



RTC-TH Mar 2013 Update

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

ชุมชนตามสิ่งแวดล้อมศึกษาเพื่อการพึ่งตัวเองและยั่งยืนบนพืชนาขนาดเล็กครอบครัวฟาร์ม

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“Value Added” on Our Farm

We advocate small rural family farms should seek “value added” strategies to their plans. Typically, farmers grow crops to sell. Since planting tends to be seasonal, they invariably end up competing with each other as everyone is harvesting at about the same time. Supply and demand kicks in. A bumper crop sometimes means a lower price.

Most crops tend to be the raw materials in modern food production businesses. Farmers do not earn as much per kilo of crop as a food wholesaler or retailer earns.

Small rural family farms have 2 basic choices to add value to their farm output: they can process it from a raw material to a finished product or they can try to supply it “out of season” when market supplies are lower and prices are higher. On our farm, we add value to our tea by processing the tealeaves. We also have an experiment to grow lemon trees in containers in order to try to produce lemons out of season.

We originally got the tea plants as part of an award for being recognized as an outstanding farm in the local area.




Tea intercropped with our fruit trees



Mom picking tea leaves for making miang

Now the tea plants are mature enough to harvest the tealeaves. Mom picks tealeaves when she has time or wants extra pocket money. The local market conditions here are for miang (a pickled herbal tea ball and energy booster for workers). We don't have adequate resources to produce it in quantity. It is more advantageous for us to do the first couple of processing steps to make it. We can easily steam the leaves and sell them. If more time is available, we can pickle them to sell as well.

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Our West orchard is a mix of fruits including lemons.

We are fortunate that most of our fruit trees and orchards are mature enough to get through the dry season without additional watering. So we decided to try to allocating some of the harvested rainwater to drip irrigate some lemon trees in containers. The idea is to try to get the lemon trees to bear fruit in the off-season. During the dry season, lemons are in short supply locally. Prices can be 2-3 times the rainy season prices.

Moisture is the main variable affecting the productivity of our lemon trees.

Unlike some farms in our area, we have our own water supply for the hot, dry season. At this time, we do not have sufficient water to drip irrigate an orchard through the dry season. Putting lemon trees in containers makes it easier for us to control the water available to the plants. The results of this experiment could have implications for future water resource plans for our farm.



Concrete containers being readied to move to the farm



We put some lemon trees in containers on the farm.



The plan seems to be on track: abundant blossoms are a good sign.



This trial will help us decide to put more lemon trees in containers and drip irrigate them. We aren't keen on commercial agriculture. But we also need to keep an open mind to effective ways to get additional items for bartering power or ways to earn extra cash that are conducive to our farm and our local market conditions. 🌐

2013 Dry Season Climate Watch

30 Yr Average			2012		2013	
Month	Rainfall (mm)	Rainy days	Rainfall (mm)	Rainy days	Rainfall (mm)	Rainy days
Nov	22.7	4	8.12	2	77.48	9
Dec	5.9	1	0	0	3.05	2
Jan	11.0	2	17.78	3	49.02	1
Feb	12.6	2	1.01	1	16.26	4
Acc Σ	52.2	9	26.91	5	145.81	16
Mar	29.2	3	31.24	2	-----	-----
Apr	108.0	9	163.32	8	-----	-----
Dry Season 30YrAv	189.4	21	221.47	16	-----	-----

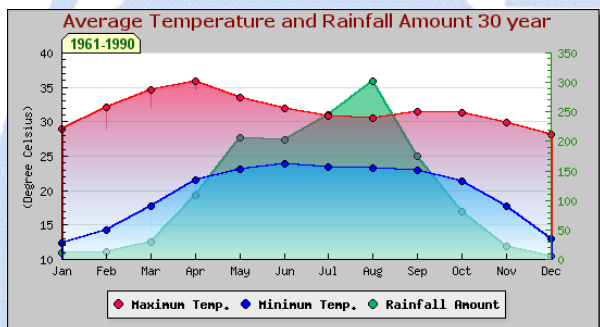
Brown Box = northern Thai Dry Season
Red shading = data below 30 year average for Thawangpha
Green shading = data above 30 year average for Thawangpha
Gray shading = Accumulated totals for the year to this month

January 2013 posted some unusually high rainfall data. February 2013 followed the unusual pattern of January. It is ironic that we sit and watch the news reports showing Thai army trucks delivering water to villagers in northern Thailand.

Of course, the data posted by the Thawangpha weather station doesn't necessarily mean this amount of rainfall is occurring evenly throughout the province.

Despite the data, the soil in our garden is very dry. The

water levels in our fish ponds show a decline for the high water mark of the wet season. That is expected. We are in good shape so far. With two more months to go until the rainy season, we can only say the dry season isn't over until it is over. There's no guarantee the monsoons will be on time. We just have to wait and see.



Spark's Solar Bracket Completed



This small solar panel helps to maintain Sparky's auxiliary radio battery (not to recharge it).



It took a while, but the solar bracket and solar panel for Sparky have been finally "wed". It all came together over several months. The delay involved finding the adjustable bracket to let us aim the panel for optimum solar incidence. A similar bracket will be made for Sam. This gives us backup power for our radio batteries.

A separate outriggers are installed on both sides of Sparky: one of the push-up mast and one for the solar bracket. Once Sparky is parked, the solar panel can be set up in ~2 minutes. The bracket can be rotated to adjust for solar azimuth. It can also be tilted to adjust for solar altitude.

RTC-TH Reference Library Move Nears Completion

A major re-organization of the RTC-TH is underway; shifting main operations from Ban Wang Wa (in town) to Ban Na Fa (in the village). The key reason is to consolidate operations closer to the farm (the center of RTC-TH activities).

One of the phases of the re-organization involved moving our reference library. The library is a diverse collection of materials focusing on the environment, sustainable agriculture, and education. It also includes crafts skills in the areas of carpentry, masonry, and bamboo construction techniques. About 25% of the library consists of photo albums and illustrated reports of past international projects, trips, as well as geography field trips from the US.

New enclosed bookcases protect the various books, maps, pamphlets and publications from the ravages of tropical termites and other vermin. This part of the library move consists of 4 new bookcases and 2 shorter bookcases. There are two more tall enclosed bookcases to be moved from our Wang Wa office.

We opted to maintain a print library as a necessary backup rather than totally rely on Internet access for reference access. The variability of electrical power and the frequently interrupted Internet access in rural Thailand poses challenges. For example, we don't have Internet access in the village (at the moment). But lessons are still in the pipeline for completion.



Initially the library was set up in Ban Wang Wa.



The library is located at the west end of the 2nd floor room of our house in Ban Na Fa.

During the move, we also cataloged the various publications in the library collection. The effort continues as there are a few boxes of books in storage. But as of a few weeks ago, the tally was 1,760 items and counting. This includes small pamphlets, booklets, and maps. For example, a typical trip photo album also includes trip related natural history guides, maps, and separate items which are cataloged.

The opposite end of the room is reserved for the RTC-TH Klunkworks. It requires 3-rong grounded electrical outlets. These are not normally found in rural Thai homes. We must coordinate the new wiring of the carport expansion project (see next story).

New Home for Sparky and Sam Started

The dry season is the time for new construction. In line with the RTC-TH EmComm re-organization plan, we extended the carport at the house in Ban Na Fa for Sparky and Sam. Saifon's eldest sister and brother-in-law (Aoi and Noi) are in the teak and wood milling business. When they heard of our plans, they offered to provide all the wood needed at no cost, and to help supervise the project. Without their generous donation, this project would not be possible. Here is a photo summary of the project to date.



26 Jan: First load of teak delivered.



The larger logs are for the corner posts. The rest will be used for the roof trusses and crossbeams.



3 Feb: Carport site is cleared. This called for removal of 2/3 of the existing garden and concrete containers.



Loading goes smoothly with help that avoids any heavy lifting. The containers will be used on the farm.



With the site clear, we can double check our layout plans for the carport and the radio antenna locations.



16 Feb Day 1: The construction phase begins with the removal of the existing carport. Salvaged materials will be used on the farm.



The large teak logs are cut using a handheld chainsaw. These will be the main posts of the carport. They will be mounted on concrete piers.



The concrete piers require careful placement and leveling to determine the length of each teak post.



It's customary to feed the crew dinner. Pi Noi (lower right) reviewing the project over dinner to monitor workflow and progress.

The construction phase began on 16 Feb. There were 2 teams working simultaneously on-site: the carpentry team of 4-5 men, and 2 of Noi's woodcutters. The process is quite different from a similar project in the US. Much of it seemed more like tailoring and fitting a suit than a home remodeling effort. Without formal plans and codes, local experience and practices guide the work. Our layout drawings and ideas were the new "twists" for everyone and gave them new ideas and insights.



At the end of the day: all concrete piers are installed and all teak posts are milled.



Posts are carefully measured and notched (top). Axes and knives are standard carpentry tools here. →



Setting the posts and checking their verticality with a plumb bob.



17 Feb Day 2: The day's effort was to set all 8 posts and the main girders. Posts were notched for bolting the girders in place. The only power tools used were a circular saw and a drill. Carpenters here use axes and knives to cut and adjust the notches to fit the posts to the piers and girders. Each post is a custom job. At the end of Day 2: Posts are installed and braced; girders and temporary scaffolding (the horizontal logs) are in place.



18 Feb (Day 3): The main effort was to start placing the carport rafters. They used 7 m long teak logs averaging ~20 cm in diameter (at the base). Each log is a slightly different diameter and tapers toward the end. This will require “custom” trimming to fit when they install the roofing. The rafters are held in place with a wire bale that is handmade. It takes at least 3 men to hoist a log rafter into place: 2 aloft and 1 on the ground.



Making the wire bales to hold the rafters in place.



The rafter logs are debarked and smoothed manually.



It is all brute strength to get a teak log rafter aloft.



The rafters are secured to the girders with a wire bale.





Using a water hose to level the carport to the garage.
19 Feb Day 4: Work continued on the rafters. The challenges are how the new carport roof interfaces with the old garage: 1) The two structures are set at different angles; the new carport is parallel to the house. 2) There are no posts at the garage to support the girders. 3) The new carport roof is 0.5 m higher than the garage roof.



Assessing the roof heights of the carport and garage.



Making the girder supports for the new carport.



Bridging the girder gap at the garage.





Preparing to extend the girders.

20 Feb Day 5: We completed the carport to garage connection today, finished the main roof rafters, extended the girders over the breezeway between the carport and the house, and completed installing the front roof rafters between the carport and the main house. The roof peak is at 4 m and uses a shed style roof. A key difference is an open front at the connecting point with the steeper pitched front roof. This is to vent the hot air from inside the carport. This is not normally done and raises some eyebrows.



Completing the connection to the garage and main roof rafter installation was a major benchmark.



Installing the front roof rafters comprised most of the day's work



End of Day 5: Carport connected to the garage; front rafters installed.



An insulated roofing panel is handed aloft.

21 Feb Day 6: Completing the front rafters took most of the morning. Rough-cut teak was planed, spliced, fitted, and nailed into place. The fitting sometimes required notches cut by ax in the teak rafter poles. The insulated sheet metal roofing panels were set in place. These shorter front roof panels are about 2.6 m long. One man can easily handle them. The anchor screws are ~5 cm long. They used an electric drill to drive in the anchor screws. Panel placement takes time to check the alignment of the eaves.



End of Day 6 sees the start of installing the insulated roofing panels.



22 Feb Day 7: It rained. Ironically, rain falls in the dry season while much of northern Thailand is under drought conditions. We appreciate the rain for our farm. But this also means there is no work on the carport today.

23 Feb Day 8: The rain made it necessary to dry the panels before the gluing process. Three workers spent the day gluing the insulation to the roofing panels. The longer panels are 7.6 m long.



24 Feb Day 9: It was a very long day, but the team made an extra effort to finish installing the roof. They hauled all of the 18 long roofing panels aloft. Two men placing the panels also required two men checking the insulation overlap under the roof. The panels are screwed to the rafters in a 1 m X 1 m grid. A quick check of the roofing temperatures: old galvanized sheet metal roof 61°C; garage tile roof 56°C; new insulated sheet metal roofing 37°C. Cool!! 🌐



With all panels aloft, the installation work begins.



Two men under the roof check the insulation overlap.



Our choice of a roof color choice bucks Thai tradition.



As the sun sets, the final roof panel is installed.



The carport roof is 95% done. The final step is to glue down any loose insulation edges under the roof.



The rafters are teak logs of varying diameters.



Each fascia board is cut to fit the unique rafter spacing.



Late in the day, they complete the fascia on one end.

25 Feb Day 10: Only 2 workers were on site today. The goal is to install the carport fascia. They divided the work into 3 phases: 1) setting up / taking down temporary scaffolding to get to the eaves; 2) measuring and cutting the fascia boards; 3) fitting and installing the fascia. Using teak trees for rafters creates variable spacing for attaching the fascia. Therefore, the spacing of the attachment points varies depending on tree diameters. In the US, using standard size lumber and rafting spacing makes the installation of fascia much easier and faster.



They must build the scaffolding.

The dry season is when most construction takes place. We were lucky to get this particular team between jobs. The last fascia needs to be put on the other end. But they have another job to go to, so there will be a week and a half pause on our project. That will give us time to go over our "plans" and double check measurements and estimates for materials to complete the job. So the pause is welcomed. 🌐 **(To be continued.)**