



RTC-TH Feb 2013 Update

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

ชุมชนตามสิ่งแวดล้อมศึกษาเพื่อการพึ่งตัวเองและยั่งยืนบนบพขนาดเล็กครอบครัวฟาร์ม

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

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Drought Threatens Northern Thailand



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An estimated 31 million farmers will be affected

In January, Thai government officials reported severe drought threatened 24 provinces in northern and northeastern Thailand. (Meanwhile, flooding is occurring in southern Thailand due to heavy rains since the end of 2012.)

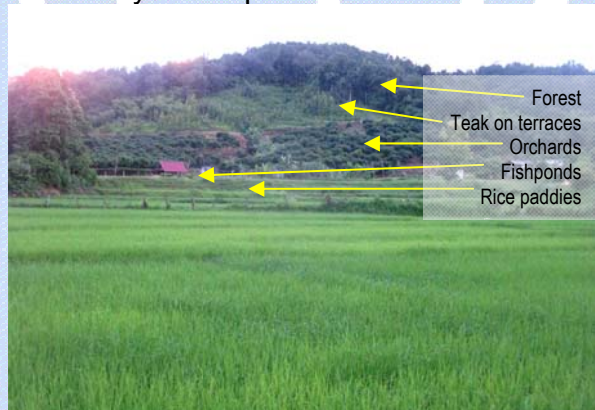
The severe flooding of 2011 pointed out the balancing act necessary in managing the water resources of the Kingdom. Dams on major rivers have a Jekyll and Hyde function: flood control and irrigation. To control floods, dams /

reservoirs need to release water to regulate river water levels in the rainy season. To irrigate crops, the same dams / reservoirs must hold back water for the dry season.

In "normal" times, it all seems logical and feasible. But with extreme weather events becoming more frequent, it is very difficult to know how much water to release when storms dump more rainfall than usual. Flooding occurs, but worse yet, reservoirs begin to fill and dams are threatened with collapse.


In 2011, flooding was extensive in the Chao Phraya floodplain. Numerous industrial areas were damaged. The balance sheet showed the costs were higher there than in the flooded agricultural areas. The decisionmaking priority favors flood control to protect industrial development at the expense of less water for irrigation and agriculture.

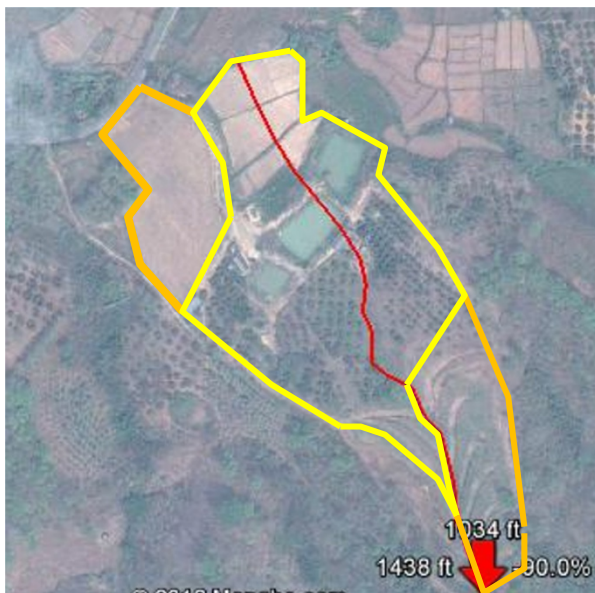
We are fortunate. When the farm was founded in the late 1970s, the rice paddies were located at the base of the foothills. By choosing to implement the King's Theory, we have our fishponds to



Most of our farm is on sloping land

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The original farm (yellow outline): 1) started at the rice paddies (top center), 2) expanded to the area of the fish ponds; 3) then up to the orchards; 4) and finally to the west side of the Central gully (red line). Several years after her father passed away, Saifon and Greg bought the pastureland and the east side of the Central gully (orange outline). The Central gully and fishponds are still the primary water supply features on the farm.

of rice annually. We have been self-sufficient in rice for several years. The surplus is a reserve for mutual assistance to relatives and neighbors. Some can be sold for cash.

The fishponds are a source of animal



We are among the very few farms in our area with fishponds protein in our diet (along with small shrimp, snails, eels, and dragonfly larvae). We also earn cash by selling fish.

No everyone with a pond has water throughout the dry season. With more than 3 months until the rainy season, one neighbor's small pond is drying out.

We feel it is not prudent to wait for government relief. So far, there have been subsidy programs to help farmers. But these short-term measures don't address the fundamental issue.



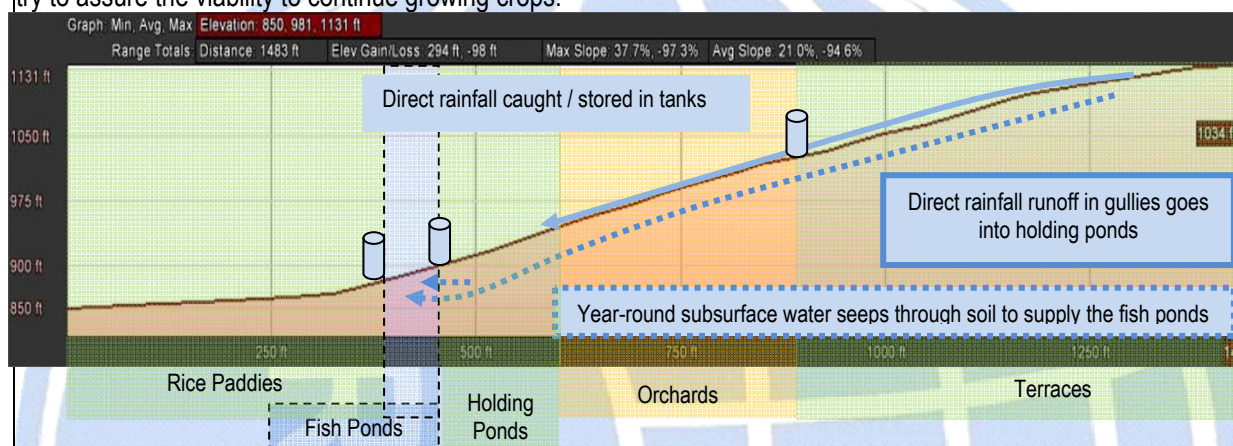
A neighbor's pond: nearly dry with 3+ months to go. be a "one size fits all" solution for all farms. The summary table on the next page shows our water management efforts.

All farms are unique. So there won't

Water Management Summary: Annotated Farm Terrain Profile NW to SE



This terrain profile and table are graphic representations of the various sections of the farm showing their relative position and elevation to each other. Water flows from high to low. We can only manage the water on our farm. Once it leaves the rice paddies, it is gone and no longer a resource for our farm. We cannot impound the water in the rice paddies due to the dynamics of rice cultivation and in consideration of downstream users. Enhanced soil moisture retention may be our best long-range strategy to minimize evaporative water losses and try to assure the viability to continue growing crops.



Note: The terrain profile was prepared using Google Earth. It is not the result of an on-site leveling survey. Vertical and horizontal dimensions are relative and should not be used in calculations requiring precision results.

Elev (AMSL)	Water conservation actions:	Plans:	Functions
Terraces High ~1034 m Low ~1023 m	<ul style="list-style-type: none"> • Terracing • Swales • Mulching • Composting • Planted teak trees • King grass planting 	<ul style="list-style-type: none"> • Redirect flow on access roads to terraces • Planted flow paths 	<ul style="list-style-type: none"> • Slow surface runoff and give it more time to soak into the soil • Protect the long-term subsurface seepage to supply the fish ponds
Orchards Elev (AMSL) High ~1023 m Low ~883 m	<ul style="list-style-type: none"> • Swales • Mulching • Composting • Water Tanks (2) 	<ul style="list-style-type: none"> • Worm composting throughout • Drip irrigation • Planted flow paths 	<ul style="list-style-type: none"> • Possible cash income from teak, bamboo, longan, etc.
Holding Ponds Elev (AMSL) ~937m	<ul style="list-style-type: none"> • Water holding ponds (2) • King grass planting 	<ul style="list-style-type: none"> • Deepen central gully holding pond • New pond between ponds & paddies 	<ul style="list-style-type: none"> • Impound gully runoff • Sedimentation of runoff • Overflow goes to the fish ponds.
Fish Ponds Elev (AMSL) High ~903m Low ~883 m	<ul style="list-style-type: none"> • Fish ponds (3) • Water Tanks (7) • King grass planting 	<ul style="list-style-type: none"> • Repair berms • Seal inside 	<ul style="list-style-type: none"> • Assure ample water for growing rice • Source of added income
Rice Paddies Elev (AMSL) High ~864 m Low ~850 m	<ul style="list-style-type: none"> • Mulching • Composting • EM Bacteria • Green manure • King grass planting 	<ul style="list-style-type: none"> • Improve dikes and water gates • Consider integrating fish and ducks into the rice paddies • Crab & eel exclusion to protect dikes 	<ul style="list-style-type: none"> • Traditional staple crop for the family diet. • Supplementary crop growing area in dry season

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
Monthly Acc Σ	39.6	7	25.9	5	129.55	12
Feb	12.6	2	1.01	1	-----	-----
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

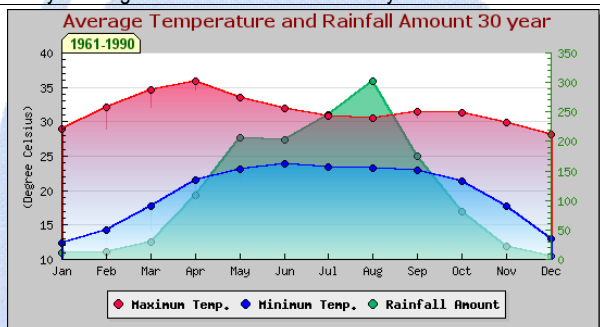
The dry season in northern Thailand is from Nov – Apr. It is sometimes subdivided into a cool, dry (Nov to Feb) and a hot, dry (Mar-Apr) period. For our climate watch effort, the dry season began Nov 2012, so we used those data in the 2013 columns for our chart on the right for the current “accumulated totals” line.

[Note: the 2012 column uses Nov-Dec 2011 data.]

The 2013 numbers are deceiving. So far we have 3 X the accumulated amount of

rainfall and nearly 2 X the number of rain days over the 30-year averages. Yet much of northern Thailand is having a drought now. Of course, the hottest part of the dry season is yet to come, so it isn't over until it's over.

It all goes to show how unevenly distributed rain can be. We are keeping our fingers crossed.



New Life for Old Things

Cup Megaphone / Bat Ear Combo

Plastic seems to be everywhere. It surrounds us in modern daily life. You find it in functional forms and items such as coffee and beverage cups. And after use, many of these become trash (at best in bins, at worst on the roadside).

In our various large group outdoor activities, we've had need for megaphones. These were battery powered, amplified, handheld bull horns. Costs ranged from \$25 (US) to hundreds of dollars. But in our quest for no tech / low tech / low cost equipment in our grassroots operations, we decided to give new life to an old beverage cup.



We saved this plastic cup from a trip.



We cut out the bottom with a sharp razor knife



Complete with lanyard



Megaphone in transmit mode



Megaphone in receive mode.



Reviving old technology for the 21st century

hearing problems used “ear horns”.

Think of it as a “wireless” version of the tin cans and string phone system. Now, in rural Thailand, heat and humidity are threats to electronics. By going back to a cup megaphone, we reduce the need for batteries, reduce equipment weight, and reduce trash going to the landfill.

As a “bat ear”, it was the basis for early aircraft detection systems. The use of old technology to our 21st century situation is an example of adaptive technology. It is appropriate for our needs, limited budget, and circumstances. In our rural grassroots EmComm needs, this same technology can help us to acoustically detect inbound helicopters to an emergency landing zone. It is more likely we would hear the aircraft before we could see it. 🌐



Black/white photos from the Internet: free educational use clause



Some examples of early use of acoustic aircraft detection for anti-aircraft defenses.

New Life for Old Things

Bracket Re-birth: Satellite to Solar

We've always said "networking is better than not working". Jimmy, KE7FXM helped us get brackets from discarded satellite dishes. The salt air along Oregon coast where he lives severely rusted bolts. He had to use a torch to cut off the bolts.



Discarded satellite dishes and brackets



Jimmy cutting the rusted bolts to free the bracket

We cleaned up the bracket using a wire brush and sand paper. With a coat of paint (to match Sparky and Sam), it looks like new. We will use the bracket to hold a small solar panel to help maintain the charge in the 12 VDC radio batteries in our EmComm vehicles.



A PVC pipe remnant became the post for the bracket. We can rotate the post to adjust for solar azimuth. Tilting the bracket adjusts for solar altitude. Sparky has separate outriggers for the push-up masts and solar brackets on both sides of the vehicle. This gives us flexibility in setting up operations for optimum solar panel output.



The solar bracket is mounted on a separate outrigger from the push-up mast. This allows for complete solar azimuth and solar altitude adjustments for optimum output from a small light-weight solar panel.

Xin Nian Kuaile!

Happy Chinese New Year! For the Chinese, 2013 is the 4710th Chinese year. This is the year of the Black Water Snake. To learn more about the Chinese calendar and the cycles of animals, colors, and elements, we encourage you to visit www.chinesefortunecalendar.com

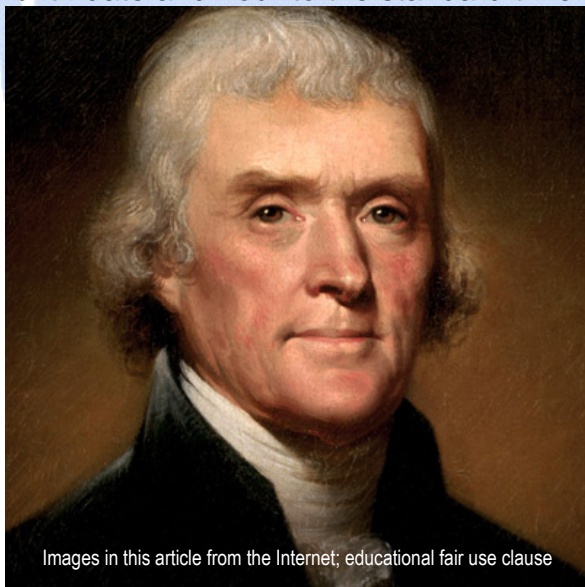
The Chinese calendar begins with the Yellow King, the first king of China (not to be confused with the first emperor of China). The Yellow King's reign began in 2697 B.C. This Snake year begins 10 Feb 2013 and ends 30 Jan 2014.

Whether you believe in Chinese fortune telling or not, it is an interesting cultural opportunity to see another human perspective on time and the cosmos.



PRC Chinese New Year stamp.

Be wary of those interesting paper place mats in some Chinese restaurants showing the Chinese zodiac. They are very imprecise for people with birth dates in the last 2 weeks of January and the first 2 weeks of February. The complexities of the Chinese solar-lunar calendar are way beyond the entertainment scope of those placemats. Another lapse in many books on the subject is the need to adjust your birth date and hour to the standard time meridian of Beijing.



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Thomas Jefferson was born in the year of the snake.

What's in store for 2013? Who really knows? The best advice we can offer is from Sun Tzu: make plans, but don't be rigidly locked into them; be flexible and ready to seize new opportunities when they arise. And that's how it has been with the RTC-TH from the beginning. We've made many plans, and each had contingency plans (Plans B, C, D, etc.) to try to keep us moving toward our goal of self-sufficiency and sustainability.

Life-long learning is another key part of this way of doing things. Life is about change. And people either adapt and change with the times or get left behind or overwhelmed in frustration. Being open to learning new knowledge and skills empowers you to be better able to adapt to the changes.

Picture the snake's long sinuous form. It points to the obvious: life can be a long path full of twists and turns leading you through many ups and downs. Much of life is what you color it from the pallet of your mind.

To our friends and followers and many others who strive for similar goals in self-sufficiency and sustainability, we bid you best wishes for the coming New Year! Be active and pro-active in making your part of the world a better place for everyone. 🌐

A Recycling House Call

We pre-sort our trash to separate and save the recyclables. Then we wait for the recycling man to drive through the village. We just flag him down, and he sets up shop in the driveway to buy what we have. It is a straightforward deal. He checks our pre-sorted collection. They are weighed by category. Out comes his calculator. He hands over the cash, loads up his truck, and is off to another neighbor.



Have recyclables? He will buy.



He sets up shop in our driveway.



Mom starts to bring out our pre-sorted recyclables.



He weighs them by category and keeps a log.



Our tally is nearly equal to 2 days wages!



He buys plastic, glass, metal, cardboard, etc.



Payment concluded, he loads up and gets on his way.

A Neighbor Moves In

The Bank of Agriculture and Agricultural Cooperatives (BAAC aka Tor Kor Sor) owned the land next to us on the south. They recently decided to build a new branch office here. They outgrew the building in “downtown” Thawangpha. Call it progress.



The land next door to our town business location was vacant for several years.



Then the bank decided to build a new branch office. They cleared and began to fill the land.

The land clearing involved “evicting” the previous “tenants” (e.g. bugs, rodents, snakes, and other critters). To avoid being crushed by the bull dozers, they fled and immediately sought refuge on the neighboring lands. Of course, we weren’t very hospitable to these refugees.



About 2 weeks later, filling was completed (notice the boundary with the land in the background).



The foundation is laid out. I think they should be building on the opposite boundary, not next to ours.

Land filling brought noise, vibrations, and dust which were bothersome for our business. But that’s part and parcel of “progress”. The layout for the building was a bit of a surprise. We haven’t seen the plans, but it seems the new building will have a large surface exposed to the afternoon sun. This will put a big heat load on the building. We’ll just have to see what is actually built. Also, we are on the southbound side of the highway. By building on the north side of the lot, they will get minimal visual exposure from the highway. 🌐

Dry Season Farm Views



The farm is not looking its best in the dry season. Our orchards are the main patch of green.



Ground seepage keeps the central pond water level fairly high during the dry season.



The East pond (left) and the West pond (right) water levels tend to be lower than the central pond.



View from the fishponds of the east and central orchards, terraces, to the forest



Our rice paddies lay fallow now. Before the rainy season, we will plant mung bean as a green manure.

Self-reliance in the King's Theory

We strive to implement the King's Theory on our family's farm. To help our readers further understand the King's Theory, we present the 5 aspects to attain self-reliance on the farm. [Note: We need to remind people that the King said that self-reliance cannot be "total" and that people should try to be as self-reliant as possible for their circumstances. We feel that rural families have a keen advantage over city dwellers. Rural people live closer to nature, have more direct and independent access to basic life resources (e.g. water, food). It may be much easier for rural families to attain self-sufficiency, self-reliance, and sustainability.]

From the King's Theory	RTC-TH Practice / Application
State of Mind: One should be strong, self-reliant, compassionate and flexible. Besides, one should possess a good conscience and place public interests as a higher priority than one's own.	The Community-based education methods, the Geographic Systems Model, the 5 Basic Sila, and the Kalama Sutta empower the RTC-TH toward these ends.
Social Affairs: People should help one another, strengthen the community, maintain unity and develop a learning process that stems from a stable foundation.	All Community-based education lessons and programs are shared freely for individual, educational, and non-commercial use via the internet.
Natural Resource and Environmental Management: The country's resources need to be used efficiently and carefully to create sustainable benefits and to develop the nation's stability progressively.	Biodiversity is at the heart of our sustainable agricultural practices. Rainwater harvesting and integrated pest management are implemented on the farm to demonstrate these to the local community.
Technology: Technological development should be used appropriately while encouraging new developments to come from the villagers' local wisdom.	We advocate and practice adaptive and appropriate technology methods in our low tech / no tech approaches to make them easier for other rural farm families to replicate.
Economic Affairs: One needs to increase earnings, reduce expenses, and pursue a decent life.	Our programs encourage "value-added" practices, reducing off-farm expenses, and no debt operating. Debt is the main enemy of small rural family farms.

Here are some examples of RTC-TH programs / lessons developed and used to implement the ideas of the King's Theory. Our goal is to keep small rural family's together on their sustainable farms. This is where we feel people can enjoy a sustainable life and future.



Social Affairs: RTC-TH training is predicated on "mutual respect, mutual benefit" where teachers and learners self-select to participate in learning by freely sharing knowledge and skills.



Technology: IFS is an example of how we advocate low tech / no tech approaches to adapt technology to solve local problems resulting in low cost / no cost solution sets.



State of Mind: Our innovative Community-based Education methods use local knowledge in the context of the Geographic Systems Model to impart a holistic view of the local ecosystem needed for sustainability

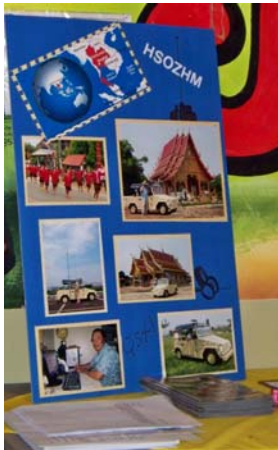


Natural Resource / Environmental Management: SAP is a series of lessons to effectively manage soil, water, and biological resources on the small rural family farm.

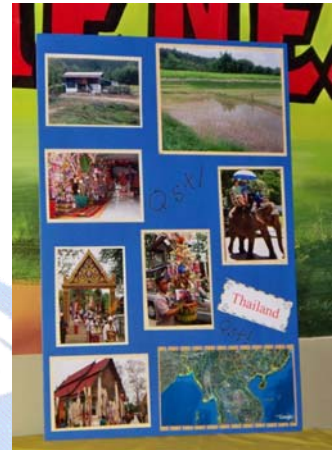


Economic Affairs: FUNDS is the RTC-TH approach to empower small rural family farms to reduce existing debt and avoid future debt to attain self-reliance and sustainability.

RTC-TH Presence at the GERC Dinner



Mark (N7YLA) setting up the reception table



For the past several years, Casa Jimenez has been the home of the annual GERC awards meeting. It is a small family restaurant. Each year, attendance at this GERC event has grown. That's a good sign for Mark, N7YLA, founder of GERC.

Photos from the RTC-TH used in the GERC Kid's Day event were featured at the dinner. We had hoped to stimulate young minds with exotic images of a distant land combined with giving them a glimpse of amateur radio.

Dennis (K16NQG) and Jim (KG6TQT) presented certificates for the RTC-TH. Mark and other GERC memers have inspired, encouraged, and assisted the fledgling RTC-TH amateur radio efforts. 🌐



Representing the RTC-TH, Dennis presented a Certificate of Appreciation to Jim who in turned presented RTC-TH certificates to Mark, Dennis, and Carolyn (KD6RFJ).



Photos for this article courtesy of GERC