



RTC-TH Jul 2013 Update

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Community-based environmental education for the self-sufficiency and sustainability of small rural family farms

ชุมชนตามสิ่งแวดล้อมศึกษาเพื่อการพึ่งตัวเองและยั่งยืนบนพืชนาขนาดเล็กครอบครัวฟาร์ม

You may post questions / comments to the Discussion area of our website

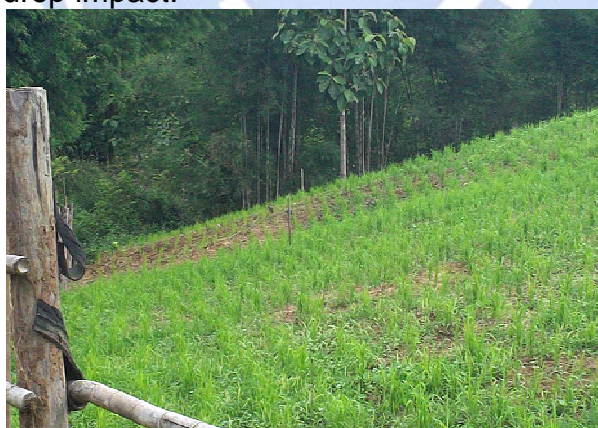
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It's Rice Planting Time



These photos show the dry land sticky rice crop we planted on our Hill Top detached farm plot. We used the same no till planting method here as we did on the main farm. Even though we didn't plow, we planted the rows across the slope following the contours. The stubble and organic residues from last year form the mulch to protect the soil from rain drop impact.



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These views are south of the Nam Yang River (and east of the bridge at Ban Na fa). The paddies and the cleared land on the hillside belong to other neighbors in Ban Na Fa. Some people still have one more crop of corn to harvest before they can replant the land with rice.

This is our favorite time of the year. There is something special about the greening of the countryside with new rice sprouting. Nearly everywhere you look,

rice paddies are being transformed from gray-brown mud to patch quilt patterns of green. 🌐

Mosquito Wars



It's an annual ritual: rainy season = mosquito season = mosquito abatement. The suppression team geared up and began spraying house to house, village to village. It is a short-term solution. For the long-term, there is an ongoing public education program to eliminate possible mosquito breeding sites. At elementary schools, students patrol schoolyards armed with *Bt-i* (*Bacillus thuringiensis v. israelensis*) tablets to treat enclosed ponds / pools that cannot be drained. *Bt-i* does not harm people, pets, birds, fish or plants. It specifically targets mosquitoes. 🌐



Ideas for Thai Education Reform

Thailand is moving from an economy based stage of cheap labor to one of higher costs and increasing technology. But the cheap labor of the initial industrial success reaches a plateau of production. There are only 3 shifts in a day, and the limits to production are met by automation. However, Thai technical education cannot meet the growing demand.

Modern education systems were geared to prepare rural agricultural workers for urban industrial life. This primarily meant disconnecting people from the natural sunrise/sunset pattern to the artificial schedule of the time clock. Sitting still in the classroom prepared them to sit at factory work stations.

The coming of the AEC (Asian Economic Community) in 2015 has drawn attention to the shortcomings of the Thai education system. Many of these are common to countries around the world. From our perspective and teaching experience in various countries we see the following as the critical deficiencies:

- A general disconnect between the classroom and society;
- Ineffective English language teaching for practical use in the work place. Teaching to examinations rather than practical skills;
- Lack of effective training in critical thinking and decision making;
- Subject segmentation rather than the integration of subjects in problem solving.



We developed our Community-based Education (Cb-E) program to address and resolve these deficiencies. The aim is to supplement (not replace) the traditional school system. That bureaucracy is too deeply entrenched to reform or replace quickly. The family is basic education unit in Cb-E. The curriculum is to apply classroom lessons to practical community service projects. This empowers students to connect the classroom to the community. Rather than paper exams, we advocate tangible proof in the form of a successfully completed community service project.

Traditional schools could make a simple modification: provide students with an optional graduation requirement to demonstrate the use of classroom lessons by completing a community service project. The change is a very simple one. Students can graduate as normal. Or they can graduate with an added notation of having completed a practical community service project. Prospective employers can look at



Agricultural work is closely tied to nature.



Manual factory labor built the Thai economy

the project as a way to judge the effectiveness of the student's comprehension and practical use of knowledge.

Foundation Skills	
A. Reading	1. Locate information
	2. Understand information
	3. Interpret information
B. Writing	1. Communicate thought in writing
	2. Communicate ideas in writing
	3. Communicate information in writing
	4. Create a letter
	5. Create a brochure
	6. Create a report
	7. Create a map
	8. Create a story
C. Mathematics	1. Perform basic calculations
	2. Apply a mathematical problem
	3. Choose the appropriate mathematical technique
D. Listening	1. Follow a verbal message
	2. Respond to a verbal message
	3. Respond to a verbal message
E. Speaking	1. Express ideas
	2. Communicate orally
Thinking Skills	
A. Creative Thinking	1. Generate ideas
	2. Generate ideas
B. Logical Reasoning	1. Identify cause and effect
	2. Generate alternatives
	3. Consider consequences
C. Problem Solving	1. Recognize a problem
	2. Identify a goal
	3. Generate ideas
	4. Select a plan
	5. Execute a plan
	6. Evaluate a plan
D. Grouping	1. Identify a group
	2. Generate ideas
	3. Consider consequences
E. Evaluating	1. Use rules, principles and standards to judge the quality of an object or idea
	2. Apply rules, principles and standards to a problem

Personal Skills	
A. Responsibility	1. Accept responsibility
	2. Accept responsibility
B. Self-Management	1. Manage time
	2. Manage time
C. Sociability	1. Develop interpersonal skills
	2. Develop interpersonal skills
	3. Develop interpersonal skills
D. Information Management	1. Access information
	2. Access information
	3. Access information
E. Problem Solving	1. Identify a problem
	2. Identify a problem
F. Work Place Competencies	
A. Teamwork	1. Work with others
	2. Work with others
	3. Work with others
B. Communication	1. Communicate
	2. Communicate
C. Information Management	1. Access information
	2. Access information
D. Problem Solving	1. Identify a problem
	2. Identify a problem
E. Evaluation	1. Use rules, principles and standards to judge the quality of an object or idea
	2. Apply rules, principles and standards to a problem

Project evaluation takes place using two sets of checklists: SCANS and academics. The SCANS lists developed by the US Dept of Labor cover workplace competencies. There are 4 areas covered:

- Foundation Skills (reading, writing, math, listening, and speaking);
- Thinking Skills (creative thinking, decision making, problem solving, mental imaging, and knowing how to learn);
- Personal Skills (responsibility, self-esteem, sociability, self-management, and integrity/honesty);
- Work Place Competencies (resources, interpersonal skills, information, systems, and technology).

Academic evaluation is in the realm of the traditional school system. That will vary by country, but should be applied with an inter-disciplinary approach in mind. The students identify the key subject matter critical to their project. They set the tone by clearly defining the problem and identifying the academic tools needed to solve it. Their ability to effectively solve the problem relies on their understanding of how the tools work together.



The Habitat Garden was a student community-service project based at Ban Na Fa Elementary School. Its purpose was to educate students and villagers to protect local pollinators and the local ecosystem. Students researched the local pollinators and supporting plants and conditions needed for the garden.

For example, creating a habitat garden at Ban Na Fa Elementary school involved geography, math, biology, botany, and chemistry. Students worked in teams. This involved elements of leadership, language / communication skills as well as technology (handling tools). The faculty wanted to get students to use English in their daily lives. In summer 2005, a group of American volunteers arrived and spent a week speaking English relevant to supporting lessons for the Habitat Garden. 🌍

Traffic in Ban Na Fa



Sunset along the road going to our farm.

The road by our farm is relatively quite. It makes for a nice after dinner walk. The traffic is normally light, but we thought it might be interesting to share some of the sights of vehicles on the road crossing the bridge at our village. The majority are motor bikes carrying 1-3 people. Folks ride to tend fields or go hunting. 🌐



A hunter with his two dogs



The "iron buffalo" walk behind tractor.



An "etan", home built truck using an iron buffalo motor.



Motor bike used for bottled water delivery.



More Kubota tractors are appearing in the landscape

Food From Our Farm

Farm fresh fruits are in abundance at our table during the rainy season. Ripening on the farm are rambutan, mangoes, dragon fruit, lemons, limes, and pineapples. These are joined by papaya, guavas, jackfruit, and mangosteen from our home garden in the village.

Meanwhile, durian and avocados come from the market. These fruit trees on our farm are still immature and not bearing fruit yet.



Pi Oi and Sunisa still have their thriving long an orchards. These are well-established and survived the dry season drought very well. The rains have been a boon to them. The fruit are maturing well and the sisters are hopeful of a bountiful harvest. This is the one major crop the family grows for sale.

Mom had the foresight to plant one garden area with Thai egg plants with an eye toward “value added”. Many farmers grow this as a dry season crop. Mom timed it so her Thai egg plants were bearing fruit at the end of the dry season. She was able to harvest and sell her crop when the supply of this vegetable was nearly “zero” in local markets. She was able to earn 2 or 3 X the normal price for her efforts. It’s all about timing. This year she timed it very well.



One of the six types of bananas from our farm



Banana buds and our first farm ripened pineapple



Farm fresh mangoes for dessert



Jackfruit ripening in the backyard garden

A real treat from the farm came in the form of what many consider “forest food”. Cousin Luck collected a large wasp nest from our orchard. This is a northern Thai delicacy called “*thor*”. The nest is steamed to cook the larvae. Then they are individually removed from the nest. A quick pinch and tug on the head cleans the larvae for eating. Once gutted, they are usually eaten with a dab of sticky rice (with some salt to taste).



The sting of the defending wasps is potent for anyone trying to take the hive. A single sting on your head can turn all of your hair white!

This northern Thai delicacy may not be for everyone. But that only means more will be left for our family members who do relish it. For me, well, let's just say that I generously give up my share.



As avocados come into season, we can make guacamole, a family favorite. Unfortunately, we can't find Mexican style corn chips. So we make do with what we can find in the Tesco-Lotus in the provincial capital. This store is the closest thing to something like a Target in Los Angeles.

Well, the end result is something close enough to let our memory take over. That seems to do the trick. We enjoy the treat and life is good!



There is no shortage of food in our house. But when Pi Oi wanted to practice cooking duck, she had trouble finding a source for fresh ducks. Several villagers raise ducks. However, they don't sell ducks for meat. Instead, they keep their ducks and sell the eggs.

So during one of our trips to the provincial capital, we were able to buy some duck for her to practice her culinary skills. Her goal is to make and sell a Thai duck noodle dish. The sample she cooked for us passed with flying colors. The flavor was something unavailable in Thawangpha. The portion seemed just right; we were full. Now the question is to monitor costs, time, etc. to set a price that will allow her to make a reasonable profit and have margin for changes in the market place. There is no launch date set for her new venture, but we are waiting in anticipation.

In preparation for *Wan Khao Phansa* (when Buddhist monks retreat to the temple of their ordination for the rainy season), the family gathered to make *khanom tien*.

There are many variations of the recipe for this Thai dessert. The wrapper is banana leaf with a light coating of oil to keep the wrapped filling from sticking. The filling is a combination of rice flour cooked to a gelatinous state and flavored mung beans. Minced pork can be added



and seasoned to taste. The mung bean doughy paste is rolled into a ball about 2.5 cm in diameter. Add a pinch of the rice flour gelatin. The mixture is put onto an oiled banana leaf, folded, and set aside for steaming. We hope you enjoy the photos showing how *khanom tien* is made. 🌿



Clearing the Village Storm Drains

Clearing and maintaining the village storm drains are done on an “as needed” basis. The sediment build up over the years warranted a general cleaning. Some of the cement drain covers needed replacement.

Life is basic here. No fancy equipment and machines; just simple hand tools and manual labor. After the drains are cleaned, new cement covers are made in the street. The job is done in a few days. 🌐



Storm Damage Recovery

It was nearly a month since an intense wind storm inflicted damage to our business property in town. Some roof tiles on the back service building were blown off. The rain and winds combined to uproot a large long an tree in the back yard.



Local government agencies have emergency funds to help people recover. Few people have property insurance. Government assessors came by to inspect our damaged building. They completed their calculations. A few weeks later, allocated funds arrived and we commenced repairs. The photos on the top left show the before (top) and after (left photo). The worrisome part is getting up on the roof to replace the

broken or missing tiles.

The recorded winds across the highway at the weather station were noted as “calm” throughout the 24-hour period of the storm. It is hard to imagine how “calm” winds could remove roof tiles and flatten the neighboring business selling decorative garden furnishings and plants (left photo below).



Our neighbor rebuilt, but smaller than before. It seems she took the opportunity to “re-invent” her business and reduce operating costs. Consider the simple fact that living plants need time for care. And if they aren’t sold, grow and get larger, requiring even more care. But eliminating the plants, she is left with more durable wares that don’t require watering, pruning, repotting, etc. 🌐

Our New “Klunkworks” Home



Our move to Ban Na Fa has been drawn out in stages. This was not so much by plan. It was dictated by the variable availability of diverse resources: funds, site prep, labor, transportation, etc.

The “Klunkworks” is our pet name for our computer workstation dedicated to our photography and lesson creation efforts. We isolate this workstation from the Internet to avoid the risk of viruses and malware infections. However, the Internet is also a key resource. So we dedicate another computer for the risky

work of information gathering on the Internet.

This workstation is at the heart of all our photo work, reports, and lessons. The work schedule starts organizing and archiving all daily / weekly photos. The monthly update report is the only set scheduled item. The minimum is one update a month. Sometimes, if enough materials are available, a second report may be prepared. In the past, special events (e.g. major flood or fire, etc.) may prompt supplementary reports.

Most lesson ideas, especially for emergency preparedness and EmComm, begin with a clear problem. The focus of the lesson is to solve the problem using no tech / low tech (and hopefully no cost / low cost). Our motivation for this approach is simple: Easier adoption in rural areas. It is also consistent with our belief that money is NOT the solution. The reality is that some money is needed. But we push our creative problem solving to the limit by striving to find budget minded solution sets. Much of our inspiration comes from historical examples of the lower tech past.



The RTC-TH library is a key reference resource. The yellow oval on the right shows the location of the Klunkworks work station and Internet computer.



Computer simulation of GTA panel visibility from the air.

A case in point is the latest 3-part series on non-radio ground-to-air (GTA) signals. These devices are definitely not high tech. They date back several decades, so are clearly not new. All we have done is to retrieve them, dust them off, and present them for use to impoverished rural villagers in remote areas. We hope they will be empowered to become more effective EmComm operators if / when the need arises. 🌐

New EmComm Lessons Available

We have always stated “It is better to network than to not work.” This example began Nov 2012 when we were invited to attend MyGAREC 2012 in Malaysia. We presented MEWS (Mobile Emergency Weather Station). The idea was to train ham radio operators in remote areas to provide weather data from a disaster area. MEWS gained attention and support.

Feedback from MyGAREC 2012 reaffirmed our focus on EmComm (emergency communications) for remote rural areas. This led us to develop GECO (Grassroots Emergency Communications Operations). Work on GECO proceeded slowly. It took a June 2013 e-mail from Switzerland regarding an event in India. Johnny Tan (9M8DB) was attending GAREC 2013 in Zurich. He heard news of the disaster in northern India and related helicopter crashes in the mountains. Recalling the MEWS presentation last year, he asked us if we wanted to send a comment he could share at the conference.

We responded with a short presentation on the difficulties of air rescue operations in remote areas. In the process, we came across a statement by Basappa

We completed the first draft of the presentation in about 1 ½ weeks. While (VU2NXM) stating there were few hams in the region of the recent crashes. However, CB radio had been de-licensed in India. Basappa advocated that rural villages should use CB radio for emergency wireless communications. We exchanged ideas by e-mail and agreed to collaborate on some lessons. We wanted to combine non-radio ground-to-air signals with CB radios. At the same time, we wanted to improve education and emergency communications in remote rural areas.



The RTC-TH quickly drafted an unsolicited paper and to our various ham radio contacts as well as ham radio organizations in India. Jayu (VU2JAU) responded with a request to print the paper for Hamfest India (HFI) 2013 that he was organizing for September. Another flurry of e-mails with Basappa revealed he planned to attend HFI 2013. More e-mail exchanges resulted in Jayu accepting our offer to make a presentation on “Next Gen EmComm: GECO” at the upcoming conference. waiting for Basappa's feedback, we spun out 3 shorter lessons on GECO non-radio ground-to-air signals. The lessons are available free on our website www.neighborhoodlink.com/RTC-TH_Tech/pages. Scroll down the left column to the section “RTC-TH EmComm / Next Gen: GECO.”

These are the first of more GECO lessons to come. As volunteers, we do not have a production schedule. We do all of this in our spare time. 🌐

