



RTC-TH May 2013 Update 2

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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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ANTicipating the Rainy Season

It is 4 am. The morning air is cool and still. Outside the kitchen, the lights are attracting *meng man*, a large flying ant (~2 cm long, wingspan ~5 cm). They are a welcome precursor to the rainy season. They are also a Northern Thai delicacy. Family members are ready to go on a hunt. Mom has a small bucket of water. Saifon takes a small empty plastic water bottle. The search is on. They look outside any lighted house window. After scouring and collecting ants there, they check under the streetlights. Two full plastic water bottles are enough for one dish. 🌐



Meng man, object of the early morning hunt.



At night, they are attracted to light; these are too small.



Collected live in an empty plastic water bottle



Mom says two full bottles are needed for a dish

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Our Garden Rehab Effort

Saifon's mom gave up about 30 sq meters of garden space for our carport project. This consisted of 7 dragon fruit plants and 5 concrete container planters, and the various herbs intercropped among the dragon fruit. **[Note:** We moved the containers to the farm and planted lemon trees in them. We are hoping to get them to bear fruit in the dry / off-season when lemon prices are higher.]



The carport project expanded into 2/3 of the backyard garden and replaced the old carport.

We felt badly about the loss of food growing area. With construction done, we set to regrouping and rethinking our garden plans. We decided to use some of the scrap lumber and sawdust from the carport to make raised garden beds. Combined with compost, manure, and EM from the farm, we hope to have enriched garden beds for our vegetable garden. Many books on composting and organic garden report productivity gains of 3-5 times over traditional gardening methods. If these claims prove true; we estimate the 14 sq meters of raised beds may be able to make up for 58-78% of the total lost garden area.



Four of eight new raised garden beds in the backyard

Mom put some new dragon fruit plants along the north boundary wall in the front yard. She had 2 other containers (1 in the front yard, 1 in the back). We are growing the Thai herbs in them. We plan to make up the balance of lost garden area with new garden beds on the farm. The new beds won't be as convenient to access. The backyard garden is a mere 6 m from the kitchen door. At least we have a way to compensate for the lost home garden space.



New front yard replacement dragon fruit plants



One of two containers for our Thai herbs

Thai Huck Finn on the Nam Yang



Shortly after the dredging crews left the vicinity of the Ban Na Fa bridge over the Nam Yang, I heard shouting and splashing from the river. It seems some local boys took advantage of the deeper water from the dredging. Somehow, they had a large slab of Styrofoam. They lashed it between bamboo poles with some rope and fashioned a raft. It was only stable enough to hold one boy. The biggest (and maybe the oldest) took charge. He kept high and dry while the two smaller boys played in the water. At this sight, we could not help but recall the story of Huckleberry Finn. The sight almost made us realize that the days of “summer” were soon ending for these children. School will be starting soon. May these children enjoy their last days of summer fun in the sun! 🌐

Some of Our Fresh Farm Produce

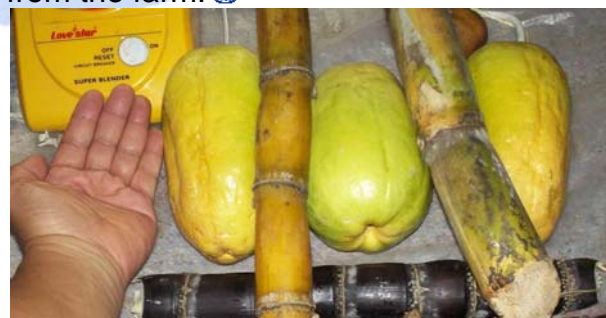
Fresh fruits are one of the many fringe benefits from our farm. The other day we brought home a gigantic papaya weighing 3 kg / 6.6 lbs! It was sweet, too!



A ponderous papaya tips the scale at 3 kg!



We also picked and brought home 3 giant passion fruit and fresh sugar cane from the farm. 🌐



More on Soil Erosion Management

We received several emails concerning soil erosion and various methods to handle it. It seems the various methods of mitigating soil losses have been in the knowledge base for a long time. Perhaps they have been forgotten or newer generations overlook them. (The practices we are talking about are crop rotation, fallowing, / tilling, mulching, inter-cropping, and composting.)



We intercropped tea in a mixed fruit orchard

In our area, many people seem to plant corn or chilies over and over again each dry season in the same fields. They use chemical fertilizers and biocides in an effort to boost yields. We assume the reason is pursuit of money; corn is a major cash crop here. Rice is dominant in the wet season (either in paddies or rain fed on the slopes). It was a subsistence crop until the recent Thai government policy is to buy rice direct from farmers at above market prices. This is a government rural anti-poverty campaign. The people who lack sufficient water during the dry season fallow their fields; they have little choice in the matter.



This is a common sight for row crops on slopes

This is a common sight for row crops on slopes drivers have no vested interest in the land. Thus, they have little motivation to conserve the soil. (In the US, tractors and their systems are so large they cannot always the turns required in contour plowing. Combined with the much larger fields in the US, some farmers start plowing along the contour but eventually end up not being on the contour.

We see many hillsides in northern Thailand planted in row crops going vertically up and down the slopes. We do not see contour plowing in our area. The high center-of-gravity of the walk behind tractors makes them unmanageable to contour plow on slopes. Much of the newly cleared lands are on slopes too steep for conventional tractors to operate. Added to this is the fact that most farmers don't own a tractor. They hire a tractor and driver to do the plowing. The tractor owner /

Today, many studies show plowing destroys valuable soil structure. The heavy equipment also pulverizes the soil making it easier to erode by wind or water. This old habit is hard to change. Low till / No till methods help reduce erosion, boost organic soil inputs, helps maintain and improve soil structure, and is an environmentally sound and sustainable practice. Many Thai farmers plow their fields. They traditionally burn crop residues. In essence, they create bare soil, the ideal setting for weeds. This then forces them to use synthetic chemical biocides (e.g. herbicides, and pesticides). They have opted for a path of higher costs (and most likely deeper debt). The hidden cost is the health issues related to the physical contact with toxic materials, contamination of the soil, water, and the lurking long-term danger posed to their families and loved ones.

Ironically, tropical soils support lush natural vegetation but are low in organics. The key aim of our S.O.S. (Save Our Soil) efforts is to improve and to build soil by increasing the content of natural organic matter (from both floral and fauna sources). This helps build soil structure, increases soil moisture retention and soil nutrients. The improved soil is a better habitat for soil organisms. They in turn help make soil a healthier growth medium for plants. Soil formation under the best natural conditions might make 2.5 cm of new soil in a year. We encourage farmers to take an active role in promoting and enhancing soil development by “growing” soil on their farms.

History is full of examples of empires and nations acquiring wealth and power by exploiting and depleting local resources. Their expansion was largely driven by the need to find new resources to exploit to fuel their existence and continued growth. Though some empires lasted for several centuries, none lasted forever. Subsistence farmers can still be found in the 21st century.



Our orchards provide fallen leaves for mulching.



We hire day workers to gather the leaves.



They carry the leaves to the fallowed field.



We will mulch the field prior to the rains.

We plan to plant upland (dry land) rice in the pasture this year. It was fallow through the dry season. The mulching and EM bacteria will help add organics to the soil. We will add EM bacteria as well.

We will use a simple no till planting method. Workers, walking abreast, use a pointed bamboo stick to poke a hole in the ground, drop in a few rice seeds, and then lightly tamp the soil to cover the hole.



Barrels of EM bacteria prepared in previous months

Carport Moves Closer to Completion

With the windows and doors installed, the new carport is enclosed and secure. We salvaged the steel roller door from our business location in Thawangpha. The door is 2.6 m wide X 2.11 m tall (with 2 cm vertical clearance for Sparky and Sam). The side door is made with teak on steel roller wheels and steel track.



The salvaged steel roller door.



The teak sliding door

Our ideas for the windows are different from the typical windows found on most Thai houses. This creates challenges for the carpenters who are not familiar with a different approach. For example, the hinges were incorrectly installed and need to be re-done. They furnished a stick at the bottom to prop the window open. This did not fully open the window and limited the view.



Windows: Inside View before and after installation



Windows: Outside View before and after installation

Ropes and pulleys let us fully open the windows for increased airflow and a better view. Saifon was concerned about safety. So we devised an iron safety hook to hold the window in the open position. It uses gravity to position the hook and a pull cord to release it. As the window opens, the hook drops through the slat opening (see photo on the right). Lowering the window sets it on the hook. Then the lift cord is secured on a cleat. To close the window, it is hoisted to the highest position (clear of the hook, which is pulled clear with a cord). The window is lowered to the fully closed position and can be locked.



We opted for a pulley system to fully open the windows

For now, we held off on enclosing the carport with bug screens (as they will reduce the air circulation). However, bug screens remain an option if the need arises. **[Note:** Sam (the radio trailer) has a mosquito net for field operations. If needed, the net could be used inside the carport during radio operations.

An electrician and his crew installed the grounded 220 VAC wiring in the new carport, the garage (where we are setting up our workshop), and the second floor room in the house (the combined library and computer room.) Most houses in rural Thailand do not have grounded electrical systems. This is another “unusual” characteristic of our project that makes it a challenge to find an electrician who is experienced and who can get the required materials. We are lucky that things in Thailand are improving. Grounded outlets and



Window pulley hoist and safety hook system

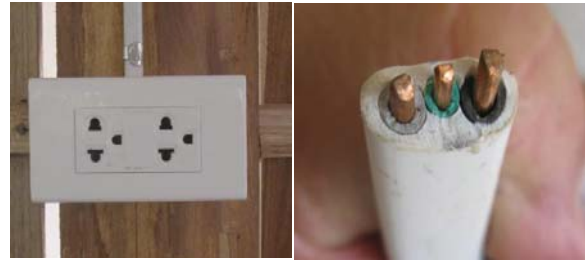


The new carport gets electrified for 220 VAC.



The workshop in the garage gets grounded sockets

3-wire cable can be found in larger cities. Only recently has it become readily available in our local area. As far as we know, there is no Thai national electrical code. If there is, its practical use or compliance to it is not readily evident, especially in rural areas. (We have read of accidental electrocution fatalities due to



Real grounded components for our project.

Note: Many appliances have 3-prong grounded plugs. However, since most houses don't have matching sockets, many people:

- cut off the ground prong on the plug and plug the appliance into a standard 2-prong socket;
- buy an adapter to convert the 3-prong plug for use in a 2-prong socket;
- buy a power strip or surge protector / extension cord with 3-prong sockets equipped with a 2-prong plug.

Of course, all of these options results in using the appliance ungrounded.

Old and New Co-exist (for now): The new grounded outlets for the garage are on the new breaker box. The old garage wiring is an ugly and worrisome reality of rural Thai life. We hope to change it very soon. But the fact is this type of wiring practice hasn't resulted in many fires in our local area (so far).



ungrounded circuits occurring in tourist resorts.)

Although the carport is a new project, part of the electrical work involves the garage with its older wiring system. There is a serious challenge to try upgrading old wiring in Thailand. It begins with an unknown spaghetti bowl of old wiring. This includes abandoned lines / fixtures with wires cut and taped over wires left in place. The wiring in most rural Thai homes surface

mounted. Rewiring is not a simple task of pulling new wires through conduit. It is labor-intensive effort to remove the old wire with the multitude of small securing nailed tabs from the wall. So far, we haven't found any electricians willing to rewire an existing building. The usual approach is to simply ADD new lines and circuits to the existing spaghetti bowl of old wires. This is more compatible with the laid back Thai approach and gains its strength from the fact that the present practice hasn't resulted in a significant fires locally. (Of course, this could also be due to either "if it ain't broke, don't fix it" attitude or a general reluctance to talk about such matters, too.)

With the electrical work done, we put our focus on shellacking and painting the carport. The teak slats will get a combination shellac / urethane coating to protect



It was hard work to remove carpenters notes.

them from the weather. Most of the teak is *sac tong* (golden teak). The shellac brings out the best in the wood tone. We extend our thanks to Pi Oi and Pi Noi for providing workers from their lumber company as the painters. Preparation required us to try to remove the carpenters' pencil and felt marker lines and notes written directly on the wood. While these are necessary for construction, they also are a painter's worst enemy especially when the wood is being shellacked.



Workers apply shellac to the "gold teak" slats.



Carport interior with shellac on the golden teak.

sanding the teak before the applying the shellac. Once the shellac dried, the surface had to be sanded again before the urethane seal. The work took 3 days to do both the interior and exterior.

They couldn't paint the stucco without first repairing some chipped stuccowork. While the patches were drying, they put two coats of primer on the majority of the stucco walls. They painted the exterior and interior stucco off-white to match the house. The paint was donated by Pi Or (Saifon's second elder sister). She had



Stucco patches, the final wall prep for priming

left over paint from her house remodeling project. We appreciate her contribution that helped save on the painting budget. There was enough paint to cover the graffiti on the old garage wall, too.



Old Graffiti: Going, going, gone! It took 3 coats of paint to obliterate the wanton words.



The painting is almost done; only the fascia boards remain. At long last, moving day is fast approaching. It took about 32 working days spread over 3 months to complete our project. Various factors contributed to the drawn out construction schedule. These included the unavailability of workers, farming schedules, funerals, and the laid back Thai lifestyle. Most workers were relatives (hey, we live in a clan village).

The semi-enclosed carport may get dusty. We converted two of our old parachutes to dust covers for Sparky and Sam. We made simple rafter hook rings using scrap steel rods from the construction work. A single length of parachute shroud line hoists each canopy to the ceiling over the mid-point of the parking spots for Sparky and Sam. We can lower the canopies and remove them for periodically wash if necessary.



Parachute rafter hook



We converted our old parachutes to dust covers.

Other remaining work to complete the carport includes re-doing the window hinges and painting the fascia boards. We also have a wish list of utilitarian furnishings for the carport. These combine seating / storage functions for optimum space utilization. We would also like to initiate a solar power option for the carport for 12 VDC LED lighting and charging the station radio batteries. 🌐

Sparky and Sam Move to Ban Na Fa

With some exterior shellacing remaining, Sparky and Sam moved into the new carport in Ban Na Fa. The 8 km drive went smoothly. Sparky and Sam managed the potentially troublesome hills. We started with a full 50 VDC charge. On level stretches, the load drew things down to 49 VDC and managed a steady estimated 28 kph. On the steepest hill it dropped to 45 VDC. Sparky slowed to about 5 kph, but he never faltered. [Note: There are no gears and shifting at all. Sparky only has forward, neutral, and reverse for his 11 HP electric motor.



Sparky and Sam arrive in Ban Na Fa.

After a thorough washing, they moved into the carport. Sam is assigned to the SE corner near the windows. Her side door opens toward the windows overlooking the Nam Yang River. Sparky backs into the NE corner near the roller door. He gets easy exit / entry priority as Sam will be our *de facto* Ban Na Fa Station.



Samantha parks at the SE corner near the windows.



Sparky parks at the NW corner by the roller door.



In contrast to the old parking arrangements in town, the new carport allows:

- Sparky and Sam to easily park and operate in close proximity with more space. In town, both needed to be moved to the backyard before they could begin any radio operations. Now Sam is in easy reach of the permanent antennas at Ban Na Fa.

- Both have easy access to grounded power outlets for their proprietary chargers. In town, we had to move them to a spot close to a grounded outlet after work hours.



- Both have easier access to the farm, now only 1.1 km away (in contrast to the 8 km from town).
- Both have protection from dust and lizard droppings. In town, although parked indoors, the decorative false ceilings and overall circumstances were not
- were not conducive to covering them. The set up in the carport makes it easy to lift / lower the parachute dust covers. Also, it will be easy to periodically wash the parachutes in the Nam Yang River. They can be hung from the bridge to dry.



No plan is perfect. We fully expect to be making modifications and adjustments to the carport facilities now that Sparky and Sam are physically in place. For example, final placement and installation of the station ground bus panel and the rigging of the VHF antenna are affected by Sam's actual parking position. Sam also affects the Internet connections for setting up the EchoLink computer. There are plans for storage / bench units to keep field equipment in easy reach of Sparky and our bicycles. When empty, the carport looked so spacious. With Sparky and Sam in place, space becomes more limited. 🌐



Plans are in the works for a folding table at the window.

Clearing and Burning Continue



It is sad to see the forest cover removed so near to us.

Land clearing and burning go hand in hand in northern Thailand. Recent government programs to buy rice directly from farmers at ABOVE market prices may be responsible for accelerated forest clearing. We took the photo on the left looking south from our house in Ban Na Fa. The bare ground was once “forested”. We do not know the history of the land ownership, but even if legally cleared, it is sad to see the forest cover loss.

When forested areas are cleared and burned, you not only hear the sound of the flames. There are mini-explosions as the chambers in the bamboo burst open due to expanding gases. To paraphrase a song: “The fields are alive with the sound of fire, with smoke in the air simply makes you gasp...”

We took all of the photos below in the immediate vicinity of the Ban Na Fa bridge. Burning seems to take place willy-nilly day or night. The photos on the left are of fires during the daylight hours. The upper right photo was taken just about dinnertime. We took the bottom right photo at about 4 am. We awoke to the sound of the fire and the exploding bamboo and the acrid smoke. 🌐



Looking Southeast and South Farmers: clearing fields to the to prepare for the rainy season planting.



Clearing fields Southwest of the Ban Na Fa Bridge



Burning debris from the recent river dredging

May Farm Scenes

We got a few days of rain to start greening up the farm. However, the monsoons haven't really arrived yet. All three fishponds still have water in them. The West and Central ponds are in good condition (both in terms of water depth and water quality). The East pond is low and has the poorest water quality.



The water level in the Central pond is in good shape.



The East pond is the lowest of all three ponds (a maximum of ~1-1.5 m deep)

Remember all the empty cement bags from our carport construction project? They are now a vital part of our non-toxic pest control in the West orchard and along the driveway. We've been busy cutting and stapling to make small paper bags to cover the wood apples and mangoes. It's a labor-intensive process. In contrast to synthetic or organic biocides, labor costs are considerably lower.

Fruits ripen earlier in the south. Much of the fruits for sale in the local markets are shipped in from the south. Pineapples, mangoes, avocados are common in the market now. Some of our mangoes are just starting to ripen. With the different varieties of bananas and papayas on our farm, we get to enjoy those fruits year-round. 🌍

