such as increased yield). Plant breeding is important, but is a slow and often expensive process. And if plants are grown under suboptimal conditions, they will not reach their full growth and yield potential.

Many farmers and scientists have been surprised at the extent to which a combination of improved management practices can alter a plant's growth and development, regardless of the variety that is used. This is an extremely important and encouraging idea, which seems to be holding true for many crops in addition to rice!

Table 1 in this article gives examples of crops now being grown using SCI, condensing information from a report by Norman Uphoff called "Raising Smallholder Food Crop Yields with Climate-Smart Agroecological Practices." (The report is available online at http://sri.ciifad.cornell.edu/aboutsri/othercrops/Other_Crops_Brochure_Uphoff101012.pdf)

The comparisons listed in the table are not from a single carefully controlled scientific experiment. Despite that, the substantial and multiple instances of yield increases illustrate the powerful effect that management practices can have on production levels. The column on the far right of the table includes links to manuals (or, in some cases, presentations) with more detailed information, where available. A more general booklet by an NGO in Ethiopia, Institute for Sustainable Development (ISD), can be found here: http://www.isd.org.et/Publications/Planting%20with%20space%20brochure.pdf

Conclusion

SRI surprised farmers and scientists. It seemed counter intuitive that fewer inputs (of seed, water, etc.) could result in vastly larger yields. Now we are perhaps surprised that the phenomenon goes beyond just rice. Careful, controlled management can have a dramatic impact on the development and growth of many different crop plants, ultimately resulting in much higher yields. That is good news for all, but perhaps especially for resource-poor farmers.

***Table 1**: Summary of crops that have been grown using System of Crop Intensification Principles. From a Report by Norman Uphoff.*

Crop	Location	Yields (tonnes/ha)		Notes	Planting Guide / Manual Available?
		Local Practices	SCI		
Wheat (*Triticum* spp.); System of Wheat Intensification or SWI.	Bihar State, India	1.6	3.6–4.6	Widespread adoption by tens of thousands in India! Seeds are primed before planting. Net Effect on Income: from Rs. 6,984 to Rs. 17,581	Yes
	Northern Ethiopia	1.8	4.7–10		
	Timbuktu, Mali	2.25	4.26–5.4	Spacing of 15 x 15 cm gave greatest yield response in Mali.	
	Western Nepal	3.74	6.5	These yields were using a modern variety.	
Mustard (*Brassica* spp); System of Mustard Intensification or SMI.	Bihar State, India	1	3–4.92	Costs of production have been reduced by half, from Rs. 50 per kg of grain to Rs. 25.	Yes
Sugarcane (*Saccarum officinarum*)	Hyderabad, India			WWF and ICRISAT launched "Sustainable Sugarcane Initiative" (SSI). Using a new propagation method, the sugarcane bud is cut from the stalk and planted in coconut pith packed into plastic trays.	Yes
Finger millet (*Eleusine coracana*)	Karnataka State, India	1.25–2	4.5–5	System is called Guli Vidhana (square planting). Two tools are used, one to stimulate tillering and root growth and another to break up topsoil. Spacing 45 x 45 cm; 2/hill	Yes
	Jharkhand State, India			Costs of production reduced by 60%, from Rs. 34.00 to Rs. 13.50.	
Maize (*Zea mays*)	Bihar State, India				Yes
	Northern India	2	3.5	Spacing of 30 x 30 cm (some 30 x 50 cm); direct seeded with 1 to 2 seeds/hill. Three soil-aerated weedings. More experimentation needed!	
Turmeric (*Curcuma longa*)	Tamil Nadu State, India			Spacing of 30 x 40 cm. Net income doubled, due to 25% higher yield and much lower costs of production. A variety of organic fertilization methods are used.	Yes
Tef (*Eragrostis tef*); System of Tef Intensification (STI).		1	3–5	Seed is traditionally broadcast. Tef seeds are very tiny (2500 in only 1 gram), but worth it to grow and transplant! Spacing of 20 x 20 cm. Yields could be almost doubled again with small amendments of micronutrients including zinc, copper, manganese and magnesium.	Yes
Pigeon pea/red gram (*Cajanus cajan*)	Karnataka State, India	0.35	0.6	Planting of 30- to 35-day-old seedlings spaced at 75 x 105 cm.	Yes
Mung bean/green gram (*Vigna radiata*)	Patna, India	0.625	1.875		
Lentils/black gram (*Vigna mungo*)	Uttarakhand State, India	0.85	1.4	1-2 seeds are sown per hill, with spacing of 20 x 30 cm, 25 x 30 cm or 30 x 30 cm (15 x 30 or 20 x 45 for peas). Two or more weedings are done, preferably with soil aeration. Farmers use a mixture of indigenous organic fertilizers. The production strategy is 'intensive.'	
Soya bean (*Glycine max*)		2.2	3.3		
Kidney beans (*Phaseolus vulgaris*)		1.8	3.0		
Peas (*Pisum sativum*)		2.13	3.02		
Vegetables	Bihar State, India			"Women farmers in Bihar have experimented with planting young seedlings widely and carefully, placing them shallow into dug pits that are back-filled with loose soil and organic soil amendments such as vermicompost. Water is used very precisely and carefully. While this system is labor-intensive, it increases yields greatly and benefits particularly the poorest households."	
Chilies		1.5–2.0	4.5–5.0		
Tomatoes		3.0–4.0	12.0–14.0		
Brinjals		5.0–6.0	10.0–12.0		

FROM ECHO'S SEED BANK

Job's Tears (*Coix lacryma-jobi* L.), a Resilient and Multi-purpose Grain

Job's tears is a 1 to 2 m tall grass thought to originate from Southeast Asia. It is found throughout most of the tropics, often in wild stands along ditches and streams. Depending on the variety, the seeds are yellow, purple or brown and are often tear-shaped; hence, the name "Job's tears." There are both soft-shelled grain (var. *ma-yuen*) and hard-shelled ornamental bead (var. *stenocarpa* and var. *monilifer*) forms.

Despite its minor crop status, Job's tears merits consideration as a food plant for human and animal consumption. It produces 2-4 tonnes/ha of nutritious grain rich in calcium and containing more fat (5.5%) and protein (15.8%) than rice and wheat (LuFeng et al., 2008). The sweet-tasting raw kernel is eaten as a snack (van den Bergh 1996). In various parts of Asia, it is steamed like rice and included in soups, beverages and desserts. Dough from Job's tears flour lacks gluten and, by itself, will not rise. For use in baking, therefore, Job's tears flour should be mixed with flour of other grains (e.g., 70% wheat with 30% Job's tears flour).

Flour made from Job's tears can replace maize flour in poultry feed (van den Bergh 1996). Animals can also be fed broken or whole grain. The green, vegetative plant material can be used as forage. Job's tears produces about 13.9 tonnes of very palatable, green biomass per hectare (FAO).

Job's tears may be intercropped with maize or sorghum as a supplemental grain or as an alternative in case the main crop fails. Used in these ways, it enhances the resilience of farms in the warm, humid tropics. It has very few pests and diseases, requires minimal care, and can be productive on waterlogged, acidic and lateritic soils (Pandy and Roy 2011). In the tropics, it is found up to 2000 m. It is also reported to have various medicinal uses.

Sow seeds (still in the shell) at the beginning of the rainy season. Plant them 5 cm deep, roughly 30 cm apart within rows spaced 40-60 cm apart (FAO, van den Bergh and Iamsupasit, 1996). When sown as an intercrop, the spacing is typically more random. At 4-6 months after sowing, depending on the variety, the grain is ready for harvest and is threshed/husked with the same tools as are used for rice. Threshed grain is dried in the sun on mats. Stubble left in the field will tiller, producing fresh leaves that can be used as animal fodder.

See *Asia Notes* 13 (in the Asia section of ECHOcommunity.org), and the references below, for more detailed information. ECHO's seed bank can provide trial packets of a soft-shelled grain variety of Job's tears called Mekong Mix to those registered with ECHOcommunity.org as active development workers (see the website for information on how to register).

References

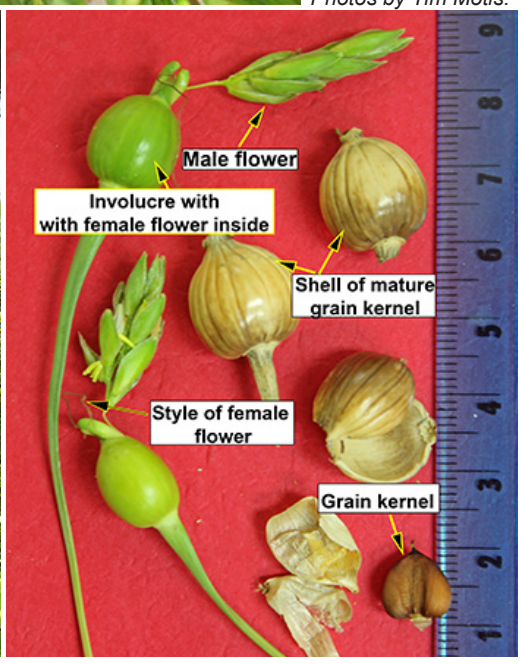
Asia Notes 13: Found under "Asia Impact Center" on ECHOcommunity.org

FAO. Coix lacryma-jobi L. *Grassland Species Profiles*. FAO/C IAT Collaboration on Tropical Forages.

http://www.fao.org/ag/AGP/AGPC/doc/Gbase/DATA/PF000205.HTM.

LuFeng, J. YanMei, Y. CaiXia, and H. YiFan. 2008. Analysis and evaluation of the nutritional components of Chinese Coix lachryma-jobi kernel resources. *Acta Nutrimenta Sinica* 30:102-105.

Pandey K.C . and A.K. Roy. 2011. Forage Crops Varieties. *Indian Grassland and Fodder Research*



Photos by Tim Motis.

UPCOMING EVENTS

Tropical Agricultural Development II: Impact Options

August 19 to 23, 2013
ECHO Global Farm, North Fort Myers, FL

This course takes a more in-depth look at some of the topics introduced in TAD I. It is structured to benefit those who have been involved in agricultural development for an extended period of time. Themes for the week include: sustainable farming, integrated systems for small-scale farms, and underutilized plants for health and nutrition. Sharing of ideas and experiences by class participants and ECHO staff add to the richness of the information transferred in this class.

Caribbean Regional Conference

October 29 to 31, 2013
Santo Domingo, Dominican Republic

Join us for the 1st Caribbean Regional Conference. This event, offered in Spanish, Creole & English, will be a unique opportunity for networking, sharing ideas and problem solving. We are pleased to welcome the following speakers at the event:

Carlos Disla, Floresta (Plant with Purpose) Country Director for Dominican Republic & Guy Paraison, Floresta (Plant with Purpose) Country Director for Haiti, co-presenting on "Shared challenges, shared solutions--sustainable farm strategies for Haiti and the Dominican Republic."

Pánfilo Tabora, Tropical Crops Specialist from E.A.R.T.H. University, Costa Rica.

Tannia Lascano, HCJB Global, Ecuador, presenting on "Clean Water, Hygiene & Sanitation."

Hiran & Flor de Leon, presenting on "Community Health Evangelism/Comprehensive Community Transformation."

We still have openings for afternoon workshop presenters. If you would like to share about your work in agriculture, such as a technique that has worked well for you, a crop that is showing promise or an appropriate technology that is making an impact on your community, please fill out a presenter form on the event page on www.ECHOcommunity.org.*

2013 ECHO Asia Agricultural and Community Development Conference

October 1 to 4, 2013
The Empress Hotel, Chiang Mai, Thailand

This fourth ECHO Asia Agricultural and Community Development Conference will include plenary sessions and afternoon workshops October 1 to 3. An interesting selection of post-conference tours of local agriculture and community development projects will be offered on October 4. Confirmed plenary speakers include:

Dr. Manny Palada, a retired international horticulturist who previously worked at AVRDC/The World Vegetable Center in Taiwan as a Crop and Ecosystem Management Specialist, on "The Progress in Moringa Research and Development with a Focus on Asia." Manny will also offer afternoon workshops related to moringa processing and utilization, affordable micro-irrigation systems for vegetable production and vegetable grafting techniques for tomato, eggplant, sweet and chili pepper.

Dr. Doug Fraiser (SIL International), **Melanie Edwards** (Lilypad, Myanmar) and **Ken Thompson** (CAMA, Cambodia), each on the theme of "Getting Started" related to their individual experiences in establishing agriculture and community development work in Southeast Asia.

Boonsak Tongdee, Director of the Upland Holistic Development Project (Mae Ai, Thailand), on "Offering Holistic Development and Holistic Ministry to the Poor of Various Faiths in Northern Thailand."

Geoffrey Wheeler, founder of the Center for Vocational Building Technology (Udon Thani, Thailand), on "Appropriate Construction Materials and Technologies for Community Development."

Daycha Siripatra, founder of the Khao Kwan Foundation (Supan Buri, Thailand), on "Conservation and Breeding of Local Varieties of Rice: The Khao Kwan Model."

Drs. Ricky Bates (Associate Professor at Penn State University) and **Abram Bicksler** (ECHO Asia Impact Center), on "Small Farm Resource Centers: antiquated or adaptable?"

Rick Burnette, ECHO, on "A Toolkit of Resilient Agricultural Responses to Climate Change in Tropical Asia."

Registration information is available from the Asia Impact Center link on the www.ECHOcommunity.org homepage. Please note that rates will increase on September 1.

ECHO International Agricultural Conference

December 10 to 12, 2013
ECHO Global Farm, North Fort Myers, FL

This year marks the **20th Anniversary** of the ECHO Conference in Fort Myers! In light of this being a milestone event, the theme for this year's conference will be **Impact Options for Lasting Change** focusing on some "tried & true" methods and highlighting their progress over the years. Plenary speakers will include:

Danielle Nierenberg, Co-Founder of FoodTank: The Food Think Tank, presenting on "Cultivating a Better Food System."

Keith O. Mikkelson, Founder & Executive Director of Aloha House, Inc. & author of *A Natural Farming System for Sustainable Agriculture In the Tropics*, presenting "The Aloha House Story: Serving the Community Through Agricultural Extension."

Dr. Ricky Bates, Penn State Professor of Horticulture, presenting "Small Farm Resource Centers: Antiquated or Adaptable?"

Ruth Tshin, ECHO Asia, "Practical Nutrition."

Dr. Norman Uphoff/Dr. Erika Styger, Cornell University, "System of Crop Intensification."

New! Suggested conference tracks for those new to the conference and for special interest workshops. Post Conference Workshops will be offered Friday, December 13.*

**More information and registration information for each of these courses and conferences can be found at ECHOcommunity.org (follow the "Events" tab in the left column).*

FROM OUR REGIONAL IMPACT CENTERS

ECHO Asia

The **latest issue of *Asia Notes*** (Issue 17, May 2013) contains the following articles:

- Sustainable Decentralized Water Treatment for Rural Developing Communities Using Locally Generated Biochar Adsorbents (by Josh Kearns, MS)
- An Introduction to Bokashi Fertilizers and Soil Amendments (by Rick Burnette)

The issue is online at ECHOcommunity.org/?page=AsiaNotes

A **leadership transition** has taken place at the ECHO Asia Regional Impact Center in Chiang Mai, Thailand. Rick and Ellen Burnette have moved to ECHO's Florida campus, where Rick is the Director of Agriculture. Abram Bicksler is now Director of the ECHO Asia Regional Impact Center, joined by Rebecca Garafano as Office Manager. Boonsong Thansrithong (Toh) is the ECHO Asia Agricultural Program Manager.

The ECHO Asia Impact Center was recently a participant in **John Deere's Inspiring Leadership Program**, which provides free consulting services for NGOs in the developing world. Three John Deere team members worked with the ECHO Asia staff from May 6 to May 30, and spent their time evaluating seed bank decision making and inventory management, creating templates and toolkits for the seed bank's use, and strengthening the EAIC's overall seed bank operations.

A **new article** entitled "Strengthening informal seed systems to enhance food security in Southeast Asia" has been published in the *Journal of Agriculture, Food Systems and Community Development*. The article highlights some of the research conducted by the EAIC team from 2010-11 and funded by HortCRSP (USAID).

ECHO East Africa

Two new documents from the East Africa Impact Center are now posted on ECHOcommunity.org. One is a Best Practices Note (BPN) about working with pastoralists. The other is the first issue of East Africa Notes (EAN) with a focus on conservation agriculture and an article about the 'Oyster nut' plant. Erwin Kinsey, Director of the East Africa Impact Center, commented, "These have been written to generate sharing from our readership. Please review these and respond with your own experiences on the groups and/or forums areas of ECHOcommunity.org."

Work continues on new publications and seminars. EAN #2 will focus on soil and water conservation and agroforestry technologies. A dialogue has begun around conducting an East Africa-based seminar on Holistic Management late this year to be facilitated by the Savory Institute, details of which are not yet fixed. A conference on best development practices in pastoralist areas is now being planned by ECHO East Africa for February 2014. Please note other trainings and events posted on ECHOcommunity.org.

The Impact Center is currently growing out green manure/cover crop seeds and **designing a cold store for a small seed bank**, in order to make gm/cc and other under utilized seeds available to ECHO membership in the longer term. Currently the East Africa Impact Center provides limited samples of seeds only to members within Tanzania, since they are not yet able to comply with inter-regional phytosanitary regulations.

Erwin Kinsey also shared, "If there is interest in your area to engage ECHO in some type of training for which funding is available or participants can pay, do not hesitate to contact us and engage us!"

PLEASE NOTE: At ECHO we are always striving to be more effective. Do you have ideas that could help others, or have you experimented with an idea you read about in EDN? What did or did not work for you? Please let us know the results!