



RTC-TH Dec 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

Thais Celebrate Christmas in a Big Way

Thais tend to be easy going fun loving people. The kingdom is predominantly Buddhist, Thais will celebrate anyone's holiday and Christmas is no exception. Christmas could be celebrated any bigger than with the presence of pachyderms in the season of presents.

Elephants are a national symbol for Thailand. So they won't be left out of such a big holiday for the many foreigners living, working, or visiting Thailand in December.



For some people, Christmas just isn't Christmas without snow. It doesn't snow in Thailand, so maybe the "snow job" is selling a pudgy pachyderm as the Thai version of Santa Claus.

The whole thing seems to go over well with the students. As you might expect, learning English isn't just about grammar and language. Culture is an integral part of learning a foreign language. There are numerous western organizations and missionaries in Thailand for many decades. So Christmas is not new to the Thais.

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Most Thais we know tend to join the festivities of their western friends. And of course, Thais married to westerners tend to get more active and festive during the holidays.

Businesses try to make the best of it by trying to cash in on the holiday spirit. So Santa's sleigh and reindeer appear in many shop windows (especially in the larger cities with bustling tourism and foreign populations).



Thai hospitality is never in short supply. Despite the ongoing flood conditions in several provinces, Thais and their big pachyderm pals present a big performance for Christmas in Thailand.



Universal / International Best Wishes

Near the end of the calendar year, our friends of many cultures and faiths around the world engage in a variety of celebrations of diverse origin. To all of them, we send our best wishes for peace, good health, abundant happiness and good will. We also send our thanks for all of your good thoughts and support for our efforts to make the world a better place for all future generations.

-----Saifon & Greg Lee

IPM: Host Plants for Beneficial Insects

To round out our introductory series on IPM (Integrated Pest Management) topic of companion plants, here is a brief introduction to beneficial insects you can attract to your garden.

COMPANION PLANTS	ATTRACTED BENEFICIAL INSECTS									
	Assassin Bug	Big-Eyed Bug	Damsel Bug	Damselfly Dragonfly	Lacewing	Lady Beetle	Mantid	Syrphid Fly Hover Fly	Tachinid Fly	Yellow Jacket, Parasitic Wasps
Alfalfa	X	X	X	Rivers, stream, ponds.		X	Areas of green vegetation			X
Artemisia						X				X
Buckwheat								X		
Candytuft								X		
Carrot	X	X			X					X
Coriander									X	
Fennel								X	X	
Goldenrod	X	X				X				X
Horehound								X		X
Ivy									X	X
Morning Glory						X		X		
Sage										
White Clover										X
White Sweet Clover									X	X
White Flowered Scented Geranium										
Yarrow						X		X		X



Assassin Bug



Big-Eyed Bug



Damsel bug



Dragonfly



Lacewing



Lady Beetle



Syrphid Fly / Hover Fly



Tachinid Fly



Yellow Jacket / Parasitic Wasp

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TARGET INSECTS	BENEFICIAL PREDATOR INSECTS										
	Assassin Bug	Big-Eyed Bug	Damsel Bug	Damselfly	Dragonfly	Lacewing	Lady Beetle	Mantid	Syrphid Fly Hover Fly	Tachinid Fly	Yellow Jacket, Parasitic Wasps
Aphids	X	X	X	X		X	X	X	X		
Armyworms										X	
Arthropods	X										
Bed Bugs											
Beetle Grubs											X
Beetles								X		X	
Cabbage Loopers										X	
Caterpillars, Small Caterpillars	X	X	X					X			X
Chinch Bugs								X			
Cockroaches	X										
Codling Moth										X	
Corn Borer										X	
Cutworms										X	
Ear Wigs	X							X			
Flea Beetles		X									
Flies	X				X			X			X
Grasshoppers								X		X	
Green Stink Bugs										X	
Gypsy Moth Larvae										X	
Hoppers				X							
Insect Eggs		X				X					
Leafhoppers		X	X					X			
Mealy Bugs							X				
Midges					X						
Mites								X			
Mosquitoes					X						
Moths					X						
Other Insects				X		X		X			
Plant Sucking Insects									X		
Sawflies							X			X	
Scale Insects											
Small Arthropods											
Soft-Bodied Insects								X			
Some Ants											
Sow Bugs, Woodlice								X			
Spider Mites		X	X			X	X				
Tent Caterpillars										X	
Termites	X										
Thrips								X	X		
White Flies		X									

Flood Planning Ideas for Your Home



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Flooded houses.

There are many dimensions to sustainability. The RTC-TH begins with using the Geographic Systems Model to inventory regional / local geo-hazards. Each environmental sphere (e.g. Atmosphere, Hydrosphere, Lithosphere and Biosphere) are associated with natural forces and processes that can pose potential danger either singly or in combination.

Note: For details about the Geographic Systems Model, see RTC-TH publication AG-2010-1 “Introduction to Geography” at www.neighborhoodlink.com/RTC-TH_pages

The recent massive floods in Thailand inundated much farm land. Estimates are 25% of the rice crop was destroyed. Unfortunately, much of this was in floodplain areas that we would have avoided. But many people are located there by cultural inertia: their families have lived there for generations.

For people who choose to stay in flood prone areas, it may be impossible to protect their farmland. To sustain themselves, they must have sufficient reserves to literally “weather the storm” and start over after the flood. It helps if their home could be protected and be the base for their recovery.

Although many houses were destroyed or damaged in the 2011 floods, here are some ideas that should be considered when rebuilding.

Do Your Homework:

- **Re-assess Your Location:** Use a map to determine your house location to:
 - All surface water bodies (e.g. lakes, ponds, rivers, streams, canals, irrigation ditches). This will tell you the source and direction of possible future floods.
 - All transportation systems (e.g. airports, harbors, highways / roads, bus routes, motorcycle taxi stands, etc.) This will tell you about access to / from your house if you need to evacuate or how relief / aid might come to you.
- All government emergency centers: (e.g. district / sub-district offices, hospitals, police stations / boxes, emergency shelters, schools, etc.) This will tell you the source of possible aid or where an evacuation site may be.
- **Flood Assessment:** Use tracing paper or clear plastic to make overlays for:
 - **The maximum water depths** for each year a flood occurred. This may be based on memories of local residents. Connect the water depths to the locations on the map you created above. For the most recent flood, measure the height of the water stains on walls or poles in your house. This will tell you how high you have to be to avoid the worst floods.
 - **The dates of the floods.** If possible, get the start /end dates. At the very least, get the months the flood occurred. Talk to local residents and look at

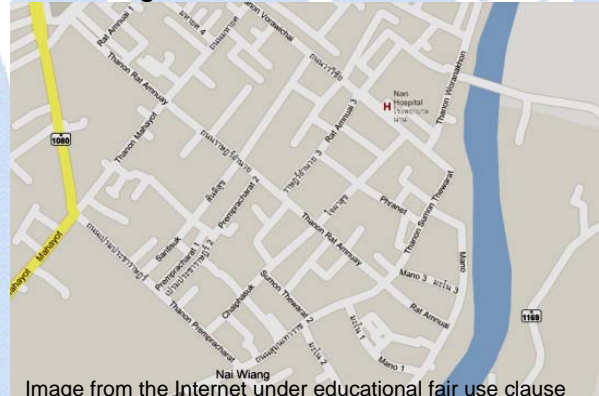


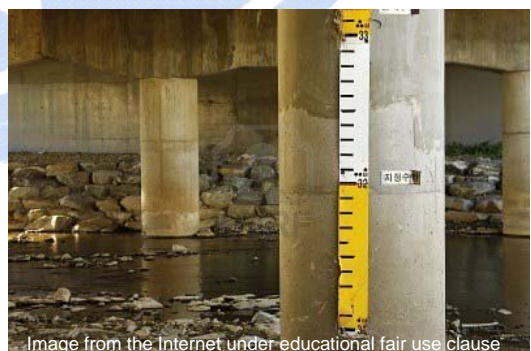
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least, get the months the flood occurred. Talk to local residents and look at newspapers for any information about how long it took for relief to come and how it came. *This will tell you when a future flood could occur and for how long you need to prepare emergency supplies.*

NOTE: World climate / weather experts recently met in Africa and concluded that the severe extreme weather of recent years will occur with unusual intensity and may occur with more frequency than in the past. Knowing this, you should prepare for the possibility of worse floods than those in the past.

Take Action:

- **Rebuild Higher:** Use the flood depth data for the deepest flood as a start. Then depending on your budget and attitude, consider adding a safety factor. For example, if in 2011 the flood water in your area was 2m deep, consider raising your house 3 m.
- **Move to Higher Ground:** You can relocate to higher ground. This may be the most expensive option as you must buy other land or a house and move there. When considering a move, use the Geographic Systems Model to conduct an inventory of potential geo-hazards so you can avoid possible disasters or at least minimize your exposure to them.
- **Raise Your House:** If you decide to rebuild, raise your house. This can be done by filling in the land to raise the foundation or by using traditional Thai architecture and building on taller stilts. The height is based on the deepest flood water in your area. Consider adding a safety factor for future floods. Plan to put all major appliances upstairs and use the ground level for things that are easily moved.
- **Water Depth Marker:** Make your own water depth gauge on a pole you can easily see from your front windows or door. Of course, this measurement is relative to your ground level and gives you an accurate idea of how deep the water is at your house. When a flood



begins, keep records of the water depth and note the date / time (hr, min, sec) of the measurement. This will help you to know how fast the water is rising. It could be an important indicator to warn neighbors about the flood conditions.

- **Improve Your House:** Reports from the recent flood show the problems begin with lack of clean drinking water, lack of sanitation / hygiene and then escalate to shortages of food, electrical power and rising water. These problems point the way to improvements you can make when rebuilding.

- **Keep Sand Bag Materials Handy:** The very minimum would be a sand bag to plug your toilet from backing up during a flood.
- **Install 3-wire Grounded electrical system:** This should be a standard electrical safety feature of all construction. So rebuilding after the flood is a good time to do this. Place the circuit breaker box and all outlets ABOVE the highest flood water level.
- **Rainwater Harvesting** (above flood level): Most people catch and store rain water at or near ground level. Your water storage tank needs to be kept above the flood waters. (For information about water in emergencies, see look for EP 3 “Water” in the Emergency Preparedness section at www.neighborhoodlink.com/RTC-TH_pages)
- **Vermin / Varmint Proof Your House:** Put up rat guards on the upper 1m of all house poles / stilts. Design steps so you can lift the upper part out of the water to prevent wildlife to crawl up into your house from flood waters.
- **Emergency Toilet:** The main problem here is flood duration and storage capacity. You need to adapt emergency toilets and storage capacity to your particular situation. A large barrel, fitted with a seat and cover could be a start. The minimum would be to use strong plastic bags. But you need a place to keep them when they are full. You can also consider a floating toilet. It could be set up to drain to a septic tank in the dry season. In times of flood, closing a cut off valve and detaching the drain hose would let it float. Be sure to keep it tethered to the house.
- **Make Medical and General Supply Kits:** Many people didn't even have a basic first aid kit. Look at the contents of many of the emergency relief kits given out in the recent floods. This will give you some idea of what to put in your kits. (See www.neighborhoodlink.com/RTC-TH_pages for general emergency preparedness lessons.)
- **Emergency Power:** Getting a solar system may be too expensive for most families. But you don't have to power up the entire house. Communications is important. Get an emergency AM/FM radio. These often come with a hand crank and

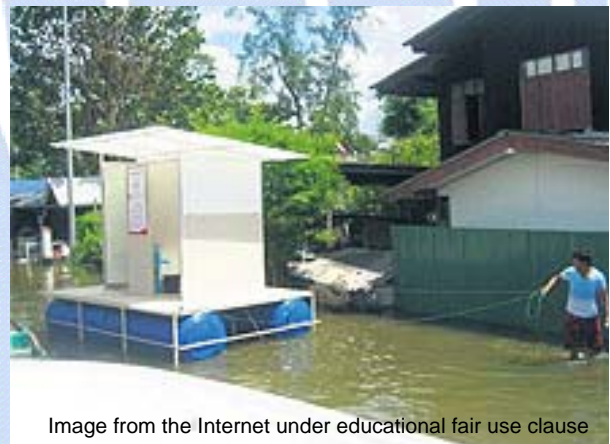


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solar cell and also use regular batteries for power. There are also small solar battery charging units for cell phones. Get LED type flash lights (they use less power so batteries can last longer.

- **Emergency Cooking Fuel:** If you can put aside a spare bottle of cooking gas for your stove. As a back-up, keep a wood burning stove and supply of wood and charcoal above ground level. The less you have to move for the flood gives you more time to do other last minute preparation.
- **Space Efficiency:** Build with an eye to make good use of all available space above the flood level. Use space to store emergency supplies that you may be buying and stocking up just before the flood (in addition to what you have already prepared). Consider installing a hoist or ramp system to lift vehicles up to safety above flood water levels.
- **Room for Others:** You should plan your post-flood rebuilding with an eye toward having company. Most immediate would be elderly relatives or young children of relatives. These are often the most vulnerable in disasters. Consider the floor plan carefully, and if possible, make attachment points for mosquito nets and hammocks in case extra sleeping space is needed. Using hammocks lets air circulate freely around you. This can be handy when there is no electricity for fans or air conditioning.
- **Think Drainage & Clean-up:** Design the ground floor to be “self-draining” or set up for easier draining. For example, slope the floor to a low point so water will gravity flow off your property. Or, make a low point where a sump pump can be placed. Water gravity flows to the sump well to be pumped out of your home. Think ahead and stock pile cleaning and disinfecting supplies. These may be in short supply after the flood.
- **Get an Amateur Radio License and Radio:** This can be a very effective means of communication when telephones and cell phones stop working. You can call for assistance or relay important flood information to local authorities. If you can get a small hand held radio. If you set up a small solar panel, you can recharge a 12 VDC battery, you could be an emergency communicator for your local area. (Find out how to get a radio license in Thailand: www.qsl.net/rast/text/licensing2010.html)



These are some ideas to consider as food for thought. Review your past experiences in past floods and make your own list of action items. Every family's situation is different. Nothing is cast in concrete. And when you have completed your flood planning and preparation, start working on your Plan B just in case you need to evacuate. 🌐

The flood waters persist in some area of Thailand, and a new round of flooding is ongoing in southern Thailand. Floods began in May and will also help ring in 2012. Overly optimistic statements of factories returning to full operation in the first quarter of 2012 are giving way to more dire reports of a much longer recovery of several months or more. We will prepare update reports to our flood photo summary series.

E⁴ for Thailand's Recovery

The floods of 2011 gives Thailand an opportunity to forge a national recovery that can set the Kingdom on the path to a sustainable future based on the 4 E's: Environment, Education, Energy, and Economy. We call this E⁴ (E to the fourth power). Mandating flood reconstruction to conform to the long-term goals of E4 creates a situation of Thailand investing in itself. This domestic spending effort offsets the shrinking export market during the global financial slump.



The Environment

The Environment is the ultimate goal. Life depends on it. The other Es move us toward a sustainable environment for future generations. We see the fundamental duty for governments to strive for clean air, water, adequate food and shelter / safety for all citizens. So of the keys to a cleaner and more sustainable environment rest on a sound education of all citizens, striving to move away from the burning of fossil fuels toward cleaner alternatives for energy, and evolving a more sustainable economic system predicated on a minimum of debt and conducting business in a more responsible and ethical manner.

Improving education is essential to have a citizenry empowered with critical thinking to solve the many problems facing environmental protection and social justice. It will take all the brain power we can muster to make progress. No group can be ignored or marginalized in the process.

Teachers and leaders should teach and lead by example. Students should be taught to become their own best teachers, to share knowledge, to be responsible and ethical citizens. They must be taught that freedom comes with responsibilities to the environment and to others in and outside of their own local areas, regions, and nations.



Education



Energy

The current economies of scale and the lack of cohesive long-term energy policies are a detriment to the environment, public health, and development of clean alternatives to fossil fuel. Thailand. The flood re-construction is an opportunity to mandate clean energy requirements to create a vast domestic market for alternative energy in Thailand. It is consistent with the government's desire to reduce dependence on fossil fuel imports. It also contributes to building a future for alternative energy exports and uses Thailand's production base and infrastructure as a global distribution hub.

Recurring and extended debt of small rural farmers is a root cause of rural poverty. Giving money to farmers has been tried and proved unsuccessful. Farmers need to be empowered to implement sustainable agricultural practices following the King's Theory of the Self-sufficiency Economy. This moves them from poverty to food security. Once that is achieved, small farmers can for cooperatives to sell their surpluses rather than compete against each other. The cooperatives move farm produce into the streams of commerce.



The Economy

Government's Leadership Role

The Thai government can use its purchasing power to set the example and the pace of the clean energy policy. For example, there are 76 provincial offices, 878 district offices, and about 7,255 sub-district offices in the Kingdom. If a basic solar panel and battery set to power radios for emergencies, this amounts to 8,209 purchases and installations. Adding Bangkok and its equivalent districts brings the total to 8,260 units. The government can set an example by requiring these key government units to shift to clean alternative energy. This can be done in a number of ways from using on-site electric power generation via solar PV cells, biogas (from human wastes and trash), to micro hydropower (if local conditions permit). All of these offices then become "show case" examples for local people to see.

Imagine if clean energy standards were mandated for all flood reconstruction, coupled with low interest government loans. That is a huge amount of money available for purchasing clean energy and other environmentally sustainable construction materials. If preferential pricing were given to clean products made in Thailand, it would further stimulate the research, development, and evolution of clean environmental technology and products in Thailand. This would help to offset the losses in the export sector. The rest of the developed world is struggling to recover from the global financial crisis. Thailand has an opportunity to stand apart and invest in itself. Think about it this way. The old business model was to get others to invest in Thailand. But why should they if Thailand is NOT willing to invest in itself?

Education plays a vital role in developing good citizens and skilled workers. Looking at the more developed countries gives insights to the correlation of education / skills and jobs. For example, in the US:

Education Level	Job Categories	Pay
High School Diploma	manufacturing, architecture and construction, distribution and logistics, and hospitality	manufacturing and construction; \$35,000 annually
Associate Degree (2-yrs Trade /Tech) or some college	business, management and administration, and manufacturing, marketing sales and service; transportation, distribution, and logistics; and health science	\$71,000 with an associate degree, and accountants and auditors who earned \$42,200 with some college but no degree
bachelor's degree or higher	science, technology, engineering and mathematics; government and public administration; finance; information technology; and health science	bachelor's degree finance / actuaries average \$121,500/yr; engineering managers in the STEM (science, technology, engineering, and mathematics) earned \$117,100/yr.

Thailand's education system needs to produce technologically skilled and productive workers for the future clean energy industry and not just the existing jobs of today. English language training must be greatly improved if Thais are to be competitive globally. If Thailand continues to follow the path of the developed nations to abuse and ignore the environment for short-term financial gain, they need only look at the state of the economy in those same countries to see Thailand's dismal future. China recently surpassed the US as the world's biggest polluter. But recent reports indicate that unlike the US, China has made larger cuts in green house grass emission than the US. China has seen the light. Will Thailand? 🌐

Local Places Gas Stations

Modern life and transportation is based on fossil fuels. Locally, the choice of gas stations is limited. Thailand imports about 90% of its petroleum. Limited oil production is found on shore with some production in the Gulf of Thailand. Natural gas is relatively more abundant, but the nation imports much of its natural gas from Myanmar and has recently begun importing LNG (Liquefied Natural Gas) from abroad.



PTT is the main station at the north end town



Cosmo at the south end of town.

There are two gas stations on the main highway (#1048) in Thawangpha. On the south end of town (northbound side of the highway) is the Cosmo station. The more popular station is the PTT on the north end of town (southbound side) which has a 7-11 store which is open 24/7 and ATMs for Krung Thai and Kasikorn Thai Bank.



A self-service gas vending station in town



A typical village gas station.

Most Thai farmers need gasoline to run various powered equipment on their farms (e.g. water pumps, weed cutters, spray pumps, generators, and motorcycles). A common sight is a farmer on a motorcycle with a plastic jug of gasoline on the way to his farm. Just about any empty plastic jug will do. Stores in the area sell a funnel with a screen strainer that many people use to filter the gas poured into various farm engines. Diesel is used for tractors and trucks.

Some Europeans who visit our area are surprised to see so many diesel pickup trucks parked in family homes. They had the mistaken idea that they would see villages along mud tracks and people with water buffalos and ox carts. They were quite taken aback and had to revise their idea of what rural Thai villages are like. 🌐

The Most Unusual Turn Lane in Thailand

We have to put this into a special category on the “Must See List” when visiting Thawangpha. Most people driving through the area on Hwy 1048 probably pass it in a flash and don’t even notice it. But if you were to actually use this turn lane or see it from the air, it would certainly stand out.

Below is a side by side comparison / contrast set of images we got from Google Earth. On the left is a typical U-turn / Turn break in a divided Hwy. On the right is our unusual turn lane to get to Road 1170 going to our village, Ban Na Fa.



Aerial view of a normal divided highway turn break (North is to the right; South to the left)



Aerial view of our special turn break to Road 1170 (the junction at the lower right corner of the photo).

As you can readily see, extra vigilance is needed when approaching this intersection when traveling on Hwy 1080.

- Traffic from Road 1170 enters Hwy 1080 and could merge with southbound traffic on 1080, or attempt to cross the highway in order to proceed to a side street in Thawangpha (red arrows).
- Traffic from the side street in Thawangpha can join northbound traffic on 1080 or cross over to make a U-turn to go south on 1048 or use the turn lane to get to Road 1170 (gold arrows).
- Northbound traffic on 1080 can proceed north, make a U-turn, turn left on to the side street to go to Thawangpha, or use the turn lane to Road 1170 (green arrows)
- Southbound traffic on 1080 can proceed south, make a U-turn, or turn right to cross over to the side street to Thawangpha (similar to red arrows)

It goes without saying that any driver following any route should be watching for illegal traffic driving against the flow of traffic on your side of the road. The distance between U-turn breaks in divided highways can be very long. Some people will ride their motorbike on the shoulder of the southbound lanes of Hwy 1080 against the flow of the southbound traffic to get back to Road 1170 rather than go south to the next U-turn. This saves them time and gas, but adds to the mix of traffic at this special intersection. 🌐