

Self-Sufficiency Within The Home Environment



Ruben A. Matahelumual
Built Environment



Why live more self-sufficient?

After the second World War, economies began to accelerate into the “Golden Age”, ending the great depression. Many countries that had been devastated by the war reported enormous economic growth in the 50s and 60s. The availability of money and resources in western countries resulted in a vast increase of our lifestyles and standards. In many western nations, we have become extremely spoiled, with an abundance of food and luxury items, big houses and personal transportation. And while we continue to desire higher wages and higher standards, we want to pay less and less for our lifestyles.

Because of our standards in the West and in consequence raising standards across the globe, we are living unsustainably.

Ecological Footprint & Earth Overshoot Day

Our global Ecological Footprint is 70% higher than what would be sustainable, resulting in the Earth Overshoot Day. The Earth Overshoot Day measures the date when we have used all of the bio-capacity, or resources, Earth has to offer in that year. In 2020, that date was July 29th. This means that all of the resources we used in the five months after the Earth Overshoot Day were used unsustainably.

Ethics

The way we are living on Earth right now is unsustainable. And although big corporations and the governments are the biggest polluters, everyone should feel inclined to make a change, however small. The most ethical thing we can do is to strive for a better future for ourselves, our loved ones and for our planet.

Did you know?
Luxembourg is the least sustainable country on Earth. We would need almost 10 Earths if everyone would live like them!

What is self-sufficiency?

Self-sufficiency is “the quality or state of being able to provide everything you need, especially food, without the help of other people or countries”
Complete self-sufficiency is thus impossible, as we can’t make everything we need and use. But we can strive to being *more* self-sufficient.

Ways to become more self-sufficient

One step at a time

Food

Why?
Growing your own food has many advantages, and everyone who has a bit of space and time to spare can start growing their own food today! Growing your own food can save money, guarantee freshness & more nutrients, controls what goes in and on what you grow is relaxing and easier than ever!

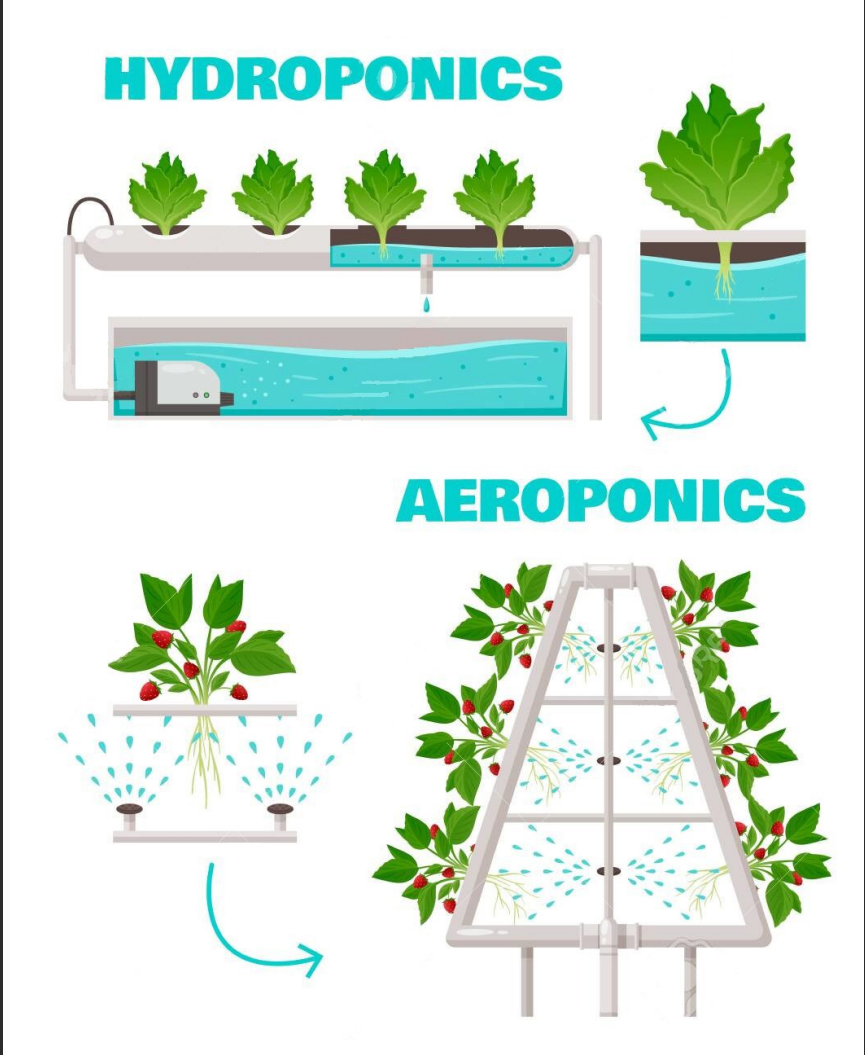
How?
Hydroponics and *aeroponics* are soil-less ways of gardening, by using nutrient-rich water. With *hydroponics*, the roots of crops are submerged in water, while the roots of crops are sprayed with nutrient-rich water with *aeroponics*.

Advantages
Up to 99% less space, up to 98% less water, higher yields, less labour intensive, higher quality crops, less pests and diseases, more predictable, faster, no weeds, fewer insecticides & herbicides, possible indoor, less chance of root rot (*aeroponics*)

Disadvantages
High investment, risk of no return on investment, requires some expertise, risks of water & electricity, not feasible with all crops

Did you know?
80% of agricultural land is used for meat production and meat accounts for 15% yet meat only makes up 15% of our calories!

Alternatives
Growing crops in soil requires a smaller investment up-front, but is much more labour intensive and takes a lot more space!



Power

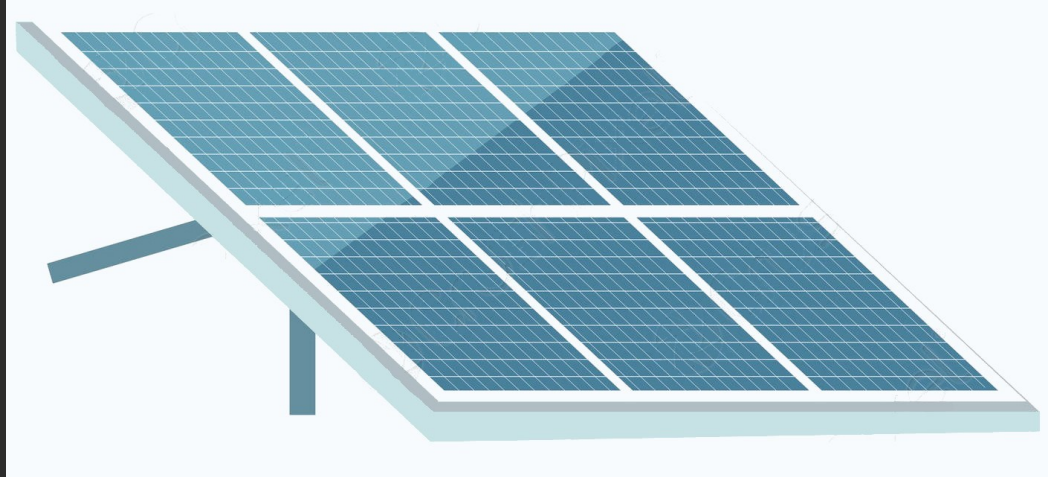
Why?
Energy use in residential buildings is the biggest polluter everyone can influence. Energy for residential buildings are responsible for 10.9% of emissions. Although our electrical devices continue to become more energy-efficient, they get more powerful and the number of devices increase. This means we use more and more power. But we also have many technologies to produce our own power.

How?
Solar panels are a very common way to produce one’s own power. This technology is readily available and is offered by many companies. To be able to completely life off-grid, you need to store the energy that is produced during the day. And although there are some options out there, storing your solar energy still isn’t very feasible today.

Advantages
Low maintenance, reduces electricity bills, diverse applications

Disadvantages
Expensive, difficult recycling, weather dependent, energy storage is expensive,

Alternatives



Alternatives and additions to utilizing solar panels are wind turbines, solar hot water panels, a groundwater heat exchanger, optimal sunlight usage and much more. Altogether, you can make your house more energy neutral and even strive for a completely energy neutral house (Passivhaus), where you would only need power for electrical devices!

Water

Why?
Fresh water is the most important resource on Earth. Without water, we wouldn’t be alive. It just so happens that fresh, clean water falls from the sky every single day! But this clean water goes from our roofs, directly into the sewer system, mixing with foul water!

How?
You can collect rainwater, filter it and use it for your shower, bathtub, sink, washer and more. Drinking water should be filtered very well with special filters, so that there are no contaminants. If you have a living roof with layers of sand, your water will even get a pre-filter!

Advantages
No chemicals,

Disadvantages
High costs,

Alternatives

There are different stages in being self-sufficient with water. You can just start by collecting rainwater for irrigation and using grey water (wastewater without fecal contamination) for irrigation or flushing the toilet, to being completely self-sufficient!



Did you know?
One billion people don’t have sufficient water!

Simple Products

Why?
In our society, we are used to buying products we can afford and like. Many people don’t think twice before buying products like soap and shampoo. But when you read the ingredients on the bottle, it feels like you are staring at an endless list of chlorides, silicones and sulfates. But you don’t need most of these chemicals in basic hygiene products! These past few years, more and more sustainable hygiene brands have popped up. Nevertheless, most people don’t realise you can make these products on your own! It’s easy, sustainable and a lot of fun!

How?
For a simple soap bar, you need oil, sodium hydroxide and water, that’s it! Of course, you can add scents, colour and other ingredients to make the soap you like. If you want to make liquid soaps, you just need potassium hydroxide instead of sodium hydroxide.

There are many more simple products you can make yourself, like conditioner, clothes, candles, cleaners, furniture, salves, remedies & tinctures and much more!



Advantages
More natural and sustainable than store-bought (no plastics, less chemicals, less transportation), cheaper, healthier

Disadvantages
Time-intensive, some tools required