RTC-TH Apr 2013 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

www.neighborhoodlink.com/org/rtcth E-mail: rtc2k5@gmail.com

Happy Thai New Year

Sawadee pi mai! As the hot, dry season comes closer to its end (and the approach of the rainy season), it is time for our third "New Year" celebration.

Like China, it seems the entire country is on the move. Many who left the farm to work in factories are scrambling to find transportation back to their provinces. Buses and trains add extra capacity to deal with the crowds. The roadways are jammed, and the annual traffic fatality count begins.

Just as in the US, we tend to avoid travel during holidays. We are already in the province and are at the "home". So like folks awaiting the annual return of the swallows, we are cleaning and preparing to receive guests. We are expecting relatives living and working in Bangkok to be arriving over the next few days. The usual visitors from Bangkok expected are Aunty Bang, cousins Jeow, and Op. The nephews (Net and Nhum) will be arriving from Nan Muang and Chiang Mai respectively. Visits are exchanged with relatives in neighboring villages as well.

Other than the water splashing that makes Thailand a festive tourist hot spot for the holidays, it also time for families to *tamboon* (seek blessings). Our preparations consist of assorted food, gifts, and money offered at the village temple in the name loved ones (living and deceased).

Another tradition is to pay respect to the elders. This is a simple ceremony of younger family members washing the hands of respected elders and tying white string around their wrists while offering prayers of good wishes.

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RTC-TH Co-founders

Greg & Saifon Lee

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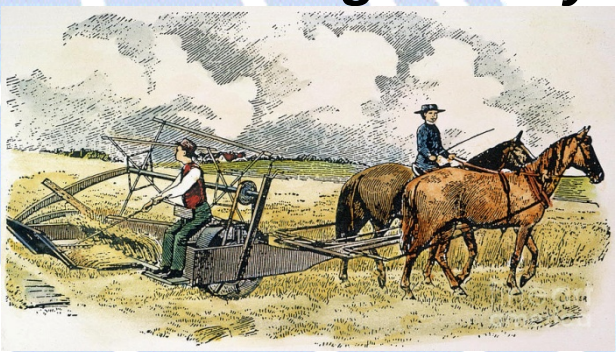
Drip Irrigation Donors: Thanks but, Please Hold

Thanks to all who responded to our plea to help others by donating micro-drip irrigation systems to the RTC-TH. Early responders placed orders to get a quote on total cost including the shipping (without Thai customs duty). To their amazement, the shipping charges were more than the unit they selected. They contacted us to confirm if the shipping fees were correct. We contacted IDE and unfortunately the shipping costs are high relative to the cost of the units.

We are currently investigating to see if there may be a way to obtain the units locally. At this time, there are no distributors in Thailand. We are making inquiries among our various Thai business contacts to see if they might consider distributing or making the units locally.

We thank you for your support and will keep you posted on when the units are locally available.

Unsustainable Agriculture: A Long History



Archaeological studies of some major centers of agriculture and civilizations in Sub-Saharan Africa, East Asia, Southeast Asia, Oceania, and the Americas reveal some consistent human environmental impacts related to agriculture. The negative impacts of agriculture on the environment can be seen in the cradles of civilization. And these unsustainable practices can be traced even farther back in pre-history.

It begins with clearing land of native vegetation (first in valley floors or places of generally level ground) for agriculture. If rains were insufficient, they applied irrigation to increase agricultural production. As the population increased so did the need for more food. This drove the clearing of nearby sloping land. This increased soil erosion on the slopes and increased sedimentation / siltation of rivers and irrigation works. This often increased water logging and salinization problems (especially in semi-arid and arid areas). Agricultural output declined. That cascaded into reduced population, emigration, and sometimes total abandonment of the area. In some cases, wars or prolonged droughts contributed to the decline of these civilizations.

Irrigation undoubtedly brought increased food production to various groups over the long course of human history. However, it seems the “Goldilocks Principle” (not too much, not too little, but just right” (or as the Buddhists advocate “the middle way”) is swept aside in the quest for MORE.

Western European agricultural practices seemed suitably sustainable for their particular combination of place and climate. As they push westward across the Atlantic, they applied the same practices to a different place and climate. They were not as successful. (In fact, European colonies worldwide provide evidence of the failure of Western European agricultural practices when applied to different regions and climates.)

In North America, the “Old World” met an “Older World” which mistakenly was thought of as a “New World”. The Europeans in North America pitted themselves against native peoples with a long history of subsistence. Early colonists brought their

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agricultural practices with them. From this small beginning, they destroyed forests that had supported native peoples for several thousands of years. The industrial revolution brought more mechanization to Western farms (American and European). Labor shortages also fed the growing trend. The opening of the US central plains saw tremendous growth in mechanized farms. Agricultural productivity soared.

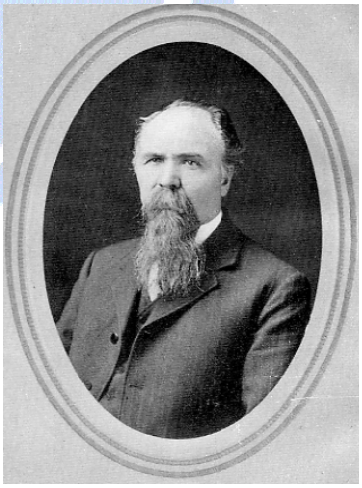
In the 1800s, American agriculture drew on the power of the industrial revolution to mechanize farming. Combined with a seemingly endless and bountiful "frontier", American farms expanded westward. With machinery, one farmer could work even more land than before. Here's an interesting quote from Sitting Bull ~ 200 years after the Europeans settled in North America:

"Yet hear me, friends! We have now to deal with another people, small and feeble when our forefathers first met them, but now great and overbearing. Strangely enough, they have a mind to till the soil, and the love of possessions is a disease in them. These people have made many rules that the rich may break, but the poor may not! They have a religion in which the poor worship, but the rich will not! They even take tithes of the poor and weak to support the rich and those who rule. They claim this mother of ours, the Earth, for their own use, and fence their neighbors away from her, and deface her with their buildings and their refuse. They compel her to produce out of season, and when sterile she is made to take medicine in order to produce again. All this is sacrilege!"

In 1906, Edward C. Parks (an agricultural economist, Minnesota College of Agriculture, who felt farms should be run as businesses) characterized the American wheat farmer as "slothful and careless". The continuous cropping of wheat depleted soil fertility. He reported their solution was to move westward and start the process all over again. This certainly agreed Sitting Bull's statements of the exploitive practices of the settlers.

In the early 1900's, some Americans felt they had the solution of China's starving masses and famines. At that time, America appeared to be the pinnacle of agricultural technology and success. These could be applied to solve China's rural problems in agronomy and rural agricultural economics. American businesses eyed the potential of the China market for farm machinery. Even Chinese who studied agriculture in the US got caught up with these ideas. (See the paragraph about Dr. Kin coming up.)

F.H. King (a retired USDA Chief of Soil Management) toured Asia (China, Japan, and Korea) for 5 months. His compiled notes and observations were published after his death in 1911 as *Farmers for Forty Centuries*. This book opened the eyes of the world to the Chinese agricultural practices that enabled continuous cultivation of the same land for centuries. It also misled many to believe the practices noted by King were used throughout all of China. It was a limited sample. China is huge and contains a diversity of ethnicities and conditions. King's observations made it clear that America could learn from China. His key observation was the Asian practice of returning human wastes to the soil rather than disposing of it as mere waste. King characterized Western man as "the most extravagant accelerator of waste the world has ever endured". He also predicted the use of enormous amounts of



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chemical fertilizers to boost agricultural output could not be continued forever.

In 1917, the USDA took the progressive step of hiring Dr. Kin Yamei (the first Chinese to serve as an agricultural advisor to the US). She graduated from an American medical school. Her assignment was to return to China and compile a report about the soybean. She pointed out that Chinese "instead of taking the long and expensive method of feeding grain to an animal until the animal was ready to be killed and eaten, in China, we take a short cut by eating the soybean, which is protein, meat, and milk in itself". Unfortunately, the USDA never heard from Dr. Kin again. The US State Department reported to the USDA Dr. Kin claimed USDA endorsement to launch a cotton-growing scheme in Shandong Province using private capital. (**Note:** Ironically, much of the efforts to use US agricultural expertise in China during the turn of the century was directed to improving cotton growing and not so much toward food production. The idea was to earn more cash thus improving Chinese rural life by making the farmers rich. The missing link was how these farmers were to avoid starvation while on the path to riches.)

Living and maintaining a delicate balance with nature is the foundation of Sitting Bull's comment. Soil is the growth medium for plants, the primary producers. Our first project in 1999 (that led to the creation of the RTC-TH) dealt with effective soil management: soil erosion management and soil improvement using compost. Any plot of land is constrained by natural environmental conditions to produce a quantity of food. That determined a "natural" capacity to support all forms of life (human included) for that place. To expect the land to support more is to gamble with local food security and the future. You may win (short term), but you often lose (long term.)

There are no easy answers. But it is clear that greed has driven agriculture to the point of being an "enemy" of the natural environment. Sustainable agriculture is a middle path between widespread environmental degradation or people living in closer balance with nature. The lessons of the past are as pertinent today as they were then:

- Native vegetation and ecology are key factors in a dynamic self-regulating "balanced" system. Such a system is characterized by biodiversity that provides the reservoir enabling adaptation to changing environmental conditions.
- Clearing the land (especially slopes) leads to increased soil erosion. This cascades into problems of increased floods and sedimentation.
- Effective soil and water resource management requires coordination and dedication best achieved under peaceful conditions and cooperation.
- Agricultural technology (utilitarian applications) without scientific knowledge of local ecosystem can produce unimagined chaos (sometimes occurring over unimagined generations; Nature has more time available than do people).

[Editor's Note: In all fairness to past generations, human activity has always had an impact on the environment. The "noble savage" living in total harmony with nature may be more romantic fiction than reality. At the same time, some cultures have a more harmonious perception of their role as being part of nature rather than being the master of nature.

Undoubtedly, even sustainable agriculture impacts the local natural ecology. The optimistic hope is that farmers using sustainable methods help maintain their local natural biodiversity (or even help to restore some of it). We have so much yet to learn about the natural world and its inner workings. In the past, increased population created pressure to produce more food by exploiting nature. It seems we need more family planning as we begin to approach the soil and water resource limits of agricultural production.

Earlier in history, nature seems a limitless reservoir of resources. Today, we recognize Earth systems are much more limited and fragile that we originally thought. The natural systems are dynamically self-regulating. The "natural balance" can and has changed over geologic time. It does NOT have to include humans. Paleontology clearly revealed the demise of many species before our time.]

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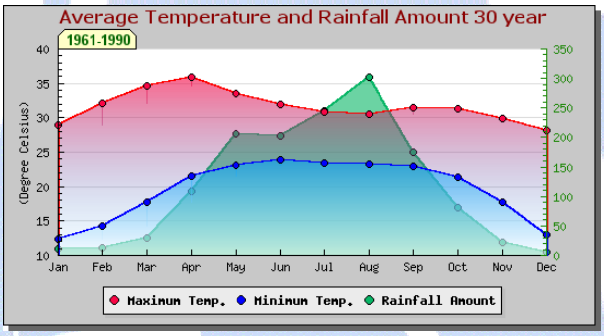
2013 Dry Season Climate Watch

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	2011	77.48	9	2012
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	
Mar	29.2	3	31.24	2		24.63	3	
Seasonal Acc Σ	52.2	9	26.91	5		170.44	19	
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

Ironically, TV news aired clips of the Thai army delivering water to villagers while we seemed to have ample water supplies in our area. April started with an unusual intense evening thunderstorm. Intense lightning accompanied with several hours of very welcomed rain for our farm.

Mar 2013 climate statistics show less rainfall than the 30 year average with the same number of rain days as the 30 year average.

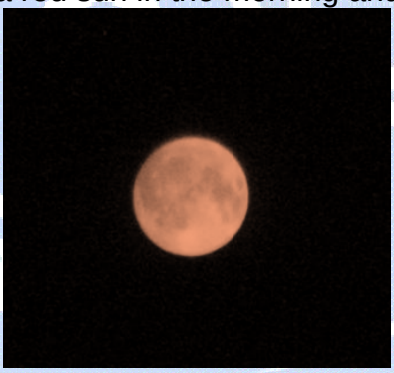


The seasonal accumulated totals show Thawangpha actually received more than 3 times the seasonal 30 yar average rainfall in more than twice the number of rainy days as the 30 year average.

Ironically, many farms in our area are noticeably drier possibly due to the high pressure systems over the area.

Red Sun / Red Moon Season

It's time for people to prepare their fields. That means burning and lots of smoke. The increased smoke creates a red sun in the morning and a red / orange moon at night.



Despite a government campaign to stop the burning, old habits die hard. Each morning starts with the acrid odor of smoke and new ashes to sweep off the porch. Now, only the rain can sweep the sky clean.

"No burning for 80 days!"

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New Home for Sparky and Sam (continued)

Work stopped for 2 days when workers helped with a local emergency repair. Work resumed on 16 Mar, and our photo summaries continue.

16 Mar Day 18: Three men on site, 2 out of 4 tasks completed: all stuccowork was done and the rain skirt was installed. Braces for the slats are about 80% done. These 2 men then set to install the rain skirt. One man cut the sheet metal, then helped another to position it for the final installation. The stucco worker resumed putting up the slats. The different size rafters required fitting individual slats.

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17 Mar Day 19: We got more teak for the slats today. Work continued on the bracing for the slats, installing more slats, and reinforcing the rain skirt. The copper ground plate was positioned for the station ground rod.

Due to the slanting roofline, the slat lengths had to be incrementally increased approaching the roof peak. Slat spacing had to be coordinated with girders and the rain skirt braces.

Installing the slats took a 3 man team. One person cut the slats while 2 men installed them.

It is starting to look more and more like our envisioned sketches. The end is around the corner.

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18 Mar Day 20: They completed making the slat braces. This enabled everyone to focus their efforts on putting up slats. The major challenges were cutting slats to adjust for girders. This slowed some of the work along the north wall. On the west wall, the teak tree girder presented a problem as the circumference of the tree projected beyond the vertical alignment of the wall. They cut the slats to allow for the curve of the tree. The varying width of the slats had to be matched above and below the girder in order to maintain the slat spacing for symmetry.

At the end of the day, they completed the work.

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Construction work paused for 2 days while some workers attended a funeral and others were called away to family and farm matters.

21 Mar Day 21: Eight workers showed up today for the pouring of the concrete floor for both the enclosed and open carports. The various tasks included grading the floors, making the forms, placing the steel reinforcing mesh, mixing and pouring the concrete, grading the poured concrete for proper drainage, and finishing the concrete surface. We called for additional loads of sand and gravel. All the work was by hand. We had the advantage of our wheelbarrow.

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22 Mar Day 22: Five workers completed the concrete paving of the carport and adjacent walkway. At this point, all the major structural work for the expansion project is done after 22 working days.

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More Waste Not, Want Not

Having lived in a highly developed country of abundance, much of the discards become useful resources in rural Thailand. Motivation for our conservation comes from reading about resource scarcity in other parts of the world. It makes us more appreciative of what we have. We are very conscious of reducing waste.These conservation practices also serve as lessons in the REEEPP program at Ban Na Fa Elementary School.

We used a magnet from a discarded speaker as a magnetic "broom" to pick up any used and loose nails on the construction site. This improved work site safety. We sifted out the usable nails. What is useable goes to the farm. The rest we set aside with the recyclable metals.

Empty cement paper sacks from the project go to the farm to cover ripening fruits. This is a simple non-toxic pest control method. After the fruits are picked, the paper is used for fire starting in the farm outdoor.

Abundant teak wood scraps became a source to make some simple stools for the farm and around the house. These short stools are common here. We picked scraps that required little or no additional cutting to make our stools. Thus, no two are really the same size.

Many Thais sit on the floor or squat when doing so work in the shade. The critical dimension is the stool height.

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After nearly 4 years of apply compost to the garden, the soil has shown little or no improvement. So we decided to try using raised beds to create small plots of enriched soil. We gave the teak used for the concrete mixing tub a new life. It is now in the family garden ready to create a new raised bed / composting bin. And we have another example for a "reduce, re-use, recycle" lesson.

Here is another project using carport scrap wood: folding saw horses. We planned these to be the same height as the carport wall so we could take advantage of the sill with a saw horse. Folding saw horses are more easily transported and take up less storage space than regular saw horses. They can also be used for our antenna projects.

The selected shavings from the saw horse project make excellent tinder for our emergency fire starting kits. So we

diligently collected them and stored them in a zip plastic bag. At the moment it is a rather small collection. We might have enough to start 4 small fires. Oh well, you have to start somewhere.

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Cleaning Our Well

We cleaned the well at our village site. We borrowed a neighbor's bamboo ladder. The water level was reduced so uncle Tun could cut any tree roots and remove silt from the bottom of the well. The silt is so fine it takes about 2-3 days for it to settle before we can get clear well water again.

The old well cover had seen better days. To get ready for the Thai new year, we spruced things up by making a new well cover using wood and sheet metal left over from the carport expansion project.

Waste not, want not. We replaced the old well cover (above) using scrap wood and sheet metal from the carport expansion project.

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Fruits Forming in the Garden

Here is a brief photo round up of some of the fruits currently growing in our garden (in the village). Also in the garden (but not pictured here as they are not yet bearing fruit) are bananas, papayas, pomegranate, and star apples. [**Note:** We showed you the star apples in a previous report. Burp!]

As you might guess, getting fresh fruit in our daily diet is not a problem. We eat fresh fruit after almost every meal each day. Life here is good (yummy, too)!!

Jack fruit (Artocarpus heterophyllus)

Noni (Morinda citrifolia)

Guava (Psidium guajava)

Starfruit or Carambola(Averrhoa carambola)

Champoo or Rose apple (Syzygium samarangense)

Maprang or Marian plum (Bouae burmanica Griff.)

Mango (Mangifera indica)

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