

# **Rural Training Center – Thailand (RTC-TH)**



**Community-based Environmental Education  
for the Self-sufficiency and Sustainability of  
Small Rural Family Farms**

# Preparing for Emergencies

# FOOD

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Created by G.K. Lee for the RTC-TH EmComm

EP-4





# An Emergency Preparedness Training Series presentation



Rural Training Center-Thailand  
Emergency Preparedness Community Service Program

**Ready to serve and sustain our community**

For other lessons in the series e-mail [rtc2k5@gmail.com](mailto:rtc2k5@gmail.com)

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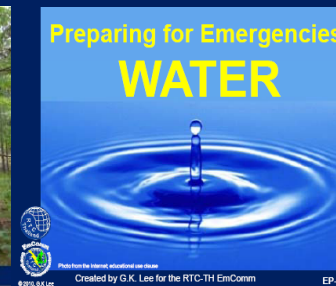
# The EP Lesson Series



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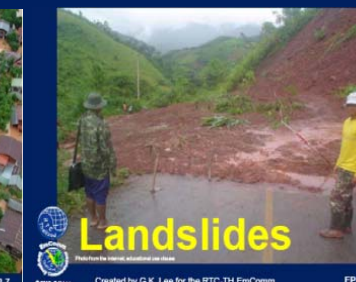
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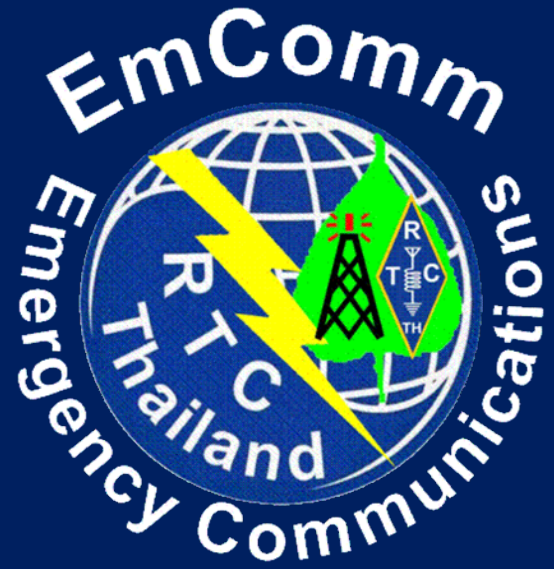
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# A part of the RTC-TH EmComm Program

The Rural Training Center-  
Thailand Emergency  
Preparedness program is a  
community service effort to  
provide emergency

preparedness training for local  
community self-sufficiency and  
sustainability in times of need.





# The Rural Training Center-Thailand (RTC-TH)

is an all volunteer  
organization providing  
community-based  
environmental education  
for self-sufficiency and  
sustainability of small  
rural family farms

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# The lessons were adapted from existing RTC-TH REEEPP program lessons

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# REEEPP

## Rural Environmental Education Enhancement Pilot Program



An innovative, non-traditional community-based environmental education program integrating math, science, geography, English language, and technology lessons for environmental stewardship using interactive experiential learning in outdoor settings at Ban Na Fa Elementary School, Nan Province, Thailand.



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The Rural Training Center-Thailand was created to honor the life and memory of Mr. Tang Suttisan, a father, farmer and former custodian of Ban Na Fa Elementary School who appreciated and valued education.





# Food for Disasters

In times of stress, sleep is a top priority followed closely by good nutrition

Stress is created when you must CHANGE the way you do things.

*Disasters can force rapid changes on you.*



If you don't prepare ahead of time, it is unlikely you will find adequate supplies of water, food, shelter and sanitation materials in a disaster area.





# Food: How much, for how long?

There is no easy specific answer to this question. It depends on your eating habits / needs and the time it will take for help to arrive after a disaster.

International aid agencies have charts and tables about minimum daily caloric intake needed for survival. But these are rather abstract numbers that can vary widely depending on the health of the survivors BEFORE and after the disaster, their age, medical state and environmental conditions, and numerous other factors concerning their level of activity needed to secure their position while awaiting rescue.



The RTC-TH lessons assume you and your family are in good health and survived the emergency without major medical injuries. It is then up to you to adjust your preparations as you see fit.



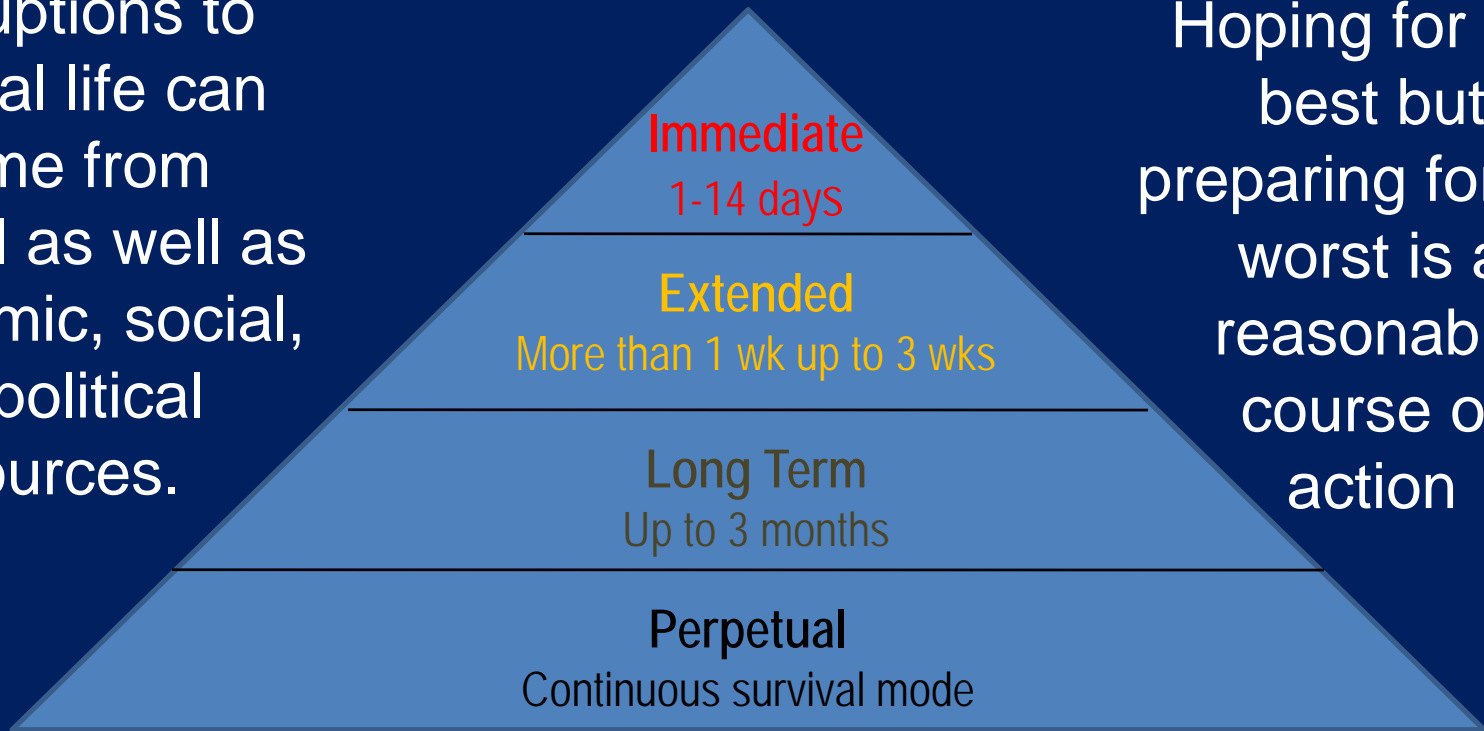


# Food: How much, for how long?

It is better to store more food than to reduce food intake to make supplies last longer.

Disruptions to normal life can come from natural as well as economic, social, or political sources.

Hoping for the best but preparing for the worst is a reasonable course of action



The RTC-TH sustainable agriculture effort combined with the King' Theory of self-sufficiency gives us garden fresh food supplies to supplement our emergency food stores. The gardens are in safe areas relative to disasters for our local area.





# Food: How much, for how long?

The RTC-TH policy is based on self-sufficiency. This means preparing to operate independent of outside aid. This is a “worst case scenario”.

Review past news reports for disaster response in your area to see how long it took for outside help to arrive AND to stabilize the local emergency situation to a point when the “emergency” was declared “over”.

Then **DOUBLE** the response time factor.

This does 2 things for you:

- It builds in a safety margin for your planning;
- It gives you “extra” to be able to help others.



# Basic Survival Guidelines

Depending on your situation, in general, you can expect to live for:

- 1-3 minutes without air
- 15 minutes to a few hours if you cannot maintain your core body temperature
- 1-7 days without water
- 1-2 weeks without food
- 1-2 months without shelter.







# Food Planning

Try to prepare a supply of food with as many of the following characteristics as possible:

- Doesn't need refrigeration
- Low water/moisture and oil content
- Light weight
- Easy to get locally
- Easy to digest
- Nutritious
- Easy to prepare (have a mix of cold and hot meals)
- Does not require much water to prepare





# Food Storage

- Food stored for emergencies should have a long shelf life (perhaps 1 year or more)
- Clearly mark the expiration dates on the food. Use them and replace them before the expiration date.





# Food Storage

- Food packaging should be waterproof
- Keep food in vermin-proof containers
- Store food in a cool, dry place
- Pack/store the food so you can quickly get them if you must evacuate.







# Food Planning

Try to keep to a routine of 3 meals a day to help reduce stress and restore a sense of “normalcy”.

- Follow good nutrition and the food pyramid
- Meals are also good times to socialize. Eat together as this helps restore “normalcy”.
- Plan to use perishable foods first
- Avoid or reduce use of dehydrated foods if water supply is critical
- Avoid rationing water; best to find ways to increase water supply and stores as dehydration is a serious health issue.





# Food: Daily Calories Needed

Use the table below to estimate the daily calories needed for each family member.

Use this information with the food groups table (see next slide) to estimate the kinds of food and relative amounts you need when planning your emergency food supply.



	Calorie Range	
Children	Sedentary →	Active
2–3 years	1,000 →	1,400
Females		
4–8 years	1,200 →	1,800
9–13	1,600 →	2,200
14–18	1,800 →	2,400
19–30	2,000 →	2,400
31–50	1,800 →	2,200
51+	1,600 →	2,200
Males		
4–8 years	1,400 →	2,000
9–13	1,800 →	2,600
14–18	2,200 →	3,200
19–30	2,400 →	3,000
31–50	2,200 →	3,000
51+	2,000 →	2,800



# Food: Daily Calories Needed

Using calories counts may be too abstract for many people.

It may be easier to think about planning meals for a camping trip. Make up a typical menu for a week. Then multiply it by the number of weeks for your survival needs.

Basing your food plan on your family experience helps to make things “normal”. Do add “extras” for the anticipated heavier activity load possible during an emergency.







# Food Groups

The current updated food groups.

GRAINS Make half your grains whole	VEGETABLES Vary your veggies	FRUITS Focus on fruits	MILK Get your calcium-rich foods	MEAT & BEANS Go lean with protein
<p>Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice, or pasta every day</p> <p>1 oz. is about 1 slice of bread, about 1 cup of breakfast cereal, or 1/2 cup of cooked rice, cereal, or pasta</p>	<p>Eat more dark-green veggies like broccoli, spinach, and other dark leafy greens</p> <p>Eat more orange vegetables like carrots and sweetpotatoes</p> <p>Eat more dry beans and peas like pinto beans, kidney beans, and lentils</p>	<p>Eat a variety of fruit</p> <p>Choose fresh, frozen, canned, or dried fruit</p> <p>Go easy on fruit juices</p>	<p>Go low-fat or fat-free when you choose milk, yogurt, and other milk products</p> <p>If you don't or can't consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages</p>	<p>Choose low-fat or lean meats and poultry</p> <p>Bake it, broil it, or grill it</p> <p>Vary your protein routine — choose more fish, beans, peas, nuts, and seeds</p>
For a 2,000-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to <a href="http://MyPyramid.gov">MyPyramid.gov</a> .				
Eat 6 oz. every day	Eat 2 1/2 cups every day	Eat 2 cups every day	Get 3 cups every day; for kids aged 2 to 8, it's 2	Eat 5 1/2 oz. every day



To get food group proportions for various calorie diets, visit [www.myfoodpyramid.gov](http://www.myfoodpyramid.gov)



# Local “Forest” Food

In Nan Province, Thailand, many people have access to the local forests. Talk with elders and compile a local “forest” food calendar. Get familiar with what foods are available in what seasons.

After a disaster, if conditions are “right/safe”, people could be organized to gather forest foods to supplement emergency food supplies. This could be an empowering step to combat a sense of helplessness and a move to restore “normalcy” and routine to the lives of disaster survivors.





# Stress for how long?

High stress situations are not all the same:  
think about them in terms of duration



Stress will be different if it lasts a few hours or days  
in contrast to lasting several days or weeks.





# Food and Stress

High stress situations affect your body and change your nutritional needs

The stress can increase your metabolic rate. Then your body may increase its use and excretion of many nutrients, including vitamins A, C, D, E, K, and B complex, as well as, minerals calcium, magnesium, phosphorus, chromium, selenium, zinc and potassium.

Your food supply should provide ample amounts of these vitamins and minerals to replace those lost by stress.







# Food and Stress Reduction

Regular and well-balanced meals help to reduce stress. Combine these with adequate rest:

- Don't skip meals; keep to a 3 meal routine with healthy snacks; whole grains tend to stick with you better.
- Limit caffeine intake; sleep is a high priority
- Limit sugar intake; eat fresh fruit instead for both fiber and easily digested sugar.



Adequate sleep and relaxation is the best stress relief. In a disaster situation, it is a fine balancing act of doing what must be done immediately and keeping fit in order to do what needs to be done to continue to survive on a longer term basis.



# Routines for Stress Reduction

Regular activities help to build “normalcy.”

- Disasters are chaotic. Creating a routine set of activities helps create a sense of order.
- Meaningful actions help empower survivors and combats the helpless victim mentality
- Meaningful actions give direct results: make shelters; collect water, fire wood, food; set up signaling devices to help rescuers locate you. Survivors can see tangible results for their efforts.





# Eating Habits

Avoid eating too fast when you are hungry. Try using the methods below to stretch your food supply.

Technique	Rationale
Eat slowly	Eating fast tends to overfill your stomach and could lead to indigestion. Socializing slows down the meal and can help to decrease stress.
Chew food thoroughly	Chew food 10-20 times or more before swallowing. Its better for digestion and gives your body time to adjust
Pause when 80% full or when your plate is $\frac{3}{4}$ empty	There is a time delay between your brain and stomach recognizing when you are “full”. Give them time to get back in sync.





# Food Biofeedback

Use the Goldilocks rule to monitor your poop.

- Not too hard
- Not too loose
- Just right

Poop Description	Indicates / Remedy
Hard: compacted; heavy, sinks in water.	Constipation: Drink more water, eat more fiber (fresh fruits and vegetables), eat less meat
Soft, loose, runny: soupy and watery.	Possible diarrhea; drink more water, eat low fiber / residual foods (e.g. bananas, rice, green tea)
Soft to firm; floats in water	OK, this is “just right”. You have eaten balanced meals with good water intake.







# Food Related Equipment

Make sure you have what you need to:

- Open and prepare the food
- Eat the food
- Store the food





# How to Cook Your Food

Cooking involves heat / fire. These are the most common options in our area.

Method	Fuel / Energy	Other items needed
Fire	Wood	Paper, tinder, kindling, matches, lighter
	Charcoal	
Gas	Gas bottle	Stove, matches, lighter
Solar	Several hours of sunlight	Solar cooking box or device

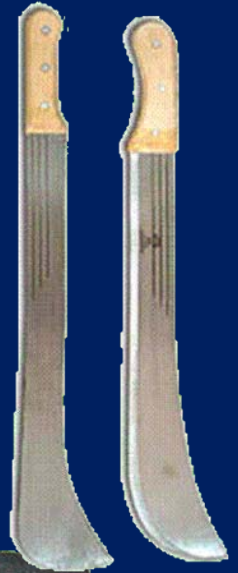




# Fire Starting

Be sure you have what you need to build a fire or start your stove to cook your food.

- fuel
- matches or lighter
- tinder & kindling
- wood cutting tools



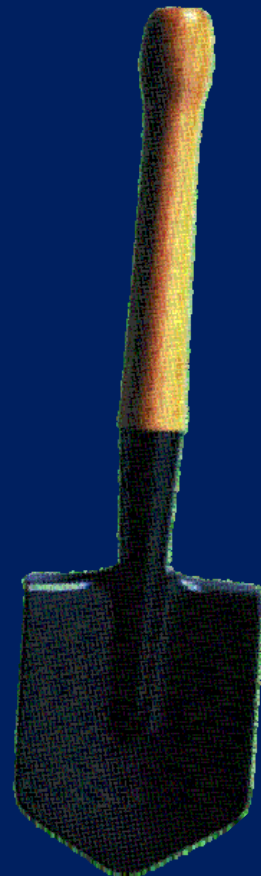




# Fire Safety

Be sure you have basic fire safety equipment.

- fire extinguisher
- buck of water
- buck of sand and a shovel / scoop.







# The Nature of Fire

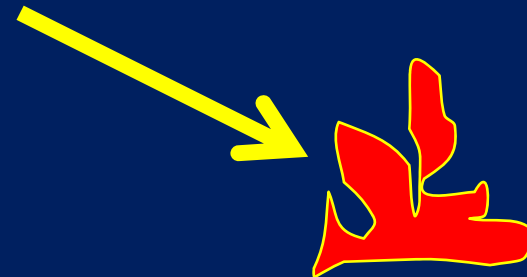
To start a fire, you need air, fuel, and heat (an ignition source)

Being outdoors after a disaster, there is plenty of air for your fire.

On most farms, you will find supplies of wood and charcoal.

The **ignition** source might be the problem after a disaster.

Air



Fuel

Heat





# Fire Starting Kit

The RTC-TH fire starting kit has 3 different ignition devices: butane lighter, 9 VDC battery, and matches. Size 000 steel wool is used for tinder. The kit is stored in 2 empty pill bottles.





# More Fire Starting options

## Other possible fire ignition devices:



**Magnifying glass**  
(probably the easiest to do but  
you need a sunny day)



### Bamboo Friction Fire Methods

Friction fire methods take a lot of energy and practice; It's not as easy it is sounds or looks. Bamboo is abundant throughout SE Asia. Many indigenous peoples have a wide array of bamboo friction fire starting methods.



**Magnesium & steel striker**  
(good for wet conditions IF you  
have this kind of device)



All fire starting  
needs or  
benefits from  
dry tinder.







# Fire Starting: Tinder

Tinder is fine fibrous material that will easily burn



It can be gathered or made. Bamboo shavings are easy to make and are excellent tinder for fire starting.







# Wood & Charcoal

Wood and charcoal are readily available on most farms. But you need to have a way to start a fire



Matches or lighter



Tinder



Kindling

Keep fires 10 m away from tents. Remember, no open flames should be inside tents (e.g. candles, fires for warmth, etc.) and definitely no smoking. Keep fire extinguishing equipment and materials nearby. Flammable fuels should be stored away from fires.





# Food: Cooking Fuel

In normal times, bottled gas is readily available. During and immediately after a disaster...well, it's anyone's guess.



Our family uses 1 bottle of gas every 5 weeks preparing meals for the family and lunch for 3 workers (~336 meals). Keeping a spare bottle in reserve is a good emergency preparedness practice.





# Food: Solar Cooking



Cooking by sunlight requires a sunny day, a solar cooking device, pots, and practice. It is a different cooking style than traditional methods. Practice often in order to be well prepared.



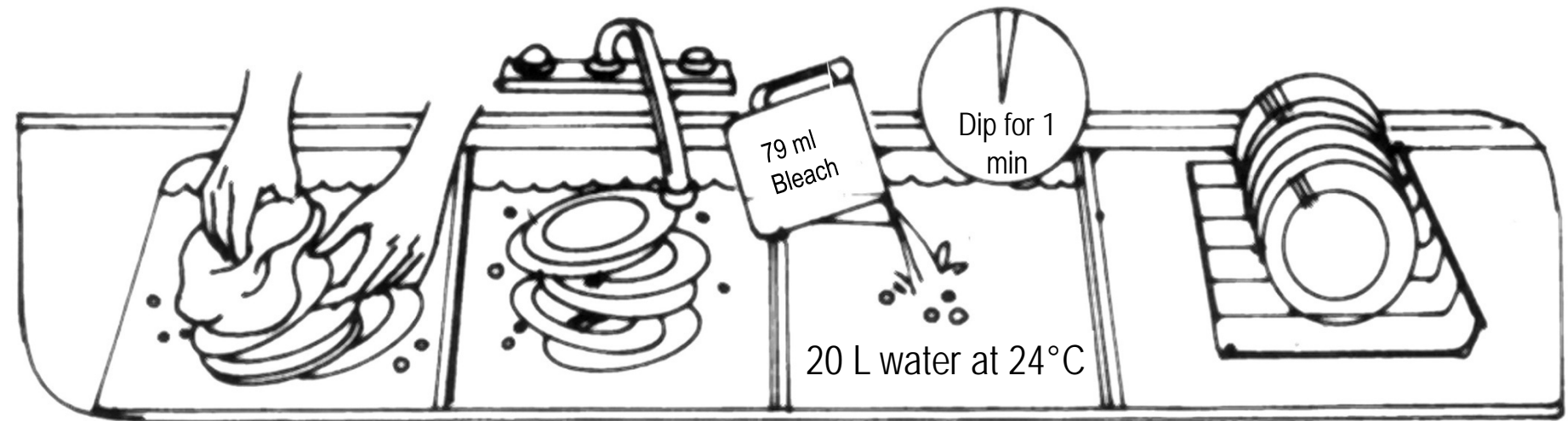
Solar water pasteurization and distillation are ways to get safe drinking water. Learn more about this in Lesson 3 Water.





# Food: Clean Up

Proper cleaning of cooking equipment and eating utensils is essential for good sanitation



Wash

Rinse

Sanitizing Dip

Drain Air Dry

Make a sanitizing solution by mixing 79 ml / 1/3 cup chlorine bleach to 20 L / 5 gallon of water at 24°C / 75°F.  
Dip utensils in for 1 minute before air drying.



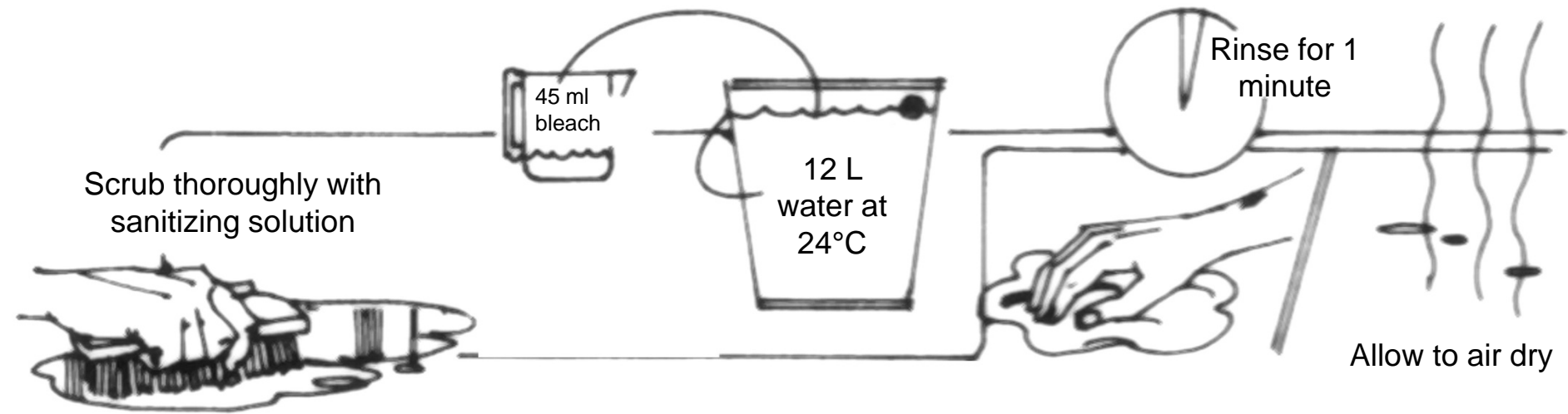
Learn more about this in Lesson EP-3 Water.





# Food: Clean Up

Sanitize food preparation surfaces by scrubbing and rinsing them with a sanitizing solution



Make a sanitizing solution by mixing 45 ml / 1.5 oz chlorine bleach to 12 L / 3 gallon of water at 24°C / 75°F.

Rinse food preparation surfaces for 1 minute. Let thoroughly air dry.

Learn more about this in Lesson EP-11 Disease.





# Food: Clean Up

Proper disposal of food wastes is essential for good camp sanitation.

Screen food particles from any wash water.



Trench composting is a good idea for long-term camps. These can be used for future gardening plots. Cover the food wastes with a 15 cm layer of soil to keep flies out.





# Food: Clean Up

Proper disposal of wash water is essential for good camp sanitation.

## Dump Barrel:

Barrel or large bucket with holes in bottom; fill with gravel, sand or ashes, coarse cloth cover. Change barrel as needed.

## Barrel Base:

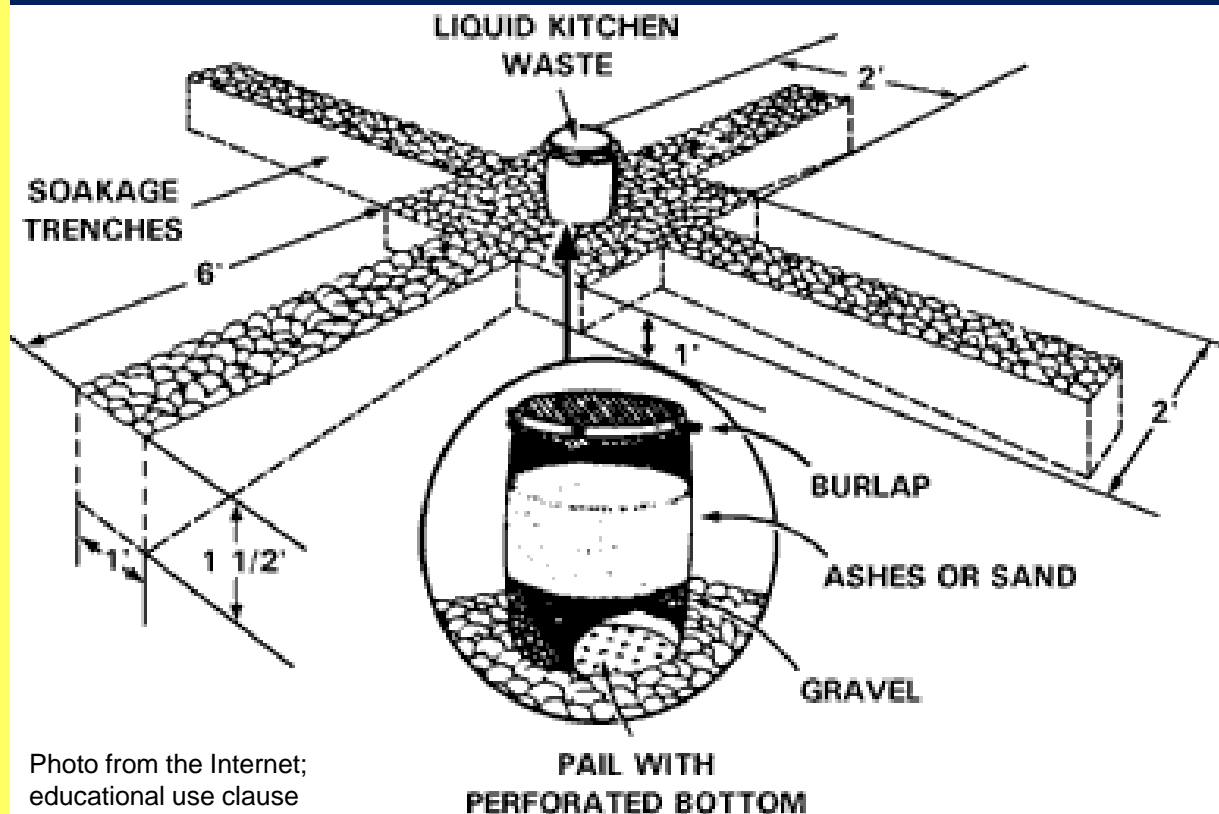
60cm square, 30 cm D; coarse gravel fill

## Soak trenches:

180cm L, 30 cm W, 30-45 cm D; coarse gravel fill



Screen water for solids before dumping







# Safe Drinking Water is Vital

Be sure to study Lesson EP-11 **BEFORE** setting up a camp, toilets, and cooking areas



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**EP-11**



# Remember: You are responsible for your safety and survival in a disaster.



Take action today:

- Make an Emergency Plan
- Prepare your Emergency Kits
- Encourage others to prepare



Once a disaster strikes, it is too late to try to prepare!



# The next lesson in the Emergency Preparedness Series is EP-5



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EP-5

# Rural Training Center-Thailand RTC-TH

is dedicated to  
providing  
community-based  
environmental  
education for the self-sufficiency  
and sustainability of small rural  
family farms



# Free Self-Study Materials by Internet

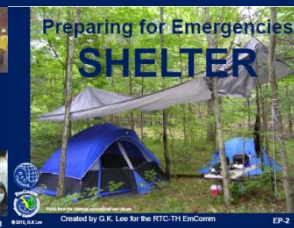
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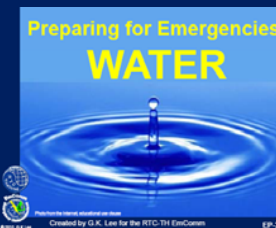
These materials are in English. Volunteer assistance for translation to Thai is welcomed and will be acknowledged and cited.



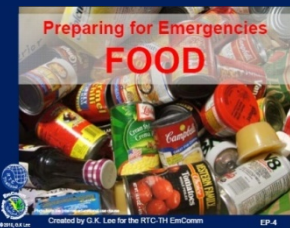
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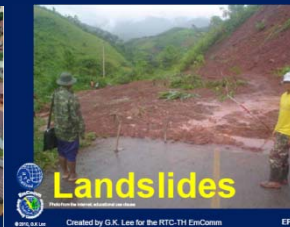
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# Questions or Comments

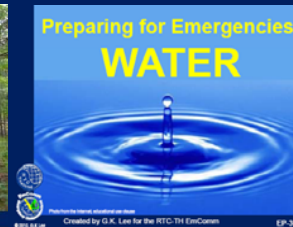
We are  
always trying  
to improve  
our lessons.  
Your  
comments  
and  
suggestions  
are  
welcomed.



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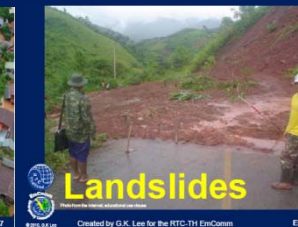
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# For Emergency Preparedness Training



**Contact**  
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Via Skype video  
conference call: [rtc\\_th](https://www.skype.com/join/rtc_th)



# Future RTC-TH Emergency Preparedness Lessons

- Identifying local Geo-Hazards
- Finding safe evacuation / shelter sites
- Identifying main supply routes and alternate routes
- Finding Helicopter Landing Zones
- Helicopter landing zone hand signals
- Ground to air communication without radios



# Community-based Environmental Education for



## The End

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