



RTC-TH Jul 2012 Update

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

ชุมชนตามสิ่งแวดล้อมศึกษาเพื่อการพึ่งตัวเองและยั่งยืนชนบทขนาดเล็กครอบครัวฟาร์ม

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

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Some of Our Farm Fresh Fruit

The rainy season brings with it an increasing variety of farm fresh fruits to our table. The other day, a couple of baskets from the farm showed up at our town location: Dragon fruit (both red and white varieties), fresh limes, green mangos (a great refreshing sweet snack). We also have papayas and bananas ripening on the trees, so they will be flowing to the kitchen soon. Reducing the distance from farm to fork was a key reason for moving from Los Angeles to Thailand.



Fresh fruit arrives in town from our farm



We have both white and red dragon fruit.

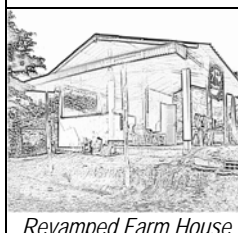


Fresh limes!



Green mangos.

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Fresh bananas and an extra large mango



Kluay nam wa, common local banana



Cut fresh from the roaster into bite sized pieces



One of the key advantages of living in rural northern Thailand is our own farm fresh fruit. There are many suggestions to include several servings of fresh fruit for a healthier diet. This is easy for us. And the taste is so great when it's fresh from the farm rather than what is found in most US markets.

The extra large green mango comes from a variety Saifon got from an agricultural exhibition we attended in 2009. We are still waiting to get the fruit from avocado and breadfruit plants we bought about the same time.



Peeled, flattened, roasted

Kluay nam wa, a common local banana is found on our farm and at our town location (2nd photo on left). When yellow, it is ready for eating. Pi Oi makes a snack of these. She peels and flattens the bananas. They are roasted at 250°C / °F for about 30 minutes. When done and still warm, she cuts them into bite-sized pieces for serving.

This can be served as a snack, appetizer or dessert. These bananas came from a garden bed next to the driveway only 25 m from the kitchen. 🌱

2012 Rainfall Score Card

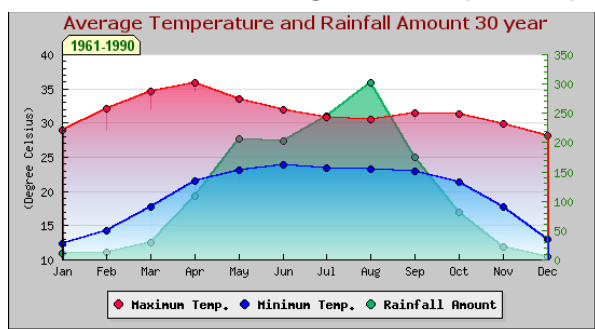


Image from the internet: educational fair use clause

June marks the mid-year point for our annual rainfall score card. The chart on the left shows the 30 year climate summary for Thawangpha. The table below shows the numerical data (e.g. average rainfall and number of rainy days for each month) for the 30 year average (climate summary), for 2011 and the score card for 2012.

30 Yr Average			2011		2012	
Month	Rainfall (mm)	Rainy days	Rainfall (mm)	Rainy days	Rainfall (mm)	Rainy days
Jan	11.0	2	1.52	3	17.78	3
Feb	12.6	2	14.48	2	1.01	1
Mar	29.2	3	69.33	6	31.24	2
Apr	108.0	9	98.55	10	163.32	8
May	206.2	17	208.53	22	205.21	10
Jun	202.4	17	396.20	17	100.31	10
Jul	244.1	21	340.87	19		
Aug	302.3	22	321.05	18		
Sep	175.6	16	371.08	20		
Oct	80.4	9	147.57	7		
Nov	22.7	4	8.12	2		
Dec	5.9	1	0	0		
Total	1400.4	123	1977.3	126		

Blue Box = northern Thai SW Monsoon Season
Green shading = data above 30 year average for Thawangpha
Red shading = data below 30 year average for Thawangpha

The June numbers are in, and were posted to the table. To date, the Jun monthly rainfall is lower than the 30 year average. The number of rainy days in Jun is also lower. The accumulated rainfall total for 2012 is 518.87 mm which is 91% of the 30 year average.

Some provinces to the south of us have experienced flood events already. No one knows what is in store for the rest of the rainy season. The 2011 floods may or may not be repeated. But various post flood reviews point out the obvious. There is so much

water flowing south to the Gulf of Thailand and the drainage system in and around Bangkok is inadequate. In 2012, officials plan to hold more water back farther north of Bangkok by allowing fields to be flooded acting as "monkey cheeks" to delay the flow south. They hope to gradually release the water at rates better matched to the drainage system in and around Bangkok.

Although flooded factories in 2011 are back in operation, some companies have decided the flood plain is not for them. Some shifted production to other facilities in different parts of Thailand. Others opted to disperse operations to their factories in other countries. Not all companies had so much faith in the Thai government's new flood programs.



Thai Meteorological Dept, Thawangpha Office

Pak Huek: From Tree to Table

This is a more detailed follow up to an article we did in Apr 2011 “Leaves Are ‘Tree Eats’”. Pi Oi planted this *Ficus lancor Buch* both for food and shade. To the uninformed, it is just another tree. About the only other notable thing about it is that large red ants weave nests in the tree by using its leaves in the branches. Some Thai people seek out the nests to get the *kai mot* (ant eggs) which they consider a delicacy.

The Thai ladies in our family treasure the leaves and buds of this tree to make *pak huek*. Since they love it so much, we thought it would be interesting to see how they make this dish. In our family, this is a 2-day, 2-step preparation process. The first chance to pick the young tender leaf tips and buds is at the start of the hot season (as early as Feb).



The Ficus lancor Buch in front of our business.



The reddish new growth and buds are the sign to pick.



Poi selects the tender leaf tips and buds.



Broken stems exude a white sticky sap.



The fresh picked leaves and buds are washed.

Pi Oi is the best cook in our family, so she takes care of the preparations to make *pak huek*. She starts by washing and rinsing the leaves and buds in cold water to clean them of the sticky sap and dust.

As with most cooking in the world, many common dishes have no written recipe. People learn by doing and then tweak things by taste. There are no “standards” as such. We grow up learning what things should taste as children. As adults, we can stick with “mom’s” cooking or adopt “new standards”. When learning to cook Thai foods, non-Thais start with a clean slate and use their acquired tastes as a starting point. For me, this plant is bitter when it is raw, slightly less bitter when cooked, and rather pleasantly even less bitter when finally served. But that’s getting ahead of things a bit.



After rinsing, the leaves are put into boiling water; some salt is added, and let boil for 10 minutes.



The stems should be on the slightly soft side of firm. Then remove the leaves and buds from the water.



A cold water rinse, thorough wringing, and then setting everything aside overnight in the fridge.



The next day everything is chopped fine, green onions, cilantro, chilies added and pounded together to make a somewhat loose, damp mixture suitable for northern Thai finger food.

The RTC-TH EmComm System

Emergencies can quickly reduce even the best made plans to scratch paper. As in warfare, plans can be made and practiced repeatedly. But once the reality hits, most plans go out the window and you need to deal with the chaos of the moment.

Like many of the group travel activities we've led to remote areas, flexibility is essential to maintaining your sanity and ability to function effectively. So we tried to forge a flexible emergency communications (EmComm) system.

Five factors were critical to revising our thinking about EmComm in Thailand:

- The language barrier;
- No "third party traffic" is allowed in Thailand;
- The government emergency response hierarchy;
- The geography of our stations;
- Limited radio equipment on hand and the limited radio supplies in Thailand.

Thai, like other Asian languages, is tonal. Adding to the complexity is the northern Thai vs. Central Thai (the national standard). If you don't speak Thai, everything you hear Thai people speaking sounds Thai. One thing in our favor: English is the international language of radio telephony. So we can help spread the word to the rest of the world.

In many other countries where amateur radio has a long history and EmComm is very well organized, handling messages from non-hams was a fundamental part of being an amateur radio operator. Thailand prohibits licensed amateurs from doing this. So a critical function of EmComm is not legal here. Some people think this has a negative impact on local Thai hams motivation to get involved in EmComm.

Unlike the US, Thailand is a Kingdom and the provinces are directly under the central government. They are not separate entities like the States of the US. Here things are under a unified command, so to speak; hams are not a formal part of it.

Our geography: We have 2 licensed amateur radio stations; Ban Wangwa (a town location) and Ban Na Fa (our farm) which are about 8-9 km apart. We also have 2 other locations (under our direct control) we can use as portable operating sites: a house in Na Fa village (about 1 km from the farm), and an undeveloped hill top site half way between the house and the farm.



Ban Wangwa QTH is the main RTC-TH EmComm Station with HF, VHF, and EchoLink®-Link node capabilities. Sparky and Sam are based here.



Na Fa (Farm) QTH is the second licensed RTC-TH EmComm Station. It is being planned as a back-up station for our main station.



The RTC-TH EmComm Logo

We need to keep our radio equipment portable or "portable-ready" (i.e. quick disconnect from one installation and quick connect at another location). From the very beginning, Mark (N7YLA) urged us to use 12 VDC battery power as the principle power supply



Na Fa (House) is ~1 km from the farm and ~8 km from the Wangwa station. We hope to set up a charging station for Sparky here. Internet service is possible but not in place yet stations. Having nearly identical set ups makes it easier.



The Hill Top Site is an undeveloped site. Portable operations are best by pedestrian or bicycle. The access road is narrow with no safe parking. It is strategically placed in the dog leg of the Nam Yang Valley.

and to use the Anderson PowerPole as the standard power connector. The “buzz” word is interoperability. In the US, the concern is for different EmComm groups being able to integrate EmComm resources and readily connect to the group’s power supplies. For us it is the ability to quickly shift equipment between our

Mobility is an important capability as we may need to move operations from one station to another or set up at a temporary (portable) site for our local needs. So we set out a plan for pedestrian, bicycle, and vehicle (Sparky) mounted mobile capabilities. We also included a portable field station (Sam) capability.



Sparky, the Batt-Mobile (w/ 2m VHF Slingshot beam on a portable push-up mast in Park 'n Op mode)

Sparky has optional push-up masts and antennas that can be used once the vehicle is parked in a clear area. These antennas give better performance than the smaller mobile antennas (which are safer when driving especially for vertical clearance of overhead obstacles).

Sam is a work in progress with much remaining to be done. Once completed, it will be a small portable self-contained radio room on wheels with a bunk.



Samantha “Sam”, the Volts-wagon being developed as a self-contained portable amateur station.

The general plan is to have local portable and mobile communications for our family flow to the Wangwa station which has VHF, HF, and EchoLink® capabilities. If the Internet is functional, VHF radio links to EchoLink® can go out to the world. If not, then HF is available subject to the atmospheric conditions.

Currently there are two critical deficiencies in our EmComm plan: a shortage of licensed operators (there’s only one; we need at least 2) and the need for an alternative power supply for re-charging the 12 VDC batteries for our radios and electric vehicles. Saifon has agreed to try to get her amateur license when she has

time. The problem is taking time to travel to a different province in order to attend a study group and take the exam. It's not easy to run a business and take a few days off for the trip. It might require as much as 3-4 days: ½ to 1 day travel each way, a day for the workshop, and a day for the exam. Once Saifon is licensed, it may be possible to motivate other family members to get licensed.



Standard procedure guides will reduce the learning curve for future RTC-TH EmComm operators. The guides have simplified charts showing the connectors and cables needed for all RTC-TH radios and related equipment to make it easier to set up equipment.

recharge the vehicle batteries by solar power.

Our original plan to use *J. curcas* SVO (straight vegetable oil) as a fossil diesel fuel substitute to run a diesel generator set. But this plan ground to a halt when a fire destroyed the *J. curcas* crop planted at the Hill Top Site. Plans are on hold for now. It takes 3-5 years to establish *J. curcas* to optimum productivity.

Another point of vulnerability related to the EmComm power supply issue is the lack of quality deep cycle 12 VDC batteries in Thailand. We are hoping this will change in the near future. The Thai government is making a big push for more solar power in the Kingdom. As a result, we hope high quality deep cycle batteries will appear in the market place and that prices for solar panels will drop.

Of course, the other side of the coin is to reduce power consumption as much as possible. So we are looking into ways to use LED lighting whenever possible to help meet this goal. Sam has a rated 450 Ah of power. Sparky has dedicated radio batteries rated at 450 Ah and the vehicle batteries are rated at 1350 Ah. But the vehicle batteries are needed to drive Sparky. On a full charge, Sparky can travel for 40 km. We put an operational round trip limit on Sparky at 20 km. We hope to hold 50% of the drive batteries as backup emergency radio reserve power.

An important caveat is the power supply total of 900 Ah (with 675 Ah reserve in Sparky) are for radio operations only. Without power for the computer, EchoLink® cannot be used. So we need to do some calculations on the power needs to support the dedicated EchoLink® computer from batteries. There will be huge power losses due to the inefficient conversion of 12 VDC to 220 VAC. That will undoubtedly affect the power supply and duty cycle for the EchoLink® station. 🌐

Sam's front interior section with main power panel, VHF antenna switch and bulkhead equipment storage slings.



Greg (HSØZHM), Wangwa EchoLink® Station: counter space is a small 1.4 m x 0.8 m; so we went vertical

Changing Times: Paddy Plowing



Photo from the Internet- educational fair use clause

In the past, water buffalo were used for plowing.



They were largely replaced by the "iron buffalo."



Throughout history, agricultural production was often limited by the labor / power available to accomplish the work. Animal husbandry was so influential as a power / energy source that even today machines are rated in terms of "horse power".

In Thailand, water buffalo were the most common draft animal on the farm. The farm system recycled nutrients from the farm to the animal in terms of feed. The animal manure was recycled via composting to the soil and back to the plants.

In more modern times, machinery gave more power than animals, but also required energy resources from off the farm. The "iron buffalo" has largely replaced the water buffalo on Thai farms.

The "Iron Buffalo" is a small walk behind tractor using a low compression, low RPM diesel engine. Kubota is a well-known brand name. A characteristic of this engine is that it often sounds like the engine is about to die. It can be hand crank or electric started depending on how much you want to spend. Once started, the engine coughs to life with a cloud of smoke and begins to run at its low RPM rhythm..."choookah poc, choookah poc, choookah poc" accompanied by metallic rattling of anything loose on it due to the vibrations.

Many farmers don't own a tractor. They hire one (with the operator). We do this each year.

He shows up with his tractor and all the attachments on a trailer. The old truck tires protect the steel plated wheels when driving on paved roads to get to our farm. The disks turn the soil; the tines break up the clods; the smoothing board does the final dress up of the paddy for hand transplanting the rice. The process can take up to 2 days for all of our rice paddies.

Lately, more modern riding tractors



are becoming more common. They cost more, and so the cost for hiring them is also higher. When things go right, they can finish the work in less time than an “iron buffalo”.



When I see these newer tractors in our paddies, they seem oversized for the job. They are heavier, and have gotten stuck a few times. It takes a lot of effort and time to extricate them. Some soft spots don't allow another tractor to come to help. This means trying to use traction mats, rope, and human power with a clever tractor driver all working together to get free of the mud.

In one spot, they were able to get another tractor (owned by the same man) to come to help pull the other tractor free.



These caused delays in completing the preparation of our paddies. Additionally, the second tractor had to take time from another job to rescue its partner. So when



Big tractor stuck in a small rice paddy.



things don't go right, it can cost more to get the same job done in about the same time as the older “iron buffalo”. Unfortunately, the older walk behind tractors may be going the way of the water buffalo. This reduces the choices to get plowing done. Progress sometimes creates strange twists and wrinkles into modern life. 🌐

ARRL Field Day 2012: Port Orford, Oregon

We met Pat (KF7MWX), Jimmy (KE7FXM) and “Hap” (KF7KMV) on the Mark’s (N7YLA) weekly GERC Net. The Oregon hams connect via EchoLink® from Jimmy’s node (KE7FXM-L) to Mark’s node (N7YLA-L). We log into Mark’s node from our node (HSØZHM-L) in Thailand. This combination of radio / computer / Internet VOIP (Voice Over Internet Protocol) enables hams with small hand held radios with power ranging from 2-5 watts to talk around the world!



Field Day 2012: A beautiful day at Port Orford, OR.

For reasons beyond their control GERC had to cancel their Field Day event. On the GERC Net, and subsequent Emails, Pat mentioned the Port Orford hams wanted to do a demonstration of “smart phone” EchoLink® capabilities. Knowing the great impression made by being able to contact hams world-wide, the RTC-TH, Jens and Tom (DL1BJR and DG7BST in Germany) offered to help. Mark and Dennis (KI6NQG), two GERC hams said they might be available and would try to check in, too.

The day before, Jens and I were “testing” and tweaking my system directly connecting to each other, then through a repeater in Germany, and finally to Jimmy’s node in Oregon. Jimmy was monitoring and told us the rather gloomy weather report for the weekend in Port Orford, OR.



Port Orford ham trailer: dual band 2m/440 vertical antenna and a dipole (in the background)



Their “Fly-Away” system: Yaesu (top right), police and fire radios (center left/right), Marine radio (lower right).



Greg (HSØZHM)



Jens (DL1BJR)

I checked into the KE7FXM node and had a QSO with Jimmy. Pat got set up and used his HT to access the node. Later “Hap” checked in. Due to the time difference between OR and Thailand, I went to bed after an hour. Jens was on the air when I checked in again in the afternoon (OR time). Making new friends, developing international understanding and promoting amateur radio are all part and parcel of being a ham. Now, EchoLink® makes it even easier. 🌐