RTC-TH May 2012 Update

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

Drought Continues & Flashfloods Threaten

What can you do if this happened to your water supply?

All eyes turn to the sky looking for the SE monsoon to arrive and break the drought. Most major dams and reservoirs have more water in them now than the same time a year ago. But authorities say only 30% of the water can be used for irrigation. They caution farmers to make sure they use water wisely and don't exhaust supplies until the rainy season begins sometime in May.

Immediate concern for drought relief is to get drinking water to the people in the almost 25,000 drought-stricken villages. Emergency relief funds have been allocated to the affected provinces (reports range from 42-48 provinces being declared drought hit areas).

Ironically, other disaster response officials are concerned summer thunderstorms may create flashfloods in certain regions, especially mountainous areas. Landslides may also accompany flashfloods depending on local conditions.

Internet image: educational fair use clause

Some areas of Thailand are prone to flashfloods

.The RTC-TH has a set of lessons on emergency preparedness. About half of the 12-part series is complete. The lessons are available on the web at www.neighborhoodlink.com/RTC-TH_Tech/pages

[**Note:** Most places in Thailand may have one problem or the other. A key point is that the government must deal with both extremes. The implication for individuals and families comes when the government is stretched thin. This is why it is important for individuals and families to prepare for emergencies on their own and not to rely solely on government assistance and relief.]

In This Issue

East Fish Pond Sala

Drought Continues & Flashfloods Threaten	*1*	*Thoughts for Food: Livestock*	*5-7*
Thanks for 10 Years of Great Service	*2*	*Practical Flood Preparations: Sand Bags*	*8-9*
Thunderstorms Visit Thawangpha Area			
RTC-TH EmPrep Strategy	*3-4*	*From the RTC-TH Sketchbook*	*10-11*

Thanks for 10 Years of Great Service!

Neighborhood Link
Your Community Connection

Susan Eisenhower has been our prime NL contact for the past 10 years. She has always working behind the scenes keeping things going (as proof, you can see her artistically rendered image). She is camera shy and not the type to hog the spotlight).

A "Susan" Avatar

Life has a way of filling up the days and hours. In a blink of an eye, time has flown by. So it was that Jan 2012 came and went amidst the continuing Thai floods from 2011, the excitement of the New Year and Chinese New Year, etc. In all the commotion, the 10th anniversary of Neighborhoodlink.com service (NL) fell through the cracks.

We respectfully and belatedly wish to send our heartfelt thanks to Susan Eisenhower and the NL team for the 10 years of excellent service in providing us with a free website that is easy to use. The 10 years with NL is an outstanding contradiction to the warning "You get what you pay for." The NL templates let us cut / paste and upload our reports and documents to the website. We don't need to get bogged down with learning HTML code, etc. And of course, it is free and fits our shoe-string budget. All of this lets us focus our time and energy to the task at hand: providing community-based environmental education for the self-sufficiency and sustainability for small rural family farms.

NL and Susan give us a way to practice the mantra of the information age: The true power of information can only be fully realized when it is shared. Our NL website has enabled us to share our efforts with people around the globe. We have "fans" in North America, South America, Europe, Africa, Asia, Australia, and Oceania. We send hearty thanks to Susan and the NL team!

Thunderstorms Visit Thawangpha Area

Scattered thunderstorms, gusty winds, and hail were forecasted for northern Thailand most of the second half of April. We got some heavy rain and very loud thunder. Lightning was indicated within 1 km / ~ ½ mile from us. Intense showers fell, but no flooding was reported.

Power was cut several times during the last 2 weeks of April. Some were minor lasting only several minutes. But on two occasions power was out for several hours in the early evenings to the wee hours of the morning (~2 am).

This meant no lights, TV, Internet, or any of the normal trappings of modern life. Carrying a flashlight with you is a good habit. As you might imagine, no electricity in the summer when temperatures and humidity are high is no fun. There is no escaping the heat. If winds were blowing, you might get some respite. But trying to sleep at night without a fan working in the room is what we imagine it might be like to be invited to dinner by modern cannibals and put into a covered crock pot on low heat. Relief only came in the darkness of the early morning when we became aware the ceiling fan was humming away to tell us the power was restored.

RTC-TH EmPrep Strategy

When it comes to emergency preparedness, the RTC-TH slogan is "Hope for the best; Prepare for the Worst." For most Thai people, especially the rural poor, emergency preparations seems more like a luxury as they struggle to just get by and make ends meet. The impact of the prolonged 2011 floods in Central Thailand revealed: 1) many people were not well prepared and 2) the floods lasted well beyond the "worst case" scenario that most people could have imagined. Some areas were under water for nearly 4 months.

On the international scene, the Mar 2011 triple whammy in NE Japan saw an earthquake-tsunami escalate to include a nuclear crisis that seemed to exceed the "worst case" scenario of the Japanese nuclear industry (and that of some other leading nuclear powered countries).

All of this caused us (in the RTC-TH) to question if our "worst case" scenarios are limited by our stunted imaginations? At the risk of going off the deep end and making the task of emergency preparedness seem impossible, we need to reassess what we think of as the "worst case."

But how do we get started? It should be obvious the "worst case" is different for different geographic locales. It seems a reasonable place to start is with the Geographic Systems Model and the matrix of geo-hazards in our area. First, recognize the hazards that come from the different environmental spheres: atmosphere, lithosphere, hydrosphere and biosphere.

Reviewing the history of Nan Province, it seems flooding, landslides, fires, social unrest, and pandemics were the major concerns. The flooding occurred largely due to severe storms and dam failures. We then considered the "driving force" for these events and made the matrix seen on the next page.

The 2011 Thai floods lasted longer than expected.

Relief was unable to respond everywhere effectively.

People in more remote places waited longer for help.

Photos above are from the internet: educational fair use clause

This matrix was completed from the left to the right. The logic was to indicate what an item in the left column could trigger relative to other types of disasters. For example, a severe storm can cause landslides, floods, lightning, and wildfires. It could be indirectly responsible for a pandemic/epidemic or lead to social unrest. On the other end of the spectrum, social unrest could lead to people taking actions that cause floods (e.g. destroying dams, arson, or bioterrorism acts.).

	Response to the driving force / Driving force	Severe Storms	Lightning	Landslides	Earthquakes	Floods	Wild Fires	Pandemic	Social Unrest
A	Severe Storms		X	X		X	X	2	2
	Lightning						X		
L	Landslides					X		2	2
	Earthquakes			X		2	2	2	2
H	Floods			2				2	2
B	Wild Fires			2		2		2	2
	Pandemic						2		2
	Social Unrest					X2	X2	X2	

Note: A = Atmosphere; L = Lithosphere; H = Hydrosphere; B = Biosphere
"X" = primary event; "2" = secondary event

In our opinion, natural disasters can lead to, but do not necessarily cause social unrest as a logical outcome. However, lack of adequate and timely response by authorities often fosters a situation ripe for social unrest.

Once you have identified the events pertinent to your area, the next task is to try to consider which can happen in what combinations and sequences. It doesn't matter if any of these combinations / sequences actually have happened in the past in your area. Just consider what the term "unprecedented" means. Then consider the possible significance of the phrase "There's always a first time for everything." Consider the impacts and plan accordingly.

There are no rule books here. Different circumstances and cultures will result in different combinations. Start with yourself and your family as the initial unit. You have more control at this level. The larger the group and the higher the level of social unit, the less control you have. If you and your neighbors share a similar view, the easier it will be. If you encounter resistance, don't engage in persuasion or confrontation. Fall back and rely on others to self-select. You know what you need to do for yourself. Take action and be a living example for others. With many natural disasters it is not "IF it will happen" so much as it is "WHEN will it happen." When the crisis unfolds, you will be prepared. If the catastrophe doesn't happen in your life-time, you are OK. If it does happen, you are prepared and have a better chance of being OK.

Finding the proper balance is the challenge for most of life's activities. Start by having an individual belt bag or back pack for each family member so they can get by and make it home or to a pre-determined family rally point. When everyone has this basic kit, move to having everyone equipped for 72-hours endurance. When that is accomplished, work toward a 1-2 week capability; then 1 month endurance; 3 months, 6 months, 9 months, on to a full year. We have a 1 year supply goal in mind. But due to the year round growing season, we expect to have a renewable food supply on hand to supplement our preparedness stores.

Back Pack

72-hr Kit

1-2 Week Kit

3 Month Kit

Images from the internet: educational fair use clause

Thoughts for Food: Livestock

Part of life is learning from past mistakes so you don't to repeat them. Future learning can be assured by making new mistakes to learn new lessons. In reviewing the history of our farm, we began re-thinking about livestock on the farm.

One sister raised pigs for a while.

No More Large Animals: We decided to avoid having larger livestock (e.g. pigs and cows) on the farm. In the past, feed costs became a problem. We didn't have adequate feed grown on the farm for the pigs and cows. That meant spending money to buy commercial feed. This was costly, and became more costly as fuel prices rose. These uncontrollable cost increases painted a gloomy picture for possible earnings. We figured we can get animal protein from smaller less costly livestock. [**Note**: We may consider have 1 pig depending later on.]

On-Farm Feed = Sustainability: For us, on-farm feed is the key control on livestock production costs. We used the matrix below, to identify on-farm feed for smaller livestock we can consider for our farm. [**Note:** Most of these we had before, but a lack of labor caused us to phase them out last year. Re-introducing livestock to the farm depends of resolving this key issue.] Currently fish are the only livestock on the farm. All the others need to be re-introduced.

Some Possible On-farm Food Sources

Livestock type (under consideration)	Aquatic insects	Bugs	Plant Material	Kitchen scraps	Snails	Snakes	manure	Worms	Compost Tea	Compost
Fish	X	X	X	X	X			X	X	X
(Guinea fowl)		X						X		
(Chickens)		X	X	X				X		
(Ducks)	X	X	X	X	X			X		
(Geese)	X	X	X		X	X		X		
(Turkey)		X	X					X		
(Goats)			X							
(Worms)			X	X			X			X

The matrix shows bugs, plant materials, and worms are eaten by the most different livestock types on our list. The plants and bugs are already present on the farm in good supply. We can easily set up bins for worm composting, and that will give us a steady worm supply. Having a secure renewable on-farm food supply for the poultry will go a long way toward sustainability.

Another sister had some cows for a while.

The biggest problem with using commercial feed is the rising costs are linked to oil prices. When oil prices go up, so do manufacturing, transportation costs. These are often passed along to consumers. Reducing these off-farm expenses reduces costs, helps stretch the budget and adds to the potential

profit margin.

We also created a matrix of possible livestock products relative to our self-sufficiency needs and potential "value added" products. We will use this to help us try to decide which livestock to keep on the farm relative to future income potential. The list can also give us insights to the starting sequence. The key is to balance the livestock with the on-farm resources for a sustainable operation. Any income would help offset inflation / currency fluctuations and maintenance costs.

Duckweed is an easy to grow renewable feed plant.

Item		Where on farm	On-farm feed	Function on farm	Salable products
Fish		3 fish ponds; some in holding ponds during wet season	•Bugs •Plant matter •Aquatic insects / larvae	•Food •Mosquito control •EM bacteria •Possible income	•Fresh fish •Dried fish •Salted fish •Smoked fish
(Guinea Fowl)	Meat	Make coop; need to share with some chickens for surrogate parenting	•Bugs	•Alarm •Pest control •Manure •Possible income	•Live birds •Meat •Feathers •Eggs
	Eggs				
(Chickens)	Meat	Make coops over fish pond (esp pond for baby fish and tilapia)	•Worms •Bugs •Kitchen scraps	•Food •Pest control •Manure •Possible income	•Live birds •Meat •Eggs •Roast chicken
	Eggs				
(Ducks)	Meat	Existing pen with ranging in rice paddies and farm	•Worms •Snails	•Food •Pest control •Manure •Possible income	•Live birds •Meat •Eggs •Roast duck
	Eggs				
(Geese)	Meat	Existing pen (portable fencing to control grazing area with rotation plan)	•Worms •Grass •Snails •Snakes	•Alarm; Anti-snake •Food •Grass control •Manure •Possible income	•Live birds •Meat •Eggs •Roasted goose
	Eggs				
(Turkeys)	Meat	Existing pen	•Bugs •Plant matter	•Food •Pest control •Manure •Possible income	•Live birds •Meat •Eggs •Roasted turkey
	Eggs				
(Goats)	Meat	New pens (on terraces; combine with manure / worm compost pits) or cow shed; rotating stake out where brush clearing is needed	•Brush on the terraces & boundaries •Grass	•Food •Brush control •Manure •Possible income	•Live goats •Meat •Shish kabobs, stew •Goat milk •Goat cheese
	Milk/ Cheese				
Worms	Babies	New bins in new building	•Compost •Soil •Manure	•Compost reducer •Fish food •Chicken food •Duck food •Geese food •Possible income	•Live worms •Worm castings •Worm tea •Compost
	Eggs				
	Castings				
	"Tea"				

Green shading = exists on the farm Tan shading = under consideration Bright green shading = "valued added" product

Grow what you eat; Eat what you grow: This is the basic philosophical approach we take with our farm. We consider family dietary preferences: Who likes to eat what. We like to eat it, that's the main reason why we grow and raise what we do on our farm.

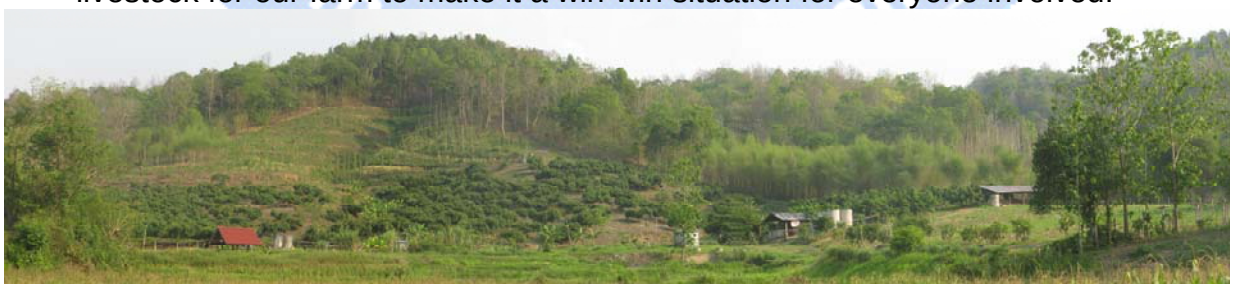
From a financial perspective, our primary goal is to break even. We are not a commercial farm seeking to make a profit. That's why "possible income" was listed last in the column "Function on Farm". Surpluses are used for barter or cash sale "if local market conditions are favorable" (according to the King's Theory). Our main focus is to achieve food security, self-sufficiency, and sustainability. We don't expect to achieve these at a 100% level. It is too hard to do anything perfectly. We seek a reasonable balance of these goals relative to ourselves and farm. This is consistent with the King's Theory when he urges people to "be as self-sufficient as possible" relative to their circumstances.

Farm integration comes down to choosing what to bring to the farm and in what sequence. Multiple functions are a good indicator. For example, worms are a good candidate to start. They can be used in the water and soil management programs as well as for livestock feed. Worms can be used as feed for 6 of the 7 livestock choices. Bugs are abundant on the farm as are various animal feed plants. Having multiple food sources / items gives variety in the diet as well as avoiding having all of our "eggs" in one basket. However, new facilities must be built to keep any new livestock, and funding these projects will be another hurdle in the process.

The loss of the pig shed means new construction will be needed to support re-introducing livestock.

Whether we get livestock on the farm or not, there are some points we keep in mind:

- Plants, as primary producers, are key foundation for the food web.
- It is easier to grow plants than to raise livestock.
- Livestock consume more matter and energy to produce a kg of food than do plants.
- There are plant proteins as well as the proteins produced in livestock.
- Family members like to eat meat. So we need to find a balance of crops and livestock for our farm to make it a win-win situation for everyone involved.



In the past, our farm was recognized as the best in the district due to the balanced integrated approach we took in trying to implement the King's Theory. In light of global climate change, we are hoping to anticipate the impact of those changes and making strategic plans to prepare our family farm to deal with those issues.

Practical Flood Preparations: Sand Bags

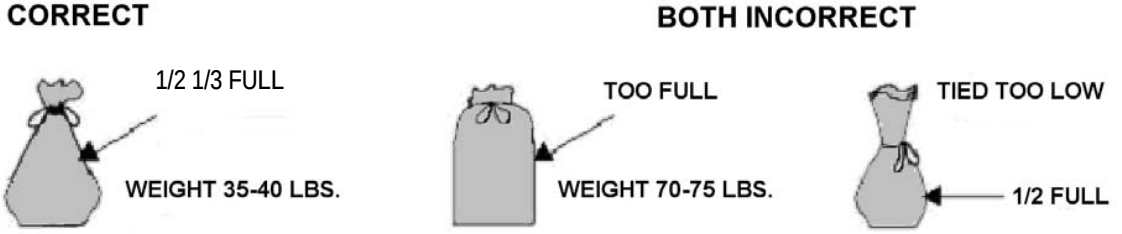
The simple sand bag is one of the most common and effective flood defense tools available. It is easy to make and use. It requires little training to make / fill the sand bags. But you need to know how to properly place the sand bag to build an effective flood defense.

Like so many things in life, what appears to be a very simple task is not always as easy as it appears. Filling a sand bag is a good example.

Sand bags make a cheap and effective flood defense

It usually takes 2 people to fill a sand bag. One person holds the bag open. The other person scoops up the sand and pours it into the bag. The person holding the bag should fold the top (open) mouth of the bag out and down to make a rim. The person scooping the sand needs to be careful to put the sand into the bag and not throw it into the face of the holder or spill sand outside the bag. When using a shovel, the workers must be careful and avoid hand injuries.

It is important to know that "filling a sand bag" doesn't mean to fill it to the top. A sand bag for flood control work is considered "full" when it is 30% or 50% full. This lets you stack the bags closely together for a better fit / seal. It also keeps the bag from getting too heavy and hard to handle. Some people tie the bags closed, others don't. Tying the bags closed prevents accidental spills. Improperly tied bags won't stack properly and could lead to a failure of the sand bag barrier. You have to use your judgment. Obviously if you don't have supplies to tie the bags, you won't have to make that decision.



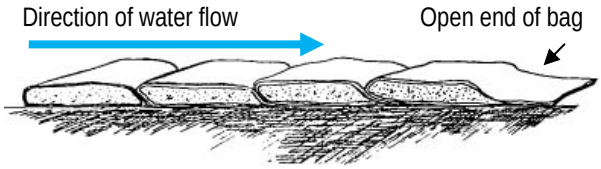
It seems obvious that sand is used to fill a sand bag. But if sand is not readily available, soil can be used. Clay has great sealing properties, but is heavy, and hard to work with when it is wet.

Avoid using gravel due to its weight and the bags won't stack and seal very well. Silt will not support its own weight and will easily erode. [**Note:** To learn more about gravel, sand, silt, clay see the section on soils in "Natural Terrain Study Guide" RTC-TH publication AG-2010-2, www.neighborhoodlink.com/RTC-TH_Tech/pages]

Images from the internet: educational fair use clause

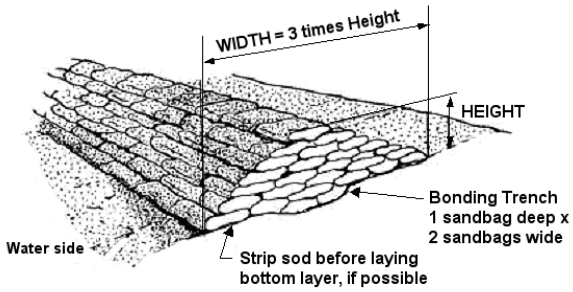
Sand bags are used to make a barrier to keep water out of an area. Some sand bag barriers are free standing while others have one side against a building.

The diagram at the right shows the general guideline for placing sand bags. The first sand bag is laid down length-



The filled part of a sand bag overlaps the open end of the previously placed sand bag.

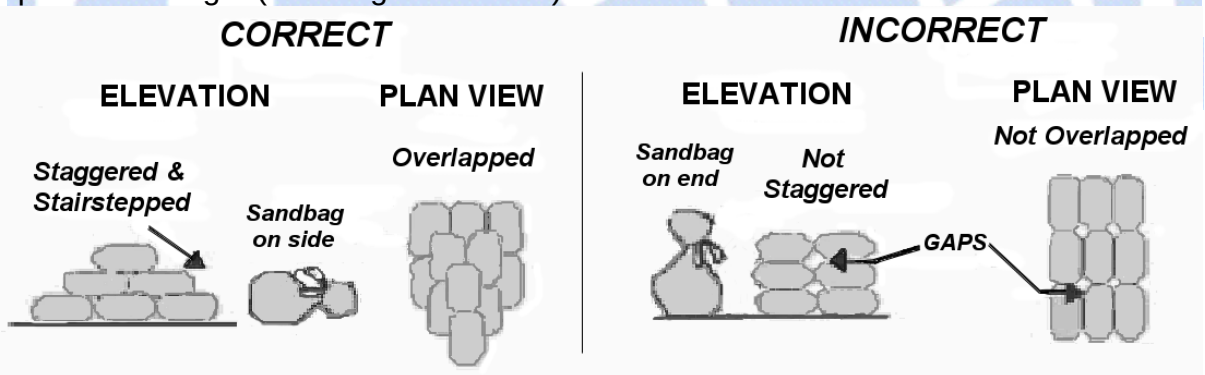
wise. The filled end of the bag points upstream. Lay the open end (or the tied end) of the bag flat so the next sand bag lies on top of the flap (see diagram above).



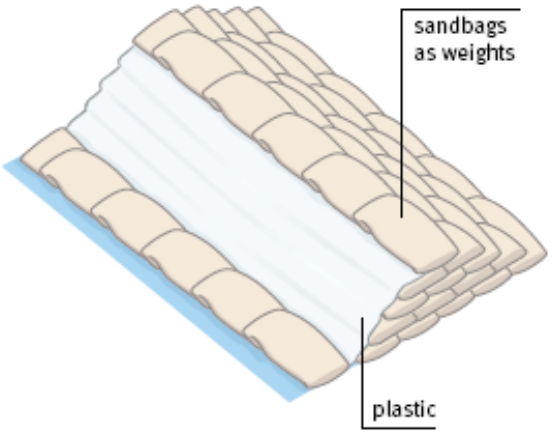
The guidelines for a freestanding sand bag barrier.

If a sand bag barrier will be more than 3 layers high, you need to use the pyramid design shown at the left. [**Note:** Sand bag barriers taller than 1 m / 3 ft need proper engineering design to withstand the water pressure. Lack of engineering input will endanger anyone near the tall sand bag barrier.]

Start by clearing the surface of any sod, then digging the Bonding Trench (1 bag deep, 2 bags wide). The general design for a low barrier is to make the width 3 times the height. The sand bag layers should be staggered and stair stepped for optimum strength (see diagrams below).



A sand bag barrier can be made more "waterproof" by using plastic sheeting (~6 mils thick) secured on the water side of the barrier. This before water gets to the base of the pyramid. Lay the plastic sheet out extending beyond the toe of the pyramid to weight it down with a layer of sand bags. Unroll the plastic sheeting up over the top of the barrier. Place a row of sand bags to secure the plastic sheet at the top of the barrier. Leave unused plastic sheeting rolled up at the top of the barrier in case the barrier must be raised.



To learn other flood fighting methods and how to use sand bags to protect buildings, see http://www.nwo.usace.army.mil/op-e/documents/2004-NWD_Sandbag_Pamphlet.pdf and http://www.nwo.usace.army.mil/op-e/documents/2007-EM-Flood_Fight_Handbook_MVP.pdf

Images from the internet: educational fair use clause

From the RTC-TH "Sketchbook"

A "sketch" of Greg at the Klunk Works computer.

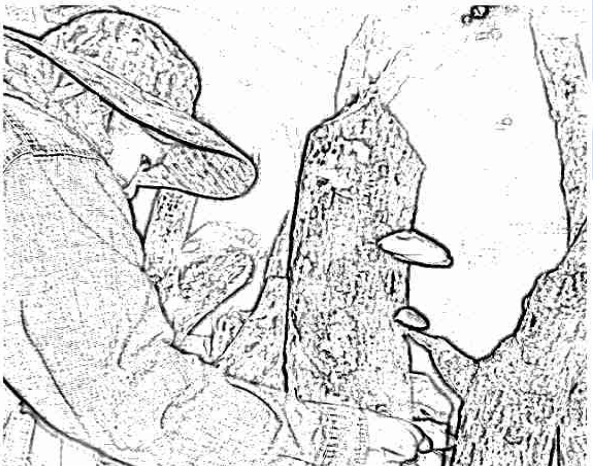
"A picture is worth a thousand words." That's why we use photos to illustrate our lessons. Most lessons are posted to the website. When viewed on the screen in full color, the photos greatly enhance the lessons. But printing the lessons can be costly. Color printing costs more than basic black and white printing. To reduce the cost of printing some of these lessons, we make some lessons as text documents with line drawings. But we are drawing "challenged".

So we were very pleased to find a simple totally free program that can render photos to sketches. Yes, you can do this in PhotoShop®. But that is a very expensive program and it has a very steep learning curve for our busy schedule. We downloaded "Photo to Sketch Standard" from www.Cnet.com. This is really free; it is not one of those "free" for a limited time trail basis offering to sell software to you.

You just load your photo, choose to convert the photo to an ink, pencil or pastel rendering; set the 2 controls ("precision" and "line"), then click the "convert" button and the program produces the result. So far we tend to favor the pencil rendering over the ink and pastel. There aren't a lot of bells and whistles on it. You can't

Mom checking the Long an at the farm.

Pi Oi preparing another delicious meal.



Saifon collecting mushrooms on the farm

Guay Jing, the RTC-TH D.O.G.
(Designated Official Guardian)

preview the results. So if you don't like the results you get, reset the controls and do another "conversion" until you get something you like.

We haven't used it to illustrate any lessons yet. We are having fun learning to use it. With no training in traditional art, we are stumbling around in the dark as to what the results should look like. So at the risk of boring you with our "home movies" and pictures of our "vacation", here are some of the results. This program isn't fancy but we are happy with it so far.

Enjoy. You don't have to be artistically challenged any longer. You can get the program and start turning some of your photos into cards or gifts for your family and friends!

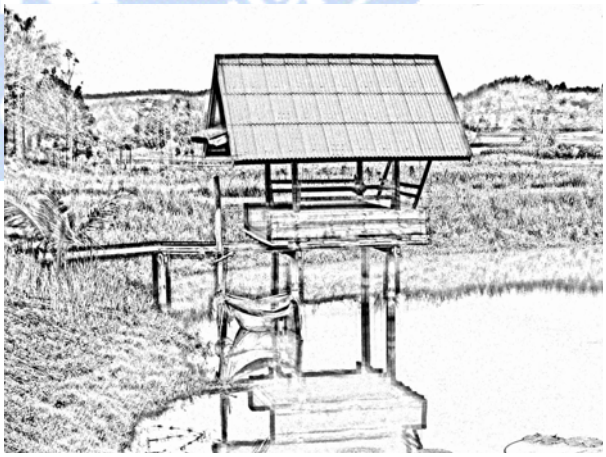
Pi Oi grilling traditional Thai snacks

Mom in the mushroom house on the farm.

Grilled Thai water bugs! Yummy!!

Greg & Saifon Lee: RTC-TH Co-founders

Greg with Sparky in the park.



The sala on the East fish pond at our farm