

No Grid

Survival Projects



**A Detailed Guide to Survive Anywhere with Essential
DIY Skills for Self-Reliance Preppers and Survivalists
– Projects, Power Systems and First Aid Kit**



Brian Maggard



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Introduction

Nothing is as good as becoming self-sufficient, where you can receive free water and energy from the source. Off the grid is a lifestyle for people who want to be in control of their lifestyle, ideally without the support of public infrastructure. Living off-grid will require you to provide the primary means of survival yourself.

Living off the grid can be exceedingly challenging, but it can also be highly gratifying. Going off the grid provides independence – while everyone is grumbling about government expansion and corporate consumerism, you'll escape the rat race.

Living off the grid is not for everyone. However, for those prepared to make the drastic lifestyle shift, it will reduce their growing reliance on income and increase their time spent with family. This guide will teach you how to live off the grid.

Off-the-grid living isn't just a modest change in your lifestyle; it's a way of life in and of itself. While you can be a survivalist while working a 9-to-5, living off the grid is a full-time job and a drastic change from the wage-earning routine. You're not just preparing for something major, cutting back on expenses, or planting a small victory garden – you're foregoing government services and fending for yourself.

But before you start planning your modern-day homestead, you'll need to consider several fundamental questions:

- *Will you make use of electricity? If so, how will you produce it?*
- *Where are you going to obtain your water?*
- *How much cash will you require?*
- *How will you connect to the internet if you still require it?*

- *Will you buy food, or will you cultivate and hunt it?*
- *Without law enforcement, how will your off-the-grid community be protected?*

Even just looking over this list of questions can be intimidating. And this is only to make a preliminary educated decision. It will become much more difficult once you have decided to go off the grid. Living off-grid necessitates a significant initial investment in terms of time, money, and energy. However, once the project is up and running, you'll probably feel fantastic about leaving the rat race and reconnecting with the land.

Living off-grid means not using or depending on public utilities, especially electricity supply. It basically means you do not have any wires or pipes connecting your house to the rest of the world.

Many people that live off-grid have electricity, which they generate in various ways. Some use gas, propane or diesel generators to generate electricity; others use solar panels with batteries and inverters. Some use wind turbines and small water turbines to generate electricity. Many use a combination of those to get electricity all year round.

For running water, you could drill a well and use a pump powered by your alternative energy source to pump that water out. You could also develop a nearby spring on your property. If you had a spring up on a hill above your house, you could develop that spring and let gravity feed the water down to your house.

In these uncertain times, more and more of us have given great thought to the idea of living "off the grid." The notion of self-

sufficiency and living off the world around us without leaving a huge carbon footprint is more than just tempting. If this is something you have given great thought to, this is exactly the book for you.

In this guide, we're going to cover the best PROJECTS to embark on as you go off-grid. These projects will help you reduce your utility bills, get free water consumption and even do without a septic or sewer system. These off-the-grid hacks will help you survive and thrive independently.

Let's get started!

Chapter One: Water

One of the things living off-grid water system does is that they cut off your connection with any public service water. Therefore, having an abundant supply of clean and safe drinking water is paramount. Well, water and rainwater are examples of off-grid water sources. So naturally, flowing water is still used by lots of people. However, in some places, it is illegal to use this source of water. For instance, in the United States, it is illegal.

How to build your off-grid water system

The off-grid water system you want to build will be determined by where your home is situated, plus the outbuildings. We will discuss three primary ways to create an off-grid system:

- Installing a well-water system
- creating a cistern tank

Installing a well water system

If your county regulations permit you to drill a well, go ahead. You can either dig a deep well (about 100-800ft depth), shallow wells (10-30ft), driven wells (built by installing a pipe in the ground within 30ft), drilled wells, and dug wells (dug by using shovels).

Test the water quality before you drill the well. I agree it is an additional cost, but if you drill up contaminated water, it may cost thousands of lives because it might not be only you that will be fetching there. So you will spend more money than if you had run a test before drilling the well.

A cistern tank

They are big rain barrels. The containers are manufactured with food-grade material and can hold lots of water. They are an excellent

storage option for someone who wants to leave off the grid. Cisterns are installed in the ground. Some cisterns are placed beneath the ground to create property space.

Water storage devices

A rain barrel is used as a container to collect water, and it can hold about 50 to 200 gallons of water. Different rain barrels can be connected to create a lot of storage space.

How to build a Rain barrel

Materials needed

- A barrel
- A rainwater collector
- Flatwood drill heads, some screws
- A board with the barrel's lid

Step one: Prepare the barrel's lid

Most times, the lid of the barrels are pretty shaky. It is because they are manufactured with planks put into each other and are meant to be inserted using a groove at the top of the barrel. Make sure you get a barrel with a lid that won't wear out with frequent use. You can see the four sides of the board. The screws with handles may not be long enough to penetrate the lid's thickness. Use a flat drill to create a wider hole and make the thickness small to adjoin the handle. Ensure you put the hold at the center of the lid.

Step two: Connect the rainwater collector to the gutter

You can insert the rainwater collector 8cm away from the gutter. To stop an overflow, make sure the barrel is not overfilled. You can install a rainwater collection lower than the barrel's top. You can drill a big hole with the head of the drill flat, insert a transparent tube packed in the rainwater collector, use silicon to seal it, and ensure it

is waterproof. So the water can flow back through the line if it gets to a particular level in the barrel.

How to make a homemade rain barrel

Step one: select your location

For your rain barrel to work well, it must be set up close to the corner of your barn where the drain pipe can run down from the gutters. You have to route the drain pipe into the rain barrel to filter the water from the catchment system, so select a corner of the home where there is a drain pipe to place your rain barrel.

Step two: Make a stand for the rain barrel to settle on

Naturally, it is okay to place your rain barrel on the ground, but putting it in a corner that is some feet off the bottom gives you a chance to add a tap and have plenty of room to fit your watering can or bucket under it and let the water pour into it. You can use a stand under the rain barrel. You can use bricks, cinderblocks, or something solid to hold the barrel's weight when it is full of water.

Step three: Route the drain pipe into the bin



The moment you set the stand-up, place the garbage can over it. Next, you must cut a lid hole and channel the drain pipe from the

gutter into the bin. You can use a flexible drain pipe to shape and bend where you want it to go. Trace the drain pipe over the lid and cut the hole using a utility knife. Carry out a test to ensure the drain pipe can fit into the hole, but ensure the lid is taken off until you have added a debris screen before placing the cover.

Step four: Add Spigots (tap)



You need to add a tap on the rain barrel for ease of use, allowing water to flow out rather than having your barrel overfilled to the top. To do this, make a hole at the end of the barrel where your tap will go. Pop the tap in the spot and seal it across the edge with silicone, rubber, or pipe washers. Next, make another hole by the side of the barrel close to the top and adjoin a different tap or fixture for the overflow drain. Finally, put a hose and route your hose to the actual drain. It will direct an overflow of water to where you want it to be and stop the water from spilling over the garbage sides the moment it is complete.

Step five: Add a debris screen



You can also add a screen to the rain barrel to stop any debris or leaves from the gutter from blowing into the rain barrel and keep bugs out. It would be best if you did this for bugs that lay their eggs and hatch them in water. Place the screen over the open barrel, secure the lid, and cut any extra screen material from the edge. It will have small inches around the screen that are larger than a barrel. Fasten your lid over the barrel and channel the drain pipe via the cover into the hole you have cut.

Step six: secure the barrel

This step can assist you in ensuring the rain barrels remain in place and do not tip over if it isn't complete. You can fasten the barrel to the side of your house using a plumbing band to stop it from spilling and tripping. But you can also run the plumbing banding via the bin handles.

Water purification

It is vital to remove pathogens and minerals from water. You can purify your water through

- Sedimentation : allowing particles to settle at the end of the pipe.
- Filtration is letting running water pass through a strainer to filter small particles.

- Chlorination : Putting a small quantity of chlorine in the water to kill bacteria.

Project: Water Distillation

A water distiller is used to purify contaminated and dirty water. It would be best if you had three things to distill water; water, apparatus that can be used to boil water and to recollect the water into steam, and water.

1. Materials needed

A water distiller should be able to boil water to make steam and can capture the moisture in a way that gives room for it to condense back into the water. The materials you need to create the distiller are 20-foot three-eighth-inch copper tubing, a six-quart stainless steel pressure cooker, zip ties, a two-gallon bucket, a flat bar, a jar, and silicon tubing.

2. Boiling the water

After getting all the needed materials, boil the contaminated water in a pressure cooker or tea kettle. You can use a six-quart stainless steel pressure cooker. You will need to pour the boiling water into the condenser with closed lids. You can remove the pressure valve of the range and replace it with a barbed fitting. You can use a rubber ring gasket to tighten the new fitting.

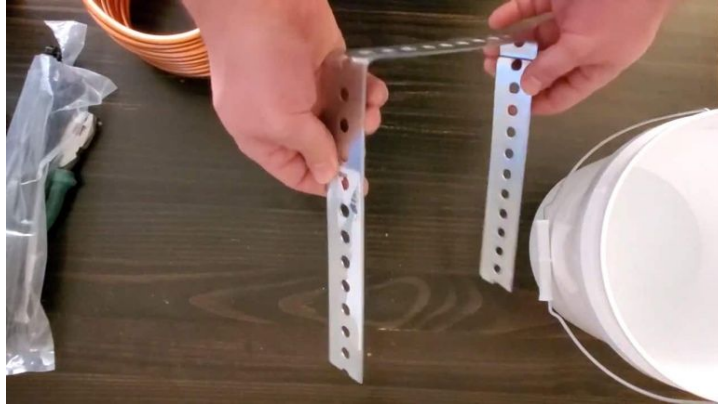


3. Making your condenser



Now get ready to make the condenser. The essence of a condenser is to allow steam to fill back enough so it can change to liquid water. First, a condenser is built with twenty foot-three-eighth- inch copper tubing.

4. Adding the U-shaped support



Since it needs a bit of support to stop having the coil collapse beneath its weight, a flat bar made into a U shape is positioned under the coil. A little cross piece is adjoined to it at the end using a JB weld. The ring is connected to the pin bed bar with zip ties.

5. Creating a hole for the drainage



The hole can be drilled close to the bucket's end to allow the copper tube to drain the condensed water. The coil is carefully positioned in the bucket, and the tail end should be pushed into the drain hole.

6. Collecting the clean water



The condenser can be joined to the pressure cooker with five/sixteenth silicon tubing. In addition, a small silicon tubing will be bound to the condenser bottom to a clean water receptacle.

7. Adding cooling element



When making distilled water, you must cool the steam back. The coil will cool it. But you can't bank on the coil alone because it will lose plenty of moisture via the condenser's bottom. After all, not all of them can cool and condense when it gets to the bottom. A good way is to put a cooling element in the condenser.

Fill the bucket with ice water to promote efficiency and water output because it will make the copper tubing chill. Adding chilled water via

the distillation process will remove all the steam waste from the condenser. The gap around the copper tube where the hole is made is not sealed, so removing the condenser from the bucket will be easy for maintenance and cleaning. Another reason is that it can help drain the water. The boiling steam can make the copper tubing get hot.

Chapter Two: Food

Canning 101

Canning food is an excellent way to preserve your food. When you can the foods, it will be easy to have a pantry stocked with different foods cooked and ready to eat anytime you open the jar. You may rely on heat to keep the fruits or food away from organisms if you are canning fruits. The food and everything it come in contact with must be sterilized by heat, and then the sterile food should be sealed to remove all microorganisms from within. You don't have to seal up fruit because yeast and bacteria will not rest on fruit with acid substances.

Equipment needed for canning and preserving

- Jars

While choosing jars, choose the ones that can be covered with no air space on top of the pot's rim. That is, the whole surface of the cover can fit closely on the jar's content. These are the only ones that can be used with fruit canned in cold water, like lemons, gooseberries, and cranberries, you know why? The space not occupied with fruit and cold water gets occupied with air, and it is impossible to sterilize the air. Suppose you can food in these jars by cooking; any space that remains in the fruit's shrinkage after canning has been fixed by heat.

Mason jars by brands like Ball, Kerr, and golden harvest are made to withstand the heat and pressure linked with repeated uses of home canning. You can see them in various sizes ranging from half-pint to half-gallon, with quart and pint zinc being the most common. Each jar can either have a narrow-wide mouth opening. Check the two

pieces of caps to ensure they come with a ring and lid. Metal canning lids possess a sealing material around the edge of the underside of the top. They are created for one use and come in narrow and wide mouth sizes. Rings screw on the jars, securing your lid to the jar, and are helpful in both mouth sizes. A pot has a funnel and lifter. The horn is specifically designed to fit the banks and is available for sale in canning supplies. It will help you pour food into the jars without causing a mess on jar rims, stovetops, or counters. You will use the lifters to lift the hot pots from your canner.

- Using a Water bath canner

If you are starting with canning, many people begin with a water bath canner. A water bath canner contains a big pot with a lid and a wire rack that fits into the pool to hold your jars off the bottom. The bank needs to be deep so that one inch of boiling water is on top of the jars' lids when processing. Water bath canners come in stainless steel, aluminum, and porcelain-covered steel, usually black or blue with white specks. The canners are not expensive, between 20 and 90 dollars, and you can find them at thrift stores. Use a water bath canner to process foods high in acid in pickles, fruits, and lots of tomato products. If you intend to can low-acid foods, you will require a steam-pressure canner for your water canner.

- Using a Steam pressure canner

Steam pressure canners are available in stainless or aluminum steel. They have a fitted lid with a pressure gauge, steam vent, and an interior rack to heighten the jars off the bottom of the canner. A steam-pressure canner is more expensive than a water bath canner

and is used to can low-acid foods like non-pickled vegetables and meats. A pressure cooker is like a pressure canner, but it doesn't have a dial gauge or weight, so it can't be suitable for canning.

Project: Water bath

How to make water bath canning:

1. Take the glass casing off the aquarium heater so the glass won't break.
2. Get a screw remover to remove the screw from the connector screw. Use it to drag out the thermostat adjustment and ensure you don't break it. Bend it a bit.
3. Using sandpaper, file the thermostat adjustment rip. Be cautious because each mm you file off will increase the temperature quickly.
4. Continue to file and keep checking till the proper temperature is achieved.
5. When the temperature is achieved, seal off the heater as you opened it, put it into the glass casing, and seal the edge correctly so that no water will enter the heater.
6. Clean the bucket using a Dettol and half-fill the bucket with boiled water.
7. Add a lid to the bucket to lower the heat loss.
8. Create a little hole in the thermometer's lid. Next, you must dip the thermometer in water.
9. Put the aquarium heater in the bucket and ensure the heating element is submerged. Never position the opened side in the water.

10. Make holes bog so the thermocouple can float very well to the point that the vials can fit into it.

Recipes

Mixed Vegetables

Ingredients:

- Whole kernel corn
- Carrots
- Sweet peas
- Tomatoes
- Zucchini
- Lime beans
- Green beans

Procedures:

1. Pour half a teaspoon of salt into the jar and one teaspoon of salt into the quart jar.
2. Cut the vegetables, and they should be one inch.
3. Put all the vegetables into a big pot and cover using water. Boil using high heat for five minutes.
4. Fill the jars using vegetables, and cover them using the other liquid.
5. Wipe the jar rim clean and cover it using clean lids and ringers.
6. Process it in a pressure canner for seventy-five minutes if it is a pint and ninety minutes if it is a quart.
7. Please take out the jars from the canner and let them rest on the counter for twelve to twenty-four hours before you begin cooking.

Whole or halved tomatoes

Ingredients:

- Tomatoes (21 pounds of tomatoes)
- Lemon juice
- Salt
- Equipment for canning

- Canning jars
- Hot water bath pot
- Canning lids
- Jar lifter

Procedures:

1. Fill up a pot with water and bring it to a boil. Add one tomato to it at once.
2. Take the tomatoes and add them to the ice water.
3. Peel the skins of the tomatoes and begin to slice them into big chunks. Take out the stem. The size of the tomatoes you cut depends on you. You can also leave the tomatoes whole, provided they fit into the canning jars.
4. Add salt and lemon juice to the canning jar. Then add the tomatoes.
5. Get another pot, fill it with water, and boil it. Add boiling water to the jar and leave about half an inch of headspace. Slide a plastic knife around the inner part of the jar to assist you in removing the trapped bubbles. Bag the jars on the counter's surface to take out the bubbles.
6. Wipe the jar's top using a wet cloth but clean.
7. Place a lid over the jar and screw the band.

8. Position the jar in a big pot half filled with water. The moment all the jars are inside the pot, add more water so the jars can be covered by an inch. Cover the pot and bring it to a boil. Reduce the heat so the pot can boil for forty-five minutes for quarts and pint-sized jars.
9. When the processing time is over, remove the jars from the pot and position them on a baking rack. Allow the jars to chill for twelve hours. Then, test the lid so each jar can be sealed.
10. Take out the bands and wash the outer parts of the jar using warm soapy water. Dry the jars and add a label to the jars with the date and contents.
11. Keep in an excellent dark spot.

Beef stock

Ingredients:

- Eight pounds of merry beef bones
- Two large onions chopped
- Two carrots chopped
- Two stalks of celery
- Three cloves of garlic crushed
- Two bay leaves
- One teaspoon of dried parsley
- Half a teaspoon of dried rosemary
- Five to 6 quarts of water
- Ten peppercorns

Procedures:

1. Heat the oven beforehand to 425 F.
2. Wash the bones with water and put them in a big roasting pan.

3. Do not roast it in a preheated oven till the bones get brown for about thirty-five to forty-five minutes. Toss it halfway so everything can become brown throughout.
4. Take the roasting pan off the oven. Use a big spoon to remove the bone from the pan and put them into another big stockpot.
5. Add one cup of the water to the hot roasting pan so the pan can become deglazed. When the water begins to steam, scrape the pan using a wooden spoon to remove the ones stuck to the end of the pan. Add a flavorful liquid to the pot.
6. Add carrots, onions, bay leaves, celery, sage, garlic, peppercorns, and rosemary, then pour plenty of water to cover the bones using about four quarts.
7. Lower the heat to medium-high and let the water in the pot boil. Lower the heat and cook slowly for four hours or more. Stir often and remove any foam.
8. Take out the beef bones and vegetables from the stock using a spoon. Strain the stock using a big container of extra canning jars, and throw the solids. Leave the stock to chill entirely and refrigerate it overnight.

Canning the beef

1. Get the canning tools ready by washing your jars, bands, lids, and canning rolls using hot soapy water and rinse them very well. Keep aside the lids and bands till you want to use them.
2. Position the jar rack in a pressure canner, and fill it with water based on the instructions. If the pressure can is made by pressing, you will add three quarts; if it is minor, you will add two quarts. For other makers, add two to three inches.

3. Fill your jar halfway using hot water and then put them on the canner rack. Let the canner simmer for ten minutes and leave it hot till you want to fill them.
4. Take out the beef stock from the refrigerator and remove the fat that has risen to the top.
5. Throw the excess fat away.
6. Take the stock to a big pot and boil it over medium-high heat.
7. Place a kitchen towel on a counter. Use the jar lifter to remove a jar from the canner. Pour the water and position the pot on the towel. Leave the remaining jars in the canner.
8. Use the funnel and ladle to fill the jar with hot stock; leave about one inch at the jar top.
9. Turn the bubble popper via the jar and wipe the rim. Place the pot in the middle, put the band on top of the lid, and screw it tightly.
10. Use your jar lifter to put the jar back in the canner rack and do the same for the pots until the canner is filled; otherwise, you will run out of stock.
11. The moment the canner has gotten to the correct pressure, which is 10 pounds for weighted gauge and eleven pounds for dial gauge canners, create a timer and cook the pint jars for twenty minutes.
12. Adjust the heat as necessary to maintain the correct pressure.
13. Once the processing time is complete, put off the heat and allow the pressure canner to chill down to zero pressure. The moment the canner becomes depressurized, leave the canner to collect for ten minutes before taking off the lid.

14. Spread the kitchen towel over the counter, unlock it and take it out by tilting the lid from you so the steam won't burn your face.
15. Leave to cook for ten minutes so the jars can be adjusted to change the pressure. Once the jars begin to boil, leave them to stay in the canner for another five minutes or till the boiling stops.
16. Use your jar lifter to lift the jars from the canner and position them on a towel. Keep your jars upright, and do not tighten the bands. Leave the jars to sit undisturbed for twelve to twenty-four hours to chill.
17. When the time elapses, check your jar lids to ensure you have sealed them. The lid shouldn't pop up. However, once the lid flexes up and down, once the center is pressed, it won't lock.
18. Remove the ring bands, wash, date, label, and keep them in a cool dark place. Use in a year for the best quality.

Fruit puree

Ingredients

You can combine:

- Apple and pear
- Peach and apricot
- Plum and apple
- Peach, apple, and pear
- Banana and pear
- Rhubarb and apple
- Peach and mango

Procedures:

1. Peel the fruit
2. Chop or slice into little pieces. Take out the seeds and core.
3. Pour the fruit into a boiling water
4. Boil till it becomes soft
5. Drain the water
6. Mash the fruit with a potato masher. Then, you can blend it with a blender or food processor until it becomes smooth.
7. Freeze the remaining purée in ice cubes.

Chili con carne

Ingredients:

- Three cups of red kidney beans or dried pinto
- Five cups of water
- Five teaspoons of salt
- Three lbs of ground beef
- One and a half cups of chopped onions
- One cup of chopped red bell peppers
- One teaspoon of black pepper
- Three to six teaspoons of chili powder
- Two quarts of crushed whole tomatoes

Procedures:

1. Wash the beans properly and place them in a two-quarter saucepan. Add chilled water to about two to three inches over the beans and soak for twelve to eighteen hours. Drain and throw the water.

2. Mix the beans with 5 ½ fresh water and two teaspoons of kosher salt. Boil it and cook for thirty minutes.
3. Drain the fat off by spooning it into your colander in the sink. Then, you can shake the fat.
4. Pour into a big pot and add about three teaspoons of salt, chili powder, pepper, and tomatoes. Drain the beans and add meat. Cook slowly for five minutes.
5. Use a sterilized jar to fill the pot. Take out the air bubbles and adjust till you can create enough space you need. Wipe the jar rims with a damp clean paper towel with white vinegar. It will assist in taking out fat that could have dripped. Adjust the lids and cook in a pressure canner.
6. Process the pints for about seventy-five minutes for a dial gauge.

Chapter Three: Gardening

Set your off-grid garden in an area on your land. Ensure it is near a water source. Follow the steps below to set up your farm. Before we begin addressing the gardening projects, you should find out the answers to the following:

Where does the sunlight fall frequently?

Many garden vegetables need full sunlight, so look for an area in your yard that receives about seven hours or more unfiltered daylight. The garden does not have to fit in a square or rectangular shape. It is okay if the trees protect your yard from a triangular park or uniquely curved configuration. After identifying the sunlight pattern in the yard, take some moments to measure the space. When you have this measurement at hand, it will give you some idea about the design of the first garden beds. Also, be sure of the slope in your yard and how rain runs down the hill. If you stay on a sloppy plot of land, you must build a retaining wall to level the ground.

What kind of animals comes into your backyard?

Animals can be both annoying and beneficial to the kitchen gardener. Although some may help the gardener by consuming pests, others eat the flowers and vegetables. Pay attention to the animals that can impact the garden plants. Watch out for rabbits, birds, deer, cats, mice, groundhogs, or other animals that visit your yard.

What is the state of the soil in your yard?

If you recently got the land, stay on, or recently decided to be a gardener, the ground might be in a neglected place, that is, deficient. The soil will require amendments for many years to return to its regular organic microbial activity. Take cognizance of any

perennials that exist in your backyard. If you are unaware of their classification, try to know the perennials' exact names. Perennial plays an essential role in any companion planted garden. Gardeners may note some perennials as invasive weeds; amazingly, those weeds can produce some benefits.

What kind of water source is available on the land?

It is essential too. It depends on the climate in the area of the country; free access to water will dictate the kind of plants you can grow there and how many times you can cultivate. Ensure that the spot you chose for your garden provides quick access to a water source if you have to water between rainfalls.

Check the soil health

It should be done first before deciding to sow and plant. Unhealthy soil will kill your plants. Test the soil by scooping a handful of dirt into your palm and trying to mold it into a ball. If the ground is sticky, you have clay soil in your hands. If the soil sample begins to crumble like granular, you have sandy soil, and if the earth starts to fluff and loosen, it is loamy soil. It is the right soil combo to plant your crops because it retains water and nutrients.

Use compost and do not till the garden

After you have assessed the composition of the soil, the next thing to do is to use compost. Let the former organic matter decomposition take place so you can use it for the next layer to plant. When you do not till the land, the worms and bacteria underneath will keep doing the work. Sticking to this technique will make the garden more productive over an extended period.

Supply plants with irrigation

Plants will not grow without water. Similarly, you cannot stand all day and week to water your crops. So redirect water from a natural source.

Growing crops

Decide on what you will like to grow. You can also ask about the crops that grow well in your area – research the region’s history. It is good to begin planting food you are familiar with before trying new food types.

Things to grow on your farm

- Corns
- Yam
- Potatoes
- Beans
- Fruits and nut trees. It will take some time to give you fruits, so you must be patient.
- Berries
- Herbs can be used as a flavor to your meal and heal ailments.
- Vegetables
- Grains

Project: Raised Bed

Materials needed

- Driver, screwdriver, bits, and drill
- Handsaw or tape measure
- To get a 4 by 8-foot bed, obtain three pieces of eight-foot long two-by-six lumber if they accept two-by-eight lumber. For a 4 by 4, get two pieces of lumber.

- If you don't own a saw, ask around or go to the lumber yard to cut the log of wood in half.
- To make a 4 by 8-foot bed, cut a piece in half to have two four-foot lengths for the two ends.
- Deck or exterior screws
- To make it sturdier, use a piece of 2 by 4 to cut corners to give you a strong place to screw or nail into instead of the end grains of the board.

1. Making the bedsides



If the two 8-foot-long boards are not pre-cut from the store, mark halfway and cut the plank in half for a 4 by 4-foot bed. So, you will have four planks.

You have to screw the planks together using deck screws. Two holes at the plank ends are enough—drill holes using a drill bit smaller

than the screws. So put the pilot holes, and you can also speak to someone to help you hold it when you fasten the corners. If you like more bracing and a sturdier frame, cut the pine stake into four pieces and use them to nail the boards at the ends for bracing.

2. Assemble the Raised Bed

Now that you have cut the wood into suitable holes and sizes, place the beds in the right spot. The walls should be laid out so that the plank overlaps close with the pilot holes at the overlapping end.



Screw the wood walls together with a screw that is long so that the border can be secured to the next wood so you can snug it.



3. Fill the bed

Fill the bed with a nutrient-dense compost mix. It could be commercially produced or homemade).



You can top the compost with rich topsoil particularly formulated for vegetable gardening. It possesses an excellent texture to give room for immediate planting and sowing.



Fill the beds up. The soil will settle, particularly if you water it. Once it drops, top it off using compost. You can also stack your two boards. The two stacked heights are 2 by 6.



Composting

Even if you don't have ample space for your garden, it is okay to carve out a small portion for a compost pile. The compost pile is a necessary piece of a companion planted garden. Compost resembles the natural process of decomposition. It adds to the sustainability of the garden beds by recreating the former season's waste into food for the coming generation of plants. Because microbes from decaying plant matter create it, they contain minerals for proper growth. It will also hold more water than sand or clay, so you don't have to keep watering it. Before building your compost pile, plan the position; it should be easily reached from the garden and house. If you stay in a hot climate, pick a location in your shade. If you remain in cooler weather, select a location in direct sunlight.

Cold Compost Vs. Hot Compost

There are two significant ways to create your compost: hot and cold. Building a cold compost pile needs more thought and planning to achieve the desired result. Grass clippings, leaves, yard, and garden debris, can be gathered as a pile without concern for the moisture level, ratios, or heat. A cold compost pile is the easiest way to lower

waste if you are new to composting. It is a space to toss organic materials from the yard and kitchen that do not involve garbage cans or plastic bags. Sadly, cold Compost piles come with lots of deficits. Cold compost may take up to one year to break down, and with that kind of slow decomposition, it will not give you all the nutrients you need. The process may take time if you don't attempt to break up more extensive materials like branches. Also, cold compost doesn't generate the heat required to destroy seeds or pests. A hot compost pile is not that difficult to build, and the fast production rate of usable compost may be suitable for someone who wants to have a small garden.

Creating a hot compost pile requires much effort and knowledge of decomposition. You have to maintain an equal ratio of Nitrogen and Carbon if you want to hasten the aerobic activity in the compost pile. Nitrogen contains high moisture, while carbon contains dry content. To have a hot compost pile, layer brown and green materials bit by bit till the stack is 3-4 feet tall. Each layer will measure about 6 inches in depth. If the materials become dry, the water will pile as the layers are created.

During the dry season, a compost pile will quickly dry out if you stack it in a place where the sun shines directly on the stack. So during the dry season, you have to add more moisture. You will know if your pile is heating up by giving it a fast turn with a pitchfork. Hot compost piles can attain about 260° Fahrenheit on the interior, showing that it is steaming from the heat. You don't have to turn the bank for the compost to work constantly. Riding endlessly exposes the nutrient to the air. Make sure the nitrogen and carbon

materials are even so that you don't have lots of green materials than brown ones; if not, the pile will start changing into anaerobic, and it will begin to smell. A properly balanced compost pile will not smell.

Examples of Nitrogen-rich or green compost materials:

- Grass clippings
- Soiled animal manure. It should be manure from chickens and herbivores animals. Horse manure consists of weed seeds, so don't add it to hot compost piles.
- Cover crops
- Leftover tea bags, coffee grounds, and vegetables
- Crop debris like tomato leaves, brassica leaves, squash vines, and beans.

Examples of carbon-dense or brown compost materials:

- Dried leaves are adequately chopped.
- Wood shavings
- Straw
- Dried stems
- Paper or cardboard

The list is endless. But always remember to chop the materials more evenly to compost faster. Shred papers, crumble the leaves and break the materials into tiny portions as much as possible. The moment the compost appears like crumbled soil and not the original way it was before you threw them into the pile, you can begin to use them. Do not include plants infected by diseases. Do not add meats, bones, or oils. Manure from cats and dogs should not be counted.

Cats and dogs are carnivorous animals, so their stomach will contain worms that can harm humans. Treated woods and glossy magazines contain toxic chemicals that should not be composted.

Project: Hot Composter build

Hot composting is a style of compost-making. This compost kills weed seeds; it removes pathogens from plants and decomposes quickly. But it would be best if you kept in mind that hot composting has peculiar demands:

- It should have one cubic yard of balanced materials that you can compost.
- There should be enough space to manage the material
- It should give the energy to build compost and quickly turn it lots of times.

How to build a hot compost

1. Have a compost bin

The bin should be able to hold 27 feet of material. If you can't get that one, you can go for an affordable container with about twelve cubic feet. Make sure the compost is close to the water so you can include water if need be. It should be close to the materials you intend to compost; the place should be leveled, not touching the fence or house.

Select your compost recipe (fungi or bacteria)

While making compost, you should try to balance the carbon-to-nitrogen ratio.

- High nitrogen: includes different manures and seed meals.
- Greens : examples of greens are coffee grounds, food scraps, and grass clippings.

- Woody : it has high and very high carbon, which includes wood chips, fall leaves, cardboard, and shredded paper.
- To make a bacteria compost recipe, it should be 20% high nitrogen, add 45% of greens and 35% of woody. If it is a fungus compost recipe, it should have 15% high nitrogen, 35% greens, and 50% woody. The recipe for the bacteria is good for lawns and some vegetables like cabbage.

2. Gather your ingredients

Gather all the ingredients you need to build a compost pile. For a cubic yard, you will have to make a total of thirty-five full buckets of material, that is,

- Seven buckets of high-nitrogen greens
- 16 buckets of regular greens
- 12 to 13 buckets of browns.

While measuring your materials, use volume instead of weight. Because weights will require work on the exact moisture content. Take cognizance of the ingredients that could have consistent herbicide residues on them.

3. Prepare the compost ingredient

Chop : Small chunks of material can be broken down faster than the bigger ones. It depends on the surface area. It would be best if you focused on getting the materials to about one to two-inch size. Shred the leaves using a shredder or the lawn mower if need be. It will stop them from forming a barrier to water and waiting inside the pile.

Moisten : Some of the material may become dry. It is vital to ensure the materials have a moisture level of 50%. You may need to wet high-carbon ingredients before you build your compost. Choose the

material and squeeze it a bit. If no water emanates from the material, it is scorched, and you must add water. If the stream of water keeps coming out, it means it is wet, and you have to spread it out and leave it to dry before using it.

4. Build the pile or fill the bin

The moment your materials are straightforward, you can mix them. If you have a massive bin system, you can fill your bin. A pile will likely become bigger than the top at the end, so begin with about four by 4 feet at the bottom and start from there.

Do not build the pile or fill the bin to the point 5 feet tall because it can squeeze the air out of the rise. Instead, as you add material, spray it with water.

5. Turn and protect

It is the final step, and it is essential to do it well. Immediately after pouring all the compost ingredients into the pile or bin, you must do the first turn. Here, the idea is to mix the materials very well. Suppose the materials are a bit dry; use this opportunity to spray the ingredients with water. Of course, the mixed compost must be protected to give you the correct result.

Chick Brooder

How to build a chick brooder

1. Cut the plywood

Get a plywood and cut a 4 by 8 ft sheet of plywood to the length you want. You can use a half-inch thick plywood so it can last. Thicker plywood doesn't have added weight. You can use one-eighth-inch thick plywood to make the unit lighter and easy to move.

One sheet of plywood is all you need to make a 4 by 4 feet unit. Get two sheets of plywood for a 4 ft by 6ft unit.

2. Add the cleats



Once you have cut the plywood to the size you want, please put it on the ground and join 2-inch by 4-inch lumber on the perimeter to act as a clear for adjoining the side walls and legs. You can use screws instead of nails to make it last longer.

3. Cut the sides of the panel



Then you will have to cut the four side panels. The two will be 4 X 12 ft, and the remaining two will have 12 inches in length. Adjoin the four sides of the panels to the point that the roof becomes four inches to the sides.

4. Add the legs



Then include the four corner legs. Ensure the leg is about two inches by 4 inches by 16 inches. It will provide about four inches of ground clearance for your chicks to go in and out of their chick brooder. Put two-inch by four-inch by four braces over the middle of the top for stability. If you want to build a six ft long unit, you don't have to add a top mount for the more minor four ft extended team.

5. Put the lamp sockets

Then, put two porcelain lamp sockets opposite each other on the longer six feet unit. You should get a porcelain lamp socket for the four ft by four by four unit. But if you can get one use a pancake mounting box for your sockets. The recessed top must be filled with wood shavings to act as insulation. It will help in retaining the heat.

Black soldier fly harvester

We will discuss how the black soldier fly can be grown for domestic use.

Building the breeding box

The breeding environment is made with different materials. We will build a wooden box where a plastic bin containing larvae and waste

can be placed.

Preparations of the boards

- Get an electric or hand saw and cut the six boards to the proper lengths.
- Use sandpaper for sanding the boards.
- Put an undercoat on all the board's sides and leave it to dry.
- Put a coat of wood paint and leave it to dry.
- Use a coat of varnish if you want, and leave it to dry.

1. Assemble the box

- Get screws and use the angles to assemble the boards on the box bottom.
- Then join the different sides of the box.
- Remove the cleats so they can strengthen the inner part of the box and adjoin the lid to it.
- Fix the cleats on the upper side of the walls using screws. Then put hinges and install the cover on your box.

2. Preparing the waste box

Once you notice the side of the waste bin is not very high, it will be helpful to add more barriers against the larvae escape. Put an old but used inner tube across the tray and leave some parts so it comes towards the inside.

Glue the inner tube to the tray, put the tray at the end of the box, and stick it on the side.

3. Preparing the slope

Cut the board's shape in trapezoid so that it can appear in a ramp form when positioned on the waste and joins the edge of the box at 45 degrees or less.

- Dice the cleats so they can fit into the ramp's external shapes.

- Hold them with screws on the ramp.

4. Installing the ramp

For easy maintenance, put the hinged ramp so one can lift it and remove the bin from the waste. Put a hinge on the lower side of the ramp. Adjoin the hinge to the box.

5. Cut the holes in the box

Do this so the flies can enter and come out of the larvae. The holes need to be drilled on the sides of the box.

Chapter Four: Off-Grid Electricity and Heating Projects

Off the grid, electricity is **not** connected to any county utility company or grid power system.

Types of Off-Grid Electricity Systems

Solar roof tiles

It is an excellent off-the-grid power source. Before installing a solar panel on your home, ensure your county regulations permit you to do so. Solar shingles can be used in place of the old ones. Installing a solar shingle on the roof is between \$20,000 to \$50,000 for a 2,500-square-foot home.

Residential wind Turbine

The wind is another energy you can tap into for the grid power source. Wind turbines have been reduced to fit into residential homes. And if you live in a windy place, it will be easy to set up a residential wind turbine. \$50,000 - \$60,000 will finish up the installation. As usual, check if it is acceptable by your residence government.

Geothermal heat pump

This kind of energy comes from beneath the earth's surface and can give power for twenty-four hours of energy seven days a week. You can harness geothermal energy by using a geothermal heat pump. A geothermal heat pump is a central heating and cooling system. The ground is the heat source when it is cold during the winter; it uses the earth as a heat sink during the summer.

Micro hydro Electricity

If you build your home close to a running stream or brook, you must look for micro hydroelectricity to power your house. Hydroelectricity uses running water to create electricity, mainly from the energy that comes from water that flows from a higher to a lower place. A micro-hydropower system functions by converting the flow of water into rotating energy that is later transformed into electricity using either a turbine, a pump, or a water wheel. Compared to wind, solar and geothermal power, it is easy to build micro hydroelectricity, which is cost-effective. But you need a specific on-site condition, so it won't be easy to pull this through effectively if you don't have a water source close to you.

How to build Solar Power System

So how do you build your own off-the-grid solar power system?

You can create your solar power system, and the amount to finish up with the building depends on how many things you want to power. Making your solar panel is time-consuming. The first thing you need to know is how solar cells generate electricity. Many solar panels used today are created with crystalline silicon wafers, which measure six square inches. Their electrons will begin to move when the sun shines on the wafers. This kind of electron flow is an electrical current. One full-sized solar panel, like the one used on a rooftop power system, will have sixty silicon wafers. You can make small panels if the electricity needs are not much. When you purchase individual solar cells, follow the process below to build your solar panel.

- Preparing the backing for the panel . You will have to drill holes in the board to pass through the wires for an individual cell.

- Wire the solar cells together . You need some experience to do this. Use a soldering iron to adjoin wire to the solar cells and then link each of the cells together.
- Adjoin cells to the backing if you can fix the solar cell to each support separately . It will make it easy to replace one cell if it is not operating well.

You will need a functional solar panel to create electricity when the sun shines brightly. Suppose you intend to pair the board with an inverter; in that case, you will need to turn direct current (DC) power from the sun to the alternating (AC) power used in most modern electronic devices.

To create a standalone off-grid system, you must put a battery pack and charge the controller using your solar setup. The battery pack will store excess energy, and the charge controller will manage the amount of electricity that goes into the battery.

Building a solar panel for your home is a bit complex. A standard grid-connected solar PV system that can power your home will be up to twenty solar panels, each of which must be joined together and mounted to the rooftop. You will also need the help of a qualified electrician to ascertain that your system has been built the right way before you can connect the panels to the electric grid.

How to create a solar panel

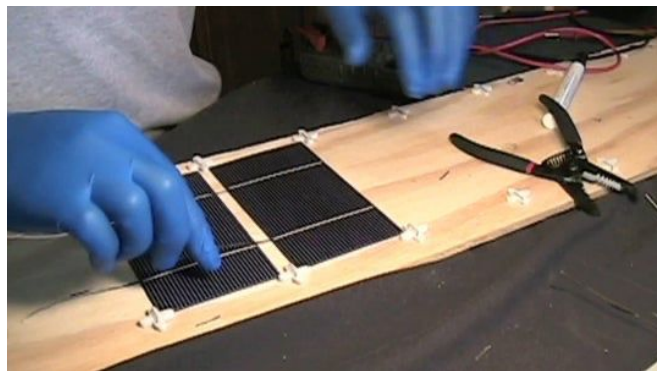
1. Making a template and putting the frame together



You will need to make a template for the kind of solar cells you want to build. To make the template, you will need plywood, regular solar cell-sized cardboard, a tile spacer, and staple gum. Get a rule to make the lines you will draw to be straight. Then, use a hand saw to cut the plywood.

Ensure the outer frame is not too high so that you lose any sunlight that could be retained in the solar cells. Clean and sand the plywood to remove any dust left on it.

2. Assembling the solar cells



While waiting for the coat to dry, assemble the solar cells. The solar cell bottom is the positive solar cells, and the solar cell top is the opposing side. You will need to connect the cells of solar with 36 solar cells to give you 63 watts. Use soldering iron in the tabbing wire to connect the solar cells. To collect the strings of the solar

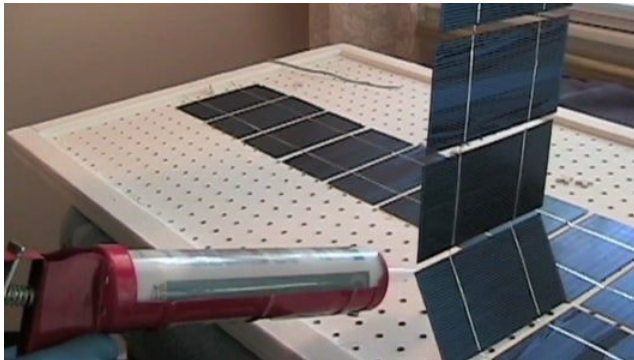
cells, you can use a bus wire. The bus wire will be fed to the end of the lines to make a long string.

3. Creating holes for the connections



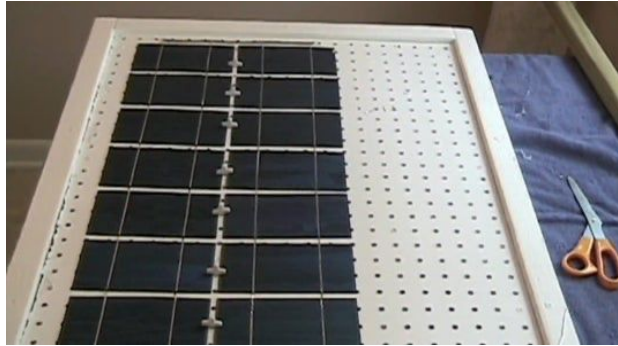
Now it is time for you to screw the pegboard inside the plywood. You can put the solar cells in the frame to know where to put the screws and then take the solar cells back out after making the marks. Drill two holes at the frame end to obtain the negative and positive connections.

4. Gluing the solar cells down



Use silicon to glue the solar cell strings to the pegboard. Since you have two strings, you can solder the bus wire on one part to ensure the two strings of solar cells bond. After soldering the string together, check the current or voltage immediately instead of waiting until you connect all the solar strings or cells.

5. Soldering bus wire



Once you have hooked the three strings of solar cells up, get your 22 inches along gauge wires for soldering. At the end of the leads from the gauge wires, connect some connectors so that soldering to the bus wire becomes very easy. To give the inner part of the solar panel a beautiful look, use two strips of old wire and run the cables into them. Then take the board outside in the sun to test the current or voltage of the panel to ensure you are getting 3.5amps and 18 volts in an open and short circuit.

6. Looking at the electric side



It would be best if you had a deep-cycle battery, a charge controller, and an inverter. Hooking them up together is simple. You can hook the solar panel connections to the charge controller's solar side and from the connection side of the charge controller's battery.

7. Including even pressure on the plexiglass



It would be best to keep the plexiglass safe by giving it even pressure across the edges. To achieve this, use a different set of outer frame pieces of plywood that is on the down part of the plexiglass and mounted above the plexiglass to give the even pressure you need. Ensure you drill slowly into the plexiglass to avoid cracking the glass, and ensure you have screws obtained from pressure-treated lumber.

8. Putting the junction box



Install a junction box on the solar panel's back. The junction box should have a blocking diode to stop the current's backflow once the solar panel is hooked on to the battery. Many charge controllers control the backflow of wind, but once the charge controller doesn't, you will have to install a blocking diode on the solar panel. So, installing the blocking diode on the outer part of the panel is good.

Finally, pass the silicon around the edges of the solar panel and the junction back. Check the voltage and mount the solar panel on your roof.

How to make wind turbines

A wind turbine should have

- A generator
- Blades
- A mounting that enables it to turn into the wind
- A tower to get the wind turbine to blow.
- Batteries and electronics control system

1. Getting a generator

Get a magnet DC motor or 30-volt Ametek motor. You will find it on eBay for about \$26. You can get any brand too. Make sure you test it before taking it home.

2. Making the blades

Cutting the blades and finding a place to connect them is the next thing to do. Some people made their blades by cutting them out of wood. Carving out the edges from a plank of wood will be stressful. Instead, use a PVC pipe and shape it into airfoils. Cut the pipe into 6 inches, which should be 24 inches long. Cut out the blade and use it as a template for the others. You should have four blades in total. Use your palm or belt sander to create extra shaping at the edges.

3. Building the hub

You will need a hub to bolt the blades and adjoin the motor. Get a toothed pulley that can fit into the motor shaft. Get a scrap disk of aluminum (five inches in diameter and a quarter thick) to bolt the blades.

4. Building the turbine mounting

Now you have to mount the tubing. You can scrape the motor to 2 by four wood. Cut a piece of 2 by 4 PVC pipe to create a shield on top of the engine and keep it secured. To keep it up in the wind, use a heavy aluminum sheet. Then you have to place the wind turbine in a place that will make it turn freely in the wind, so you have to put it in nearing and tower. Use a one-inch iron pipe and one ¼ inch steel electrical conduit. You can use a long piece of 1 ¼ inch conduit as the tower and one-inch pipe fittings at the two ends. Attach one inch at the head unit. The wires from your generator will pass via a hole drilled in the center of the conduit unit and be put at the end of the tower.

5. Build the tower base

To make the tower base, cut a two-foot diameter disk from plywood. You can make a U-Shaped assembly away from one-inch pipe fittings. The free tee can be turned around the one-inch pipe to create a hinge that allows you to raise and lower the tower. Next, you can add a close nipple, a one ¼ to 1 reduces the fitting and a twelve-inch nipple. You can now add a 1-inch tee between the reducer and the twelve-inch nipple to have a spot for the wires to leave the pipe. You can also make holes in the wooden disk to let you use steel stakes to lock it in position.

6. Paint all the wood parts

Paint the Wooden parts with different coats of white latex paint.

7. Build the charge controller

After completing the mechanical parts, you must make the electronic charge controller. The wind power system has a wind turbine battery to keep power produced by the turbine, a blocking diode to stop the energy from the batteries to waste, a secondary load to dump fuel

from the turbine into the batteries that are fully charged, and a charge controller to make it run perfectly. There are so many controllers for solar and wind power systems. You will likely get one from a store where that sells energy things. You can either buy a controller or build your controller.

The principle of the controllers is that it keeps tabs on the battery's voltage in the system and either send power through the turbine into the batteries to charge them or transfer the energy from the turbine into a secondary load if the batteries are charged. The wind turbine can be connected to the controller. Make the lines run from the controller to the battery. The loads are taken from the battery. Once the battery voltage drops below 11.9 volts, the controller will alternate from turbine power to battery charging. Once the battery voltage reaches 14 volts, the controller will switch to dumping the turbine power into a dummy load.

You can get trim posts to adjust the voltage level so the controller can toggle back and forth between the two states. Once the battery voltage is between 11.9V and 14.8V, the system will switch between dumping or charging. Always collect the battery before you connect the wind turbine. Ensure you disconnect the wind turbine when disengaging the system.

8. Erect the tower

When you are done fixing the battery, disassemble the turbine and pack the tools and parts you will need to gather, supposing you want to travel. Next, look for a spot to erect the tower. You can use nylon rope to raise the pole to four large wooden stakes placed in the ground. Then release the line from the rod once it is standing erect.

9. Erect the wind turbine

10. Connect the right electronics

The inverter, battery, prototype charge controller, and meter will sit on a plywood board. You can plug a long extension cord into the inverter and run power to the campsite. The moment the wind begins blowing, the turbine head can snap into it and start spinning up. It will spin up fast till the output voltage goes beyond the battery voltage and the blocking diode drop. When the voltage is optimal, the turbine will load as it starts dumping power into a battery when it is under load. The RPMs will increase a bit as the speed rises.

How to use kerosene lamps

1. Get old paper bags and make wicks with them. Cut your paper bags into strips three by 10 inches. Twist and roll the strips from one part to the other. Put the strips in two cups of water and salt mixture. Dry the paper wicks on a tray through the night before you use it. The salt on the wicks won't allow the paper to char when burning.
2. You can also make wicks from rope fiber. Use the ropes gotten from trees. Don't use plastic or synthetic types. Wind the strands together but loosely to create different strands of rope fibers that can fit the kerosene lamp opening. Put the fiber wick inside salted water to stop charring.

Chapter Five: Medical Care Solution

Hygiene

To live a healthy lifestyle, you must maintain hygiene in the bathroom, kitchen, and toilets. It is easy to maintain personal hygiene while living off-grid. Most of them use solar power to warm water for bathing or laundry. The moment is showering off-grid, it is a beautiful idea to stay in a wading pool or a big tub to catch the dirty water, which can be reused for watering plants and flushing toilets. When you do not have access to a shower or clean water to keep you clean, you can use wipes and waterless body shampoos and washes. The foam does not have to be rinsed, so they are suitable for off-grid living.

Cleanliness in your kitchen

The kitchen is the office of the home, and it is the most vital area to keep clean to stop food-borne illnesses. Ensure you wash your hands before preparing food, as failure will allow bacteria to spread. Hand washing can eliminate 30% of diarrhea-related sicknesses and twenty percent of respiratory infections. If you do not have access to clean water, use hand sanitizers that are anti-antibacterial. They aren't good as washing hands with water and soap, but they can make the cleanliness wash realize. It is also known it's then that you keep dishes clean.

Composting toilet

Composting toilets are made for off-grid living. They are safe and process odor without causing odor, and they can provide usable composts after individual use; it is good to pour sawdust in it.

Types of off-grid composting toilets

Septic system

A toilet and plumbing pipes lead to an above-the-ground sewage tank.

Electric incinerator toilet

It burns human waste away. You can run it with propane or electricity.

Honey bucket

It has a seat on top of a plastic bag-lined bucket. Setting up a honey bucket is simple. All you require is a seat, a bag, a bucket, and maybe some wood shavings or kitty litter. The problem has to do with disposing of waste. You can dig a hole somewhere on your land, empty the bags in the spot, and burn the plastic bucket. Or you can dump it in an area situated for human waste.

Compostable off-grid toilets

The off-grid toilet is the use of composting toilets. The bathrooms will evaporate the water in the human waste and turn the solid waste into fertilizer or compost without any offensive odor oozing out of it. Composting toilets can be costly and may begin to smell if you use them so often. Before using them, ensure they are permitted in your locality.

How to build your off-grid toilet

The best off-grid toilet to build is a compost toilet. It is easy to construct and easy to use. In addition, a compost toilet does not smell, and neither does it lead to pollution.

Below are the ways to build a compost toilet:

1. Building a sawdust toilet can be as simple as balancing a toilet seat on top of a 5-gallon bucket.

2. Gather your supplies. It is the first thing to do. You will require about two five-gallon buckets of equal height, four two-by-4 buckets, a toilet seat with hardware, a piece of plywood bigger than the toilet seat, and get eight screws.
3. Drill a hole the same size as the five-gallon buckets in your plywood.
4. Line the toilet seat at the center on top of the hole you have cut. Mark the places to drill those holes for the toilet seat hardware, then drill the holes.
5. Screw a two-by-four inch at each edge of the plywood to make four legs
6. Let the frame stand up on the legs. Then begin to put it together. Adjoin the toilet seat to plywood.
7. Put a bucket into the large hole to be sure it fits perfectly. Please include a few inches of sawdust, and it is ready to use.

Herbs

Caring for wounds and what to do to stop severe bleeding

In case of severe bleeding and you notice the victim appears cold with clammy skin, weak pulse, and loss of consciousness, it could mean that the victim will soon go into shock due to blood loss. In situations of moderate blood loss, the bleeding can cause the person to feel nauseous or lightheaded.

Tell the injured person to lie down on the floor while you chill for medical personnel to arrive.

Cuts and wounds

If the skin is scraped or cut, you will start bleeding because the blood vessels are in the damaged area.

A first aid treatment can be administered to the person. Use methylated spirit to dab the wound. You can also give a saline wash to remove the dirt or debris from damage. You can use an antiseptic spray at the site of the cut to keep a staunch blood flow and lower the risk of an amount. Put on a clean glove, and mount firm pressure to the wound using bondage or folded cloth for ten minutes. If the blood seeps through the fabric, add another bandage or cloth and keep mounting pressure on the cut for ten minutes.

If the small wound gets more significant or the surrounding becomes red, there may be the presence of an infection. If the person also starts feeling the pain again, seek medical attention.

How to make a first aid kit

Your first aid should contain the following;

- One adhesive cloth yard (10 yards)
- Two absorbent compress dressings (5 by 9)
- Twenty-five adhesive bandages.
- Five antibiotics ointment packets
- Five antiseptics wipe packets
- One breathing barrier
- Five packs of aspirin
- Two pairs of gloves
- One instant cold press
- One roller bandage
- Tweezers
- Oral thermometer
- Five sterile gauze pads.
- Two triangular bandages

Steps to making a first aid box

- Select a suitable container. The container should be big, water-resistant, and translucent. It should also have a lid to cover the tools.
- You can choose a labeled zip-close bag that is very big.
- Drill a hole into the sides of the container. The holes should be close to the top of the container. Make two holes on each side. And one hole should be about 4 inches from the second hole.
- Get a rope that can pass through the hole.
- Then feed the rope into the hole you made in the bucket.
- And tie it. The rope you fed into the hole will serve as the handle.
- Adding a rope is optional.

Off-Grid internet

Satellite is one of the internet services you can try to connect with using your devices. Suppose you consider a satellite to access the internet off the grid in the United States; you should read reviews about it before connecting to it. If you live in Canada, visit the Canada Radio-television and telecommunications division website. Then check the options listed for internet, television, mobile, and phone providers by territory and find the one close to your community.

Data plan on your mobile phone

Phone data plans have been the standard way to connect to the internet. My distant cousin has access to unlimited internet through his plan. So, he tethers his phone to his laptop. I would be thrilled to have access to a plan like that when I lived off-grid. So, I purchase a plan that gives me 40 gigs of data per month. Yeah right. I do that

so that I won't be caught up in between. So, when the primary source of internet service went down, I had an alternative and could tether my phone to the laptop I use.

Use a wireless turbo hub or stick to get the internet off the grid

You can use a wireless portable internet hub to access the internet. Get the one that has two backup batteries. Each battery can last up to thirty minutes. You can purchase one from Amazon. Before investing in a rocket stick or wireless internet hub, research to ensure you have the service in the area.

Drive into town to locate a wireless spot

At times this might be the only option available. For example, visit a tea shop or fast-food joint like McDonald's to use the free Wi-Fi there. Check your service provided for the nearest free Wi-Fi spots or inquire from the closest library.

Types of Off-Grid Summer Protection Systems

Most people staying off the grid tend to gravitate towards using the AC they are used to with solar or other renewable resources. Well, this works perfectly, but there are other systems you can use during the summer. Below are some of them;

Passive Solar Design

Get started by considering passive solar design. It means that you prevent the sun from overheating your home. So, place a window appropriately where the breeze can blow into your home. Use thermal batteries like thick earth walls to level the temperature during the day and night to keep your house comfortable. Thick earth walls keep the building very comfortable and relaxed. If your home is built modern, you can insulate your home with insulated

doors, double-paned windows, in-wall insulation, and additional high-R-value foam insulation.

Absorption coolers

One of the most intriguing developments in off-the-grid air conditioning is the fact that there is a renewed likeness in absorption air conditioners. Unlike compressor-based air conditioning units, absorption coolers, and traditional Freon, you can build absorption coolers from safe and cheap materials.

Ground or Earth cooling

It is an alternative to an air conditioning system. Beneath the ground, the temperature stays close to the yearly average temperature in your environment.

This idea of Earthship buildings has been used for ages to manage the summer heat in New Mexico. They usually build the north side in a large earth mound form with ducts that can transfer air made in them. The earth mound works like a giant thermal battery and provides insulation and protection for the structure. All you need to build an earth cooling system is to run a lengthy underground to interchange the room's heat with the ground.

Water cooling

If you have a natural source of water running through your land, like a river, spring, or stream, you should consider doing this. Install a cooling water system with a fan or heat exchange, and install an in-floor radiant heating loop with which you can run cool water during summer.

Swamp cooler

Another summer off-the-grid system is low-cost swamp coolers. Swamp coolers make use of water as their source to reduce room temperature through evaporation. They are cheap, but they might end up making the humidity of your room go up. They are also the most precise air conditioning units you can use without spending much; they run on only water through a pad that lets it cool the air through evaporation. This direct evaporation works best during dry seasons and is inefficient during humid climates. Another thing you can do is spray a fine mist of water into the air to cool it. You need a source of water for the swamp cooler to operate.

Types of Off-the-Grid Winter Protection Systems

Chilly winter seasons are moments you should adequately take time to prepare. Usually, the standard method used to heat homes is electricity, wood, and oil. But when it comes to keeping the house warm during winter, there are many options, mainly if you live off the grid.

Corn burning and multi-fuel pellet

Burning corn water was standard during the days of the great depression; it is with great pleasure that I say that corn burning and multi-fuel pellet is making a comeback. Thankfully, living off the grid makes you start a farm; you could plant corn with the hope of shelling it and storing it for the winter so you can use it to heat the house.

Masonry Heaters

Masonry heaters built out of tiles, brick, natural stone, and soapstone can heat the home. A masonry heater contains channels and a firebox that can be used to exchange heat.

Boilers or Wood-Burning

If you love the idea of a fireplace or woodstove but want to enjoy the convenience of a packaged home heating system, you should build a wood-burning furnace.

Air-to-water radiant heat

The idea of using hot water to heat a home is a tradition that is widely accepted. You can get a backup generator with a liquid cooling system to maintain the engine coolness while using it. One way is to plumb the cooling system with a radiator in your home and use it selectively as an inside radiator during winter.

Air-to-Air Radiant Heat

Like the air-to-water radiant heat, you can have a system that can collect cool air from outside and pass it onto a solar heat collector that heats the air before it gets piped into your house. It can work perfectly during summer.

Solar Window Boxes

It depends on where you reside. Solar window boxes can be used as a heating source. They have an airtight box made of translucent materials that let the sun warm the air. So, the warm air gets out through your home's duct or other openings. Get a professional to install them for you, or better still, learn how to do it yourself. They are pretty cheap to purchase, and there are so many tutorials you can get online.

Some things you cannot do without living off-grid

Shelter

It would help if you had shelter after you have acquired land. Depending on your taste, you can build a cabin, a home from a plank of wood, a tiny home, a cob house, or a straw bale home. You should know the type of shelter you want before you buy your land so you can proceed to build immediately.

Water and water collection system

A clean portable water source is vital for living off the grid. First, choose a piece of land with a natural water source or where it is convenient for you to get water. Then purchase a water collection system such as a water container, rain barrel stuck to your home cutter, or water cistern collection system like big containers to collect all the rainwater from the roof.

Food

Prepare your mind to grow your food since you cannot access grocery stores daily. You will benefit from this by going to your garden of food.

Power generation system

It is where the off-the-grid part comes in. First, you will need to look for ways to generate electricity yourself. Then, you will have to acquire a power-generating system that can provide the electricity you need to run all your stoves, appliances, washing machine, computer, TV, refrigerator, etc.

For starters, you can get a few 250-watt solar panels and 250-500 watt wind turbines. You can also buy about a 1500-3000 watt generator that is not all that cost for about \$1000 or less.

Waste disposal and septic system

You will have to look for a way to sort this out. For example, you can dig a traditional septic system or look for how to dispose of waste through waste disposal systems.

Phone and Internet Access

To remain connected to the internet, you need to plan ahead. Many people living off the grid will get a PO box to visit periodically or work with a family member to forward their most crucial mail to their address.

Home Fire Protection System

It is vital to install the equipment you can use during a fire emergency. Install a fire alarm device, have a fire extinguisher, and a bucketful of sand stored somewhere on your property for emergency cases.

Summer and Winter Protection

Summer and winter seasons should be prepared adequately. During summer, you will need equipment that will help make your home a bit cool; then, you need to have pieces of stuff that will generate heat in your home during winter.

Clothing

It would be best if you had clothes that would make you blend in with the natives. You should have separate cloth for farming, welding, and going around the town to purchase some items.

Flood Protection

If the location of the off-grid environment you moved into has a history of flooding, you might need to prepare for this period. As the rainy season draws near, buy equipment to prevent flooding in your

home. Build your shelter in a way that flood cannot quickly go through, and the building should be raised.

Conclusion

Off-grid living is an excellent way to break from the city's hustle and bustle. However, off-grid living has advantages, like developing new skills that make living expenses very low, and disadvantages, such as inconvenience.

Living off the grid at first won't be all sweet and fun as you are in for lots of inconveniences. You will make many compromises regarding everyday living when you live off the grid. For example, you will no longer have unlimited access to grocery stores and primary health care. You may not be able to ask for the services of professionals like plumbers, auto repairers, constructionists, etc. You may have to learn to do everything all by yourself.

In off-grid living, you are the one who can create your reality, as your location will likely be far away from where you can quickly call people to help you drill a well or build a solar panel. This book has effectively provided the steps to produce some of the projects you need to make life stress-free regarding off-grid living. Follow the instructions to create your solar panel, kerosene lamps, toilets, garden, and so on.

Good luck!