



## **ATMOSPHERIC WATER GENERATOR**

*It's like having a tap that never stops running*



# PUMPING IRON

Drilling a hole into the ground to extract water is extremely costly, and very energy intensive. The up front cost can be as much as €45,000.

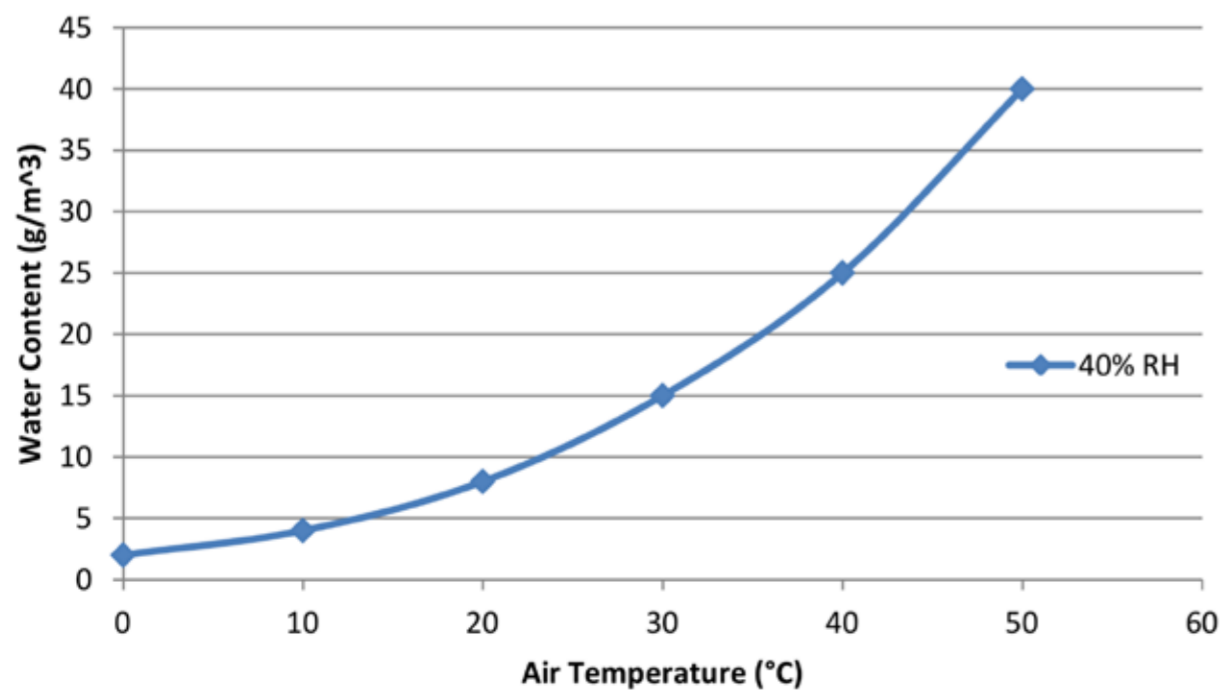
Extracting water from the air is like squeezing a sponge. There is hardly any resistance at all, so very little energy is required to accomplish the task. More importantly, the atmospheric ocean will never run dry.

Drilling into the ground may provide customers with water, but at a considerable cost to the environment.

# NATURE IS OUR ALLY, NOT OUR ENEMY.



**Water Content against Temperature for constant Relative Humidity**



By encouraging people to extract water from the atmosphere, we can reduce the volume of ground water being used. If this approach is adopted, and in large enough numbers, it will be possible to completely reverse the effects of drought caused by low ground water levels. Plants and trees know what to do, they just need the water to do it.

Harnessing natural principles and using them to achieve specific tasks reduces energy dependence. The generator is extremely energy efficient because the natural principles do not need a form of energy to power them.

# SHORT STRAWS

Water is the universal solvent for all forms of life on Earth. As a consequence, a prolonged absence of water has a profoundly negative impact on all forms of life on Earth.

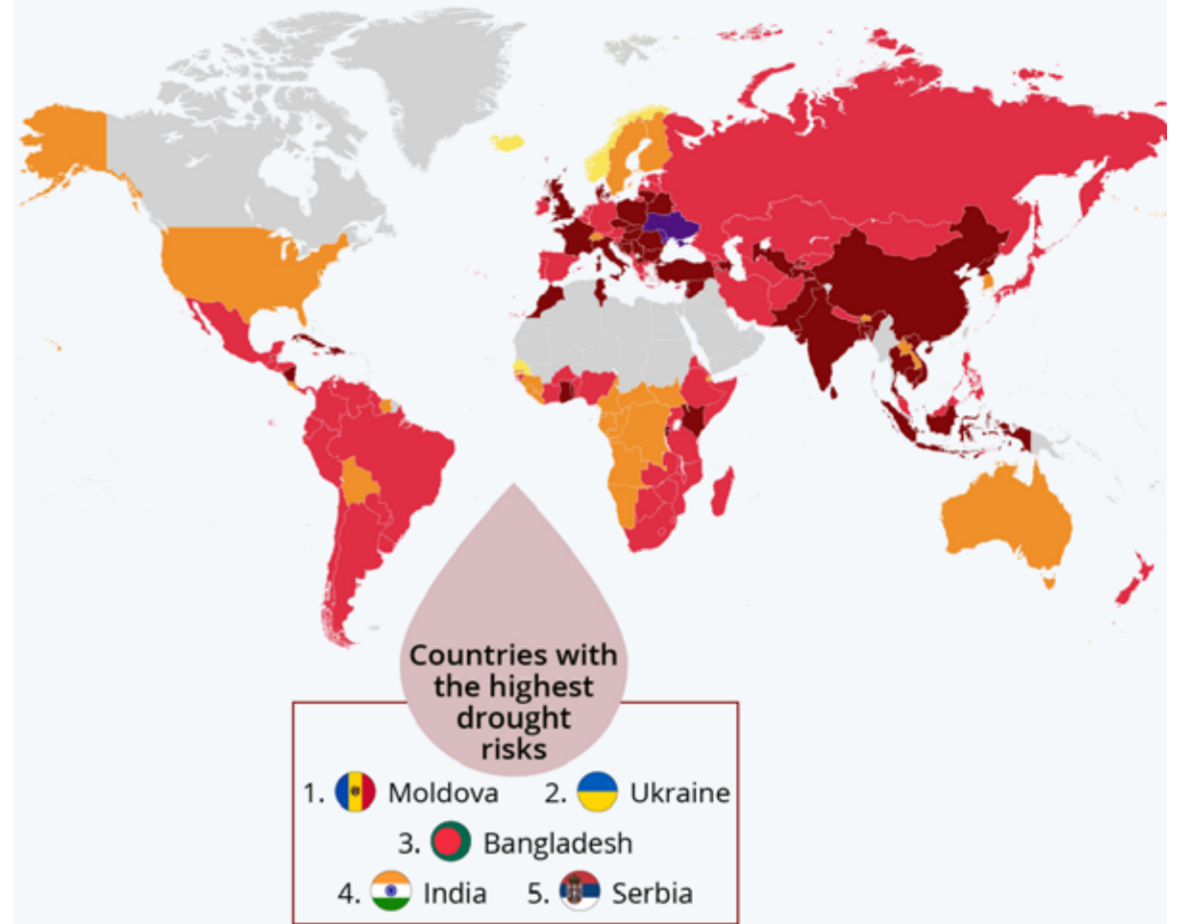
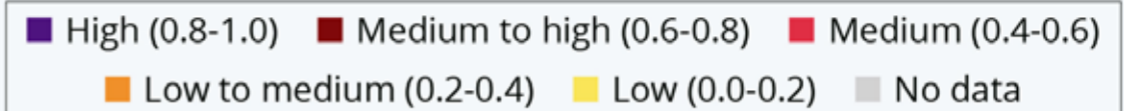
One of the most important lessons to learn, is that plants and trees create their own micro-climate. As long as there is sufficient water under the ground, there will never be a problem on the surface.

Trees act like giant straws sucking water from deep below the ground, raising it high into the air, where it evaporates from the surface of the leaves as an invisible mist. All they need to accomplish this task, is groundwater.



## The World Map of Drought Risk

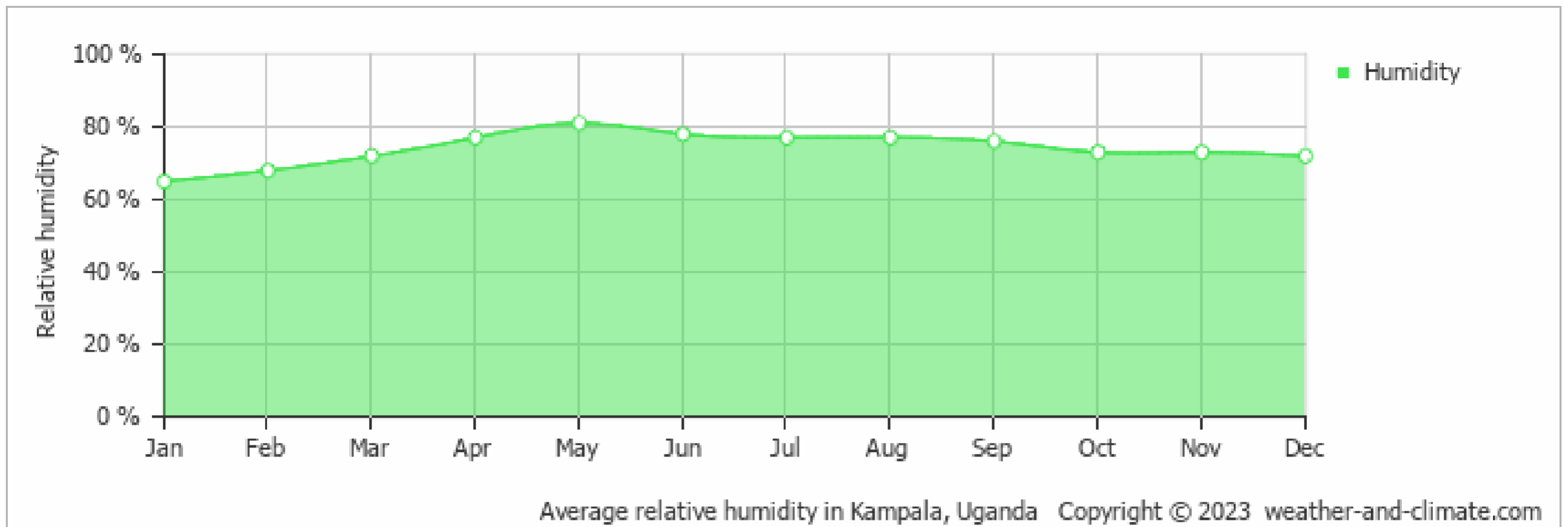
Countries by their drought risk index score



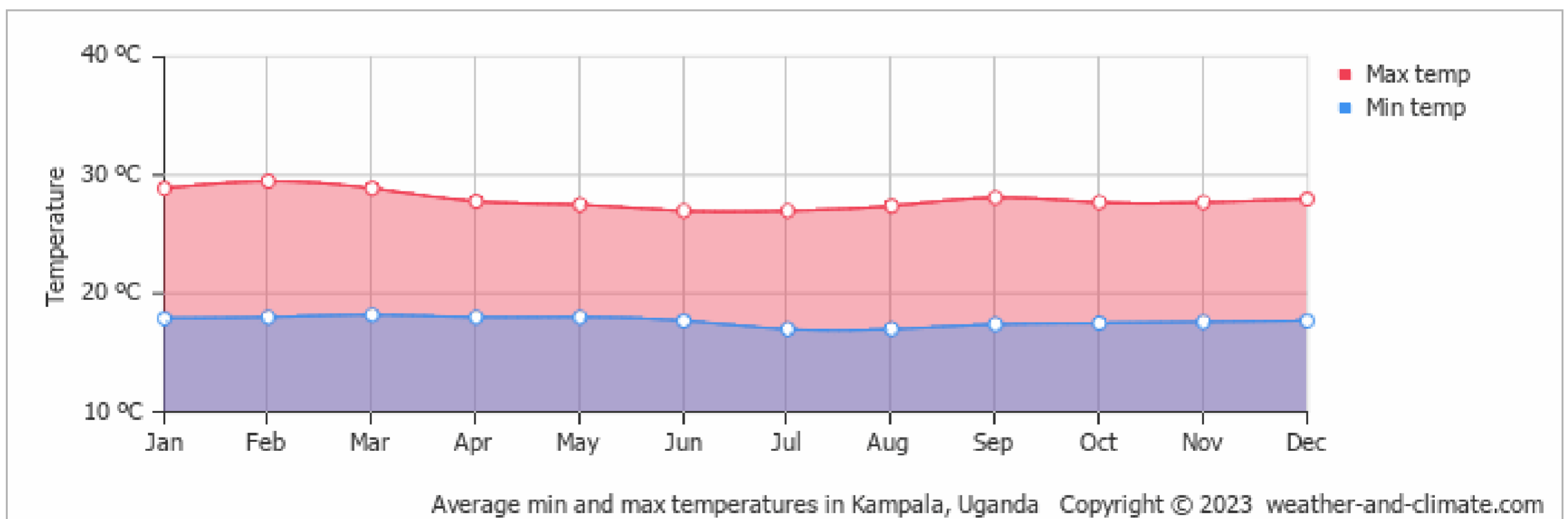
Soil is the living 'skin' of the Earth. The roots of trees act like giant sponges which keep the soil constantly moist. Cutting trees down kills the sponges below the ground, when the sponges die, the skin starts drying out. Once a process of desertification begins, it's very hard to stop.

Atmospheric water generators are a simple solution to a complex problem. The technology is very reliable, the units are energy efficient and, more importantly, the atmospheric ocean will never run dry.

# ATMOSPHERIC DATA FOR UGANDA



## HUMIDITY



## TEMPERATURE

# WATER HARVESTING

Air behaves like a sponge; the warmer the air temperature, the more water the sponge can hold. The colder the air temperature, the less water the sponge can hold. To wring out the sponge, warm air must be subjected to a cold environment.

The by product of a temperature exchange, is water, in the form of condensation. An atmospheric water generator is a machine that is dedicated to extracting water moisture from the air.



13,000 km<sup>3</sup>  
of water

is found in the atmosphere  
at any given time



495,000 km<sup>3</sup>  
of water

is cycled through the  
atmosphere annually



1,356 km<sup>3</sup>  
of water

is 'manufactured' by natural  
processes & injected daily back  
into the atmosphere



Every 10 days

the total volume of water in  
the air is replaced



Yet only 600 km<sup>3</sup>

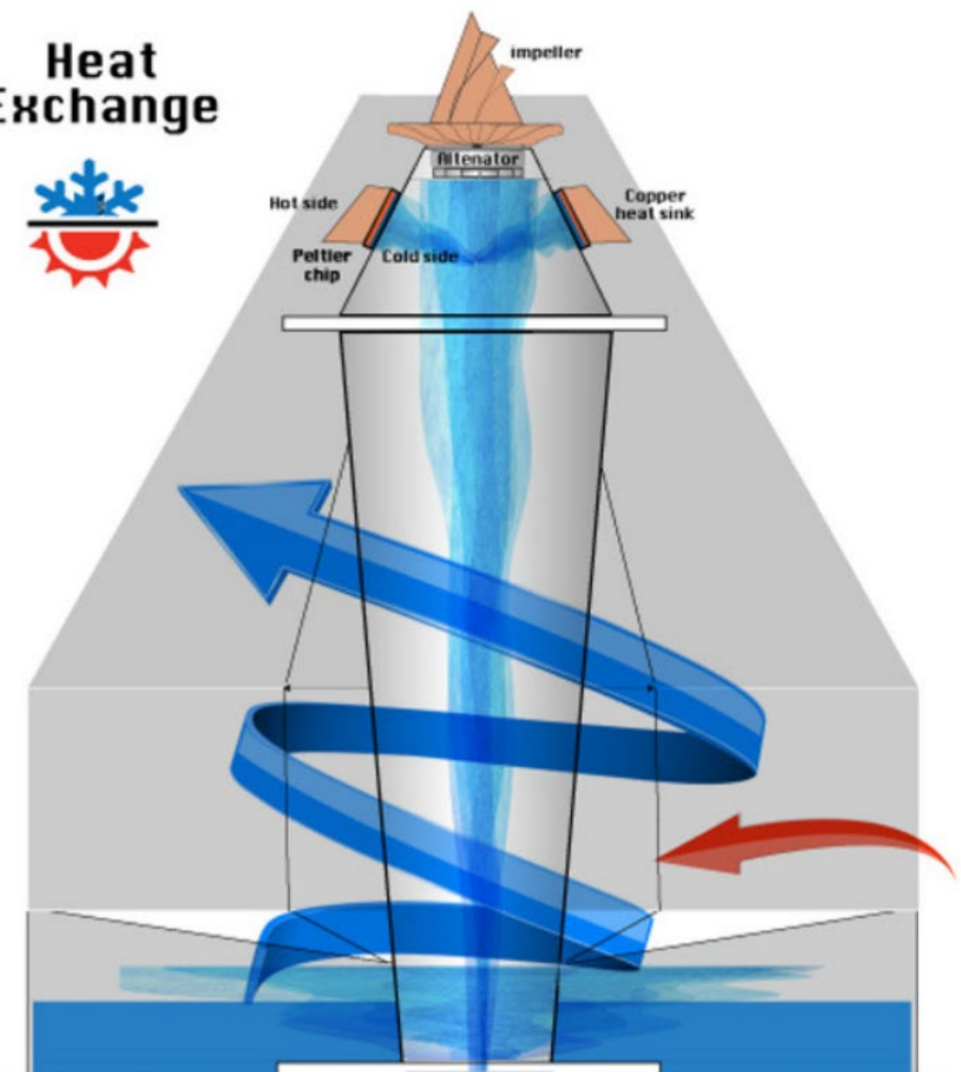
of drinking water is consumed  
each year

**“When you have  
experienced life without  
water, you learn to  
appreciate the value of  
every single drop.”**

Taun Richards founder [mywatergenerator.com](http://mywatergenerator.com)

Leveraging the natural principles  
of radiation, conduction, and convection.

Heat  
Exchange



It's like having a tap  
that never stops running



# HOW TO CALCULATE THE VOLUME OF WATER IN THE AIR

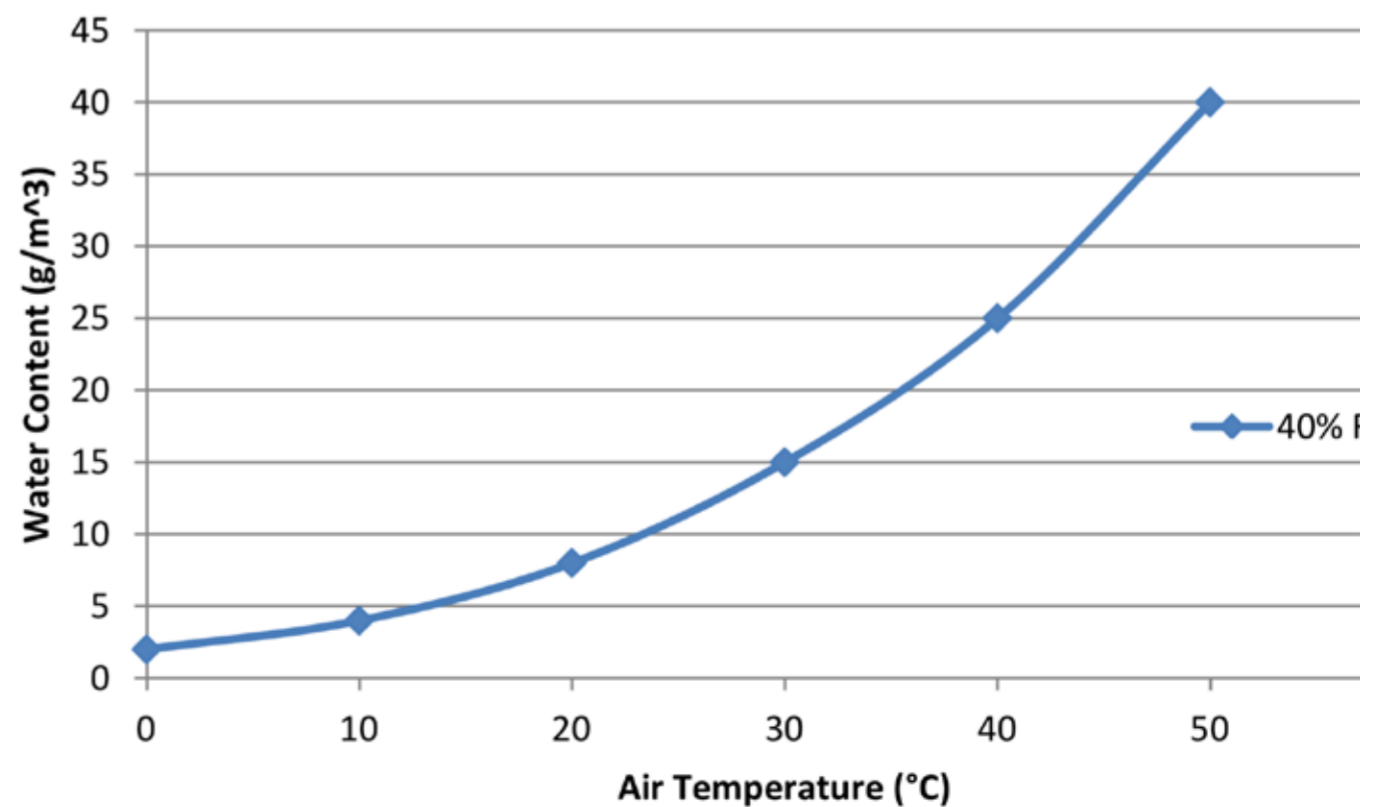


Temperature (°C)	Volume g/m <sup>3</sup>
-25	0.64
-20	1.05
-15	1.58
-10	2.31
-5	3.37
0	4.89
5	6.82
10	9.39
15	12.8
20	17.3
30	30.4
40	51.1
50	83.0
60	130

**One litre of water weighs 1000g.**

**Temperature and relative humidity chart showing how much air has to be processed to produce one litre of water.**

**Water Content against Temperature for constant Relative Humidity**



# RELATIVE DENSITY AND HUMIDITY

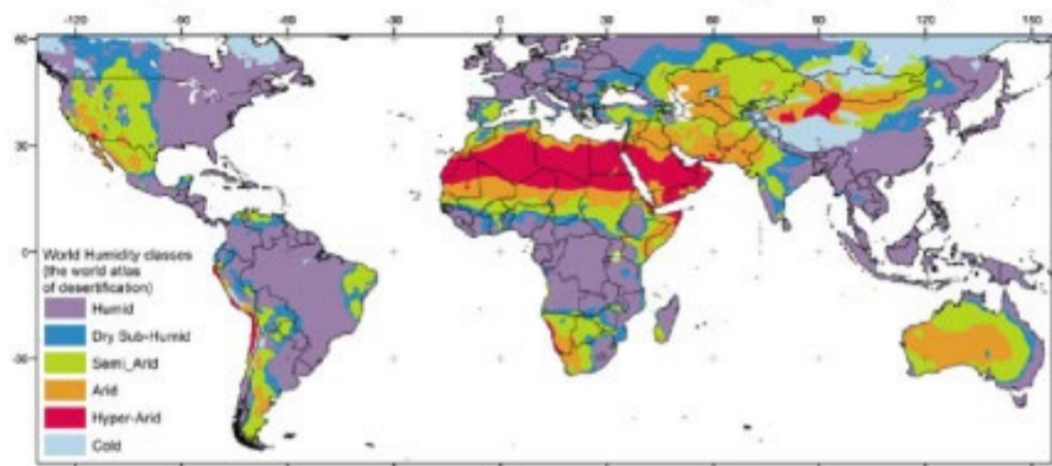
Hot air rises, cold air sinks. This is one of the immutable laws of thermodynamics.

Lower temperatures leads to higher density, and higher temperatures leads to lower density. This is because warmer molecules of air move faster, creating an expansion effect that decreases air density. The density of one medium, relative to another, determines its position within a column.

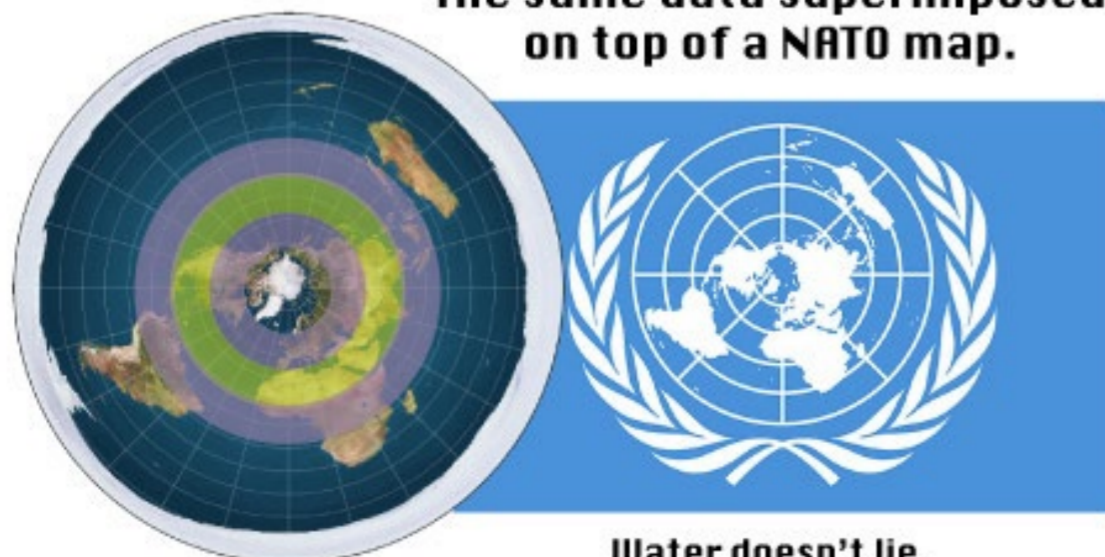


Relative humidity describes how full the sponge is, at any given temperature.

## Atmospheric data shown to the general public



## The same data superimposed on top of a NATO map.



Water doesn't lie.  
We can use the nature of water,

At 20°C and (60%RH), 1m<sup>3</sup> of air contains 13 grams of water. 1 litre of water weighs 1000 grams. To extract one litre of water, I have to process a minimum of 83m<sup>3</sup> of air. A typical ducting fan can push 1220m<sup>3</sup> of air per hour. Based on the above temperature, relative humidity, and air flow rate, the maximum yield possible would be 168 litres per day.

At 30°C and (100% RH), 1m<sup>3</sup> of air contains 30 grams of water. To extract 1 litre of water, I have to process a minimum of 33m<sup>3</sup> of air. At these values, the same air flow rate would yield a maximum of 720 litres per day.

# AQUAPONICS ~ HYDROPONICS



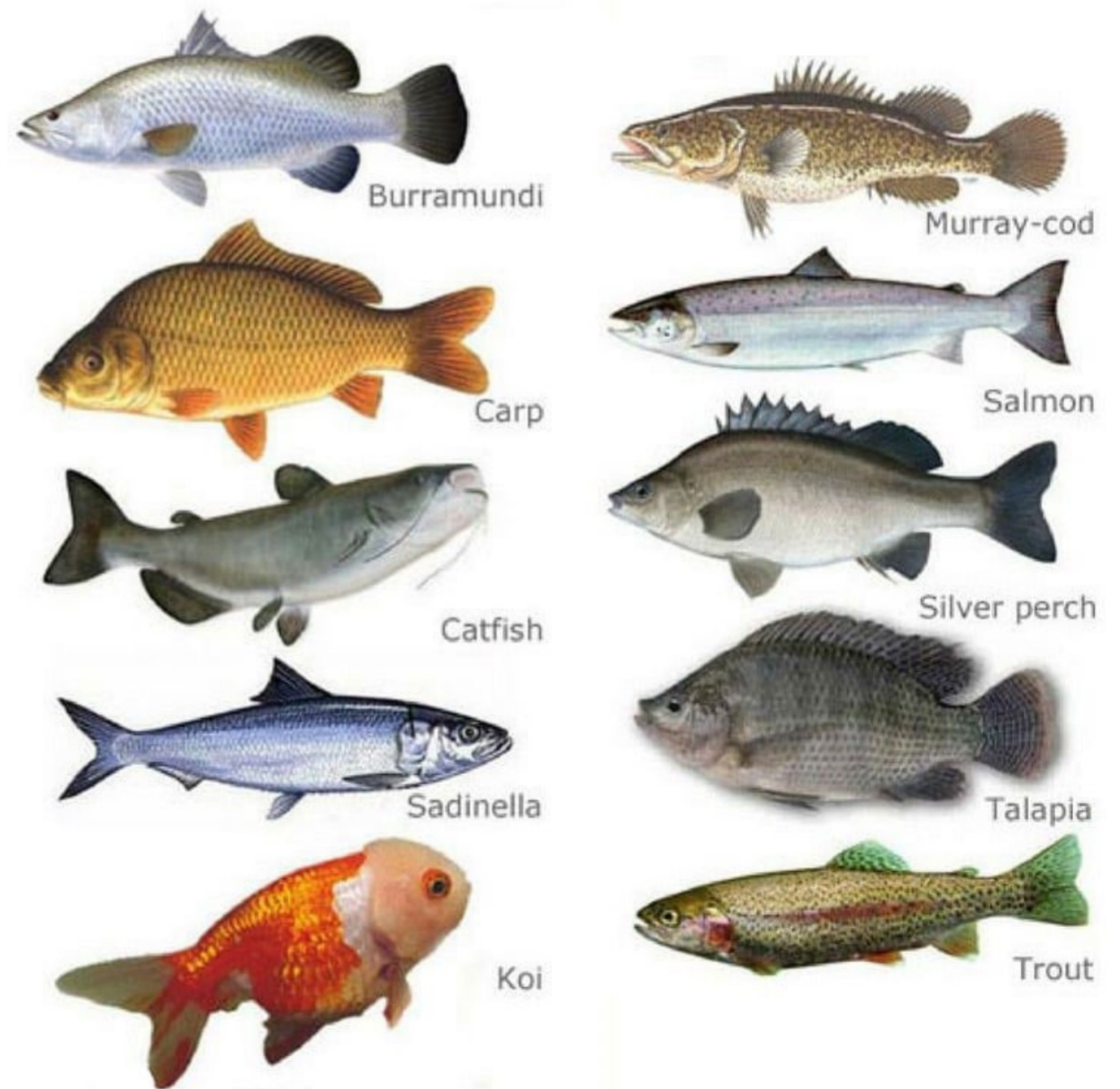
Aquaponics is a cooperation between plants and fish. Hydroponics is a way of growing plants without soil. In both cases the plants derive all the nutrients they need from the water the plants are growing in.

In the case of Aquaponics, the waste that the fish excrete is converted into nutrients which nourish the plant. In turn, the plants consume the nutrients which helps to purify the water. The relationship is entirely symbiotic.

In addition to their role as water generators, the floating platforms can be used to grow plants, and fish. The modular format make them quick and easy to assemble.

Because plants roots act like biological filters, the overall quality of water will be improved. Also, the water that is being introduced back into the reservoir increases oxygen levels in the water the same way a waterfall does.

A small fleet of these floating platforms can refill any reservoir with water, and restock any lake with fish.



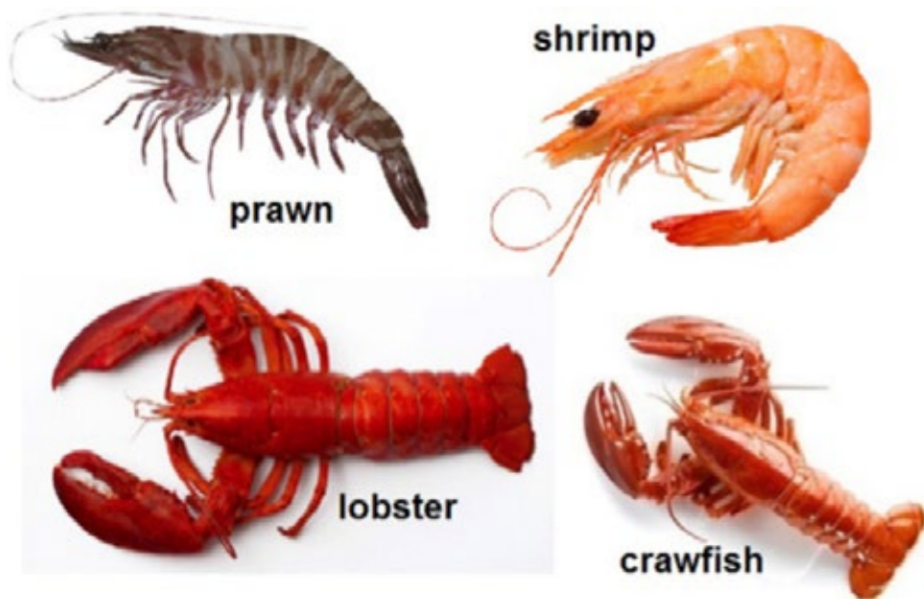
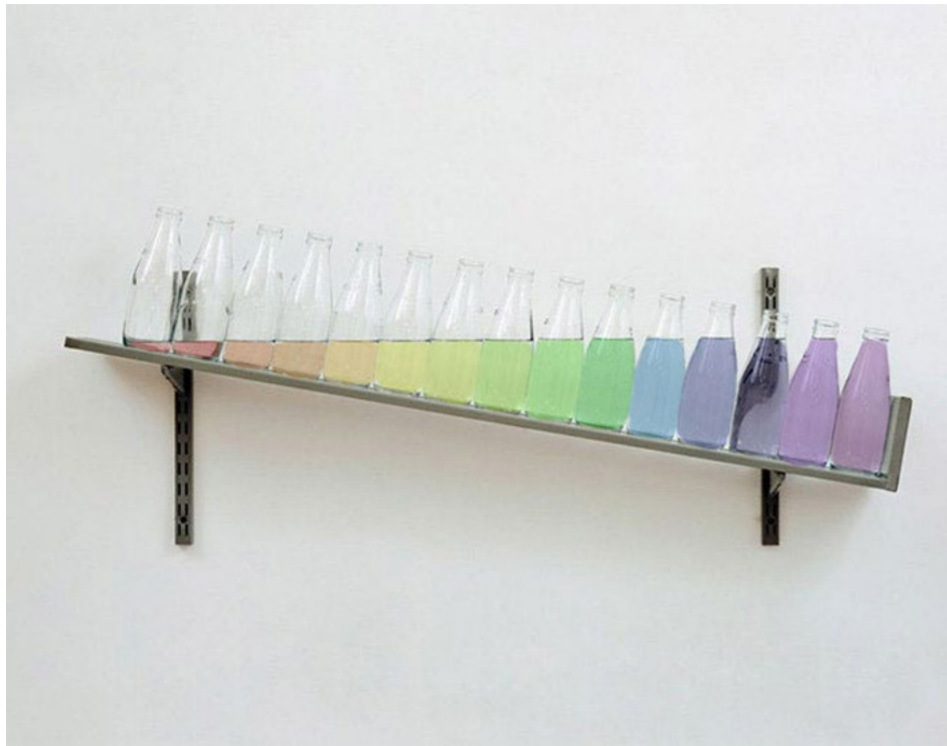


## AQUA CULTURE

Ancient cultures used to grow food on top of water, the same system still works to this day. The surface of still water is always perfectly flat, and level, so it is ready to build on.

Evaporation is a problem that affects all standing bodies of water. Floating platforms can reduce the effect of evaporation and actually refill reservoirs with water extracted from the atmosphere. The volume of water that can be generated from a standard size platform is in excess of 20,000 litres per day, or 7,300,000 litres per annum.

Platforms are made from biologically inert materials which means that no pollutants are being introduced into the water. Modern aqua culture techniques merge technology with the ancient farming method to produce an abundance of fresh food, locally.



## THE PELTIER EFFECT

When a voltage is applied across joined conductors, and heat is removed at one junction, a cooling effect occurs. This is known as the Peltier effect. By leveraging the Peltier effect, it is possible to produce extremely low temperatures, down to  $-60^{\circ}\text{C}$ , using only 12 volts of D.C. current.

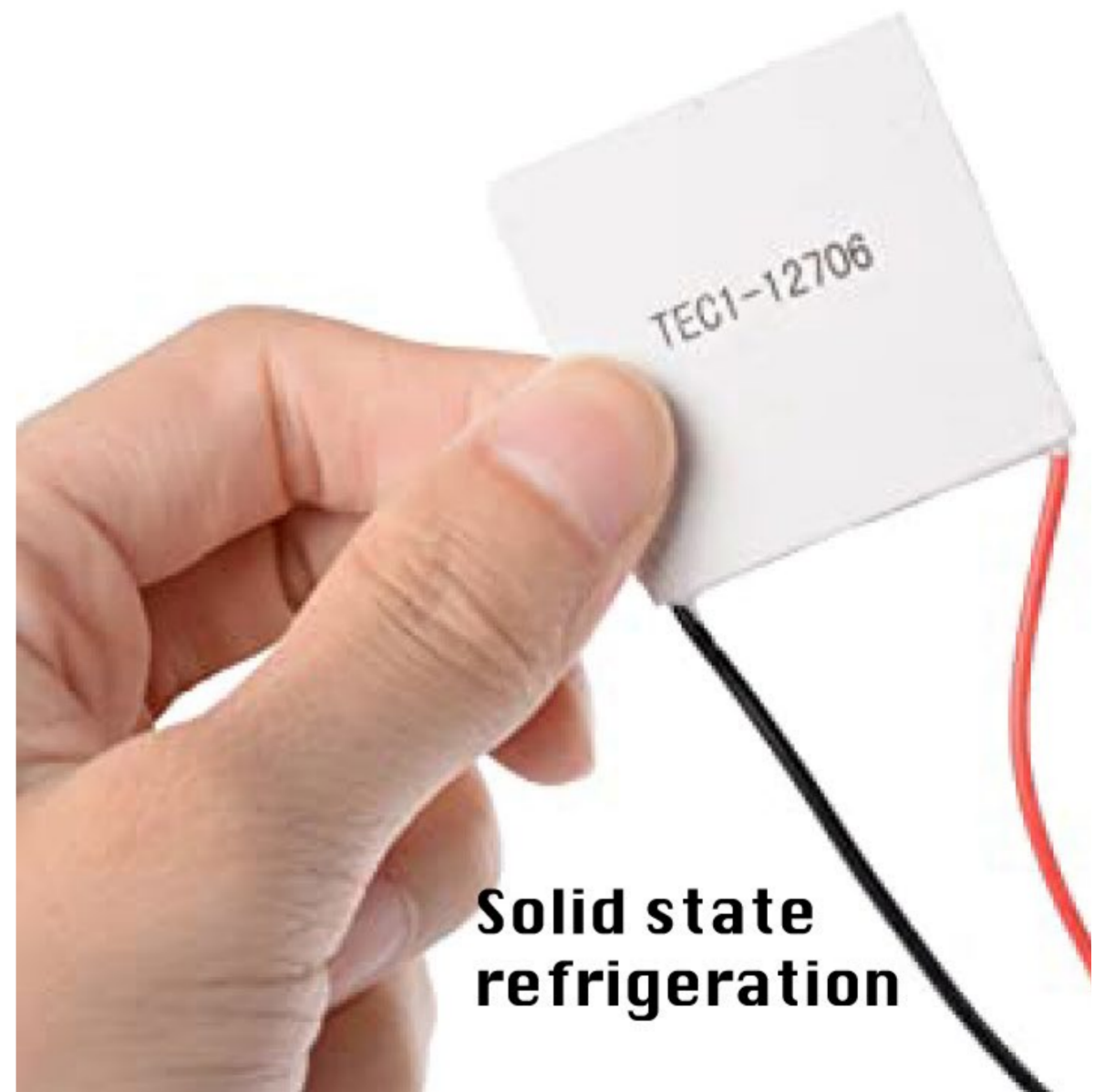
Solid state refrigeration has no moving parts. This makes the generators ultra reliable and easy to maintain. The modules produce a rapid cooling effect the moment current is applied and the temperature of the module can be easily managed by a thermostatic controller.

A Peltier cooling module, is a solid-state active heat pump which transfers heat from one side of the device to the other, depending on the direction of the current. Reliability and energy efficiency are the key components of solid state refrigeration.

The thermoelectric cooler assembly is up to two times more efficient than a compressor-based system in all test conditions and because the Peltier modules have no moving parts, they can be rated to last for more than 100,000 hours of continuous operation.



**old style refrigeration unit**



**Solid state refrigeration**

## STRUCTURED WATER

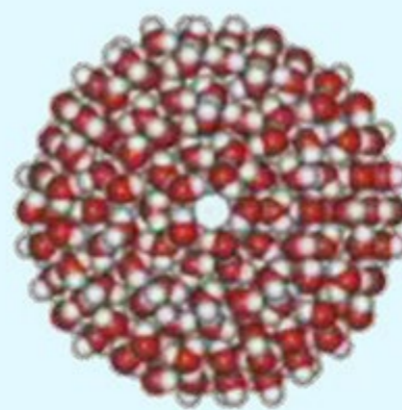
Purity is standards based, not judgement based. The moment any minerals become dissolved in water, the water ceases to be pure water. Consumers have no way of knowing the quality of dissolved minerals in the water they are drinking.

In its purest form, water has absolutely no mineral content whatsoever. Distillation removes the need to test for contaminants because it can remove

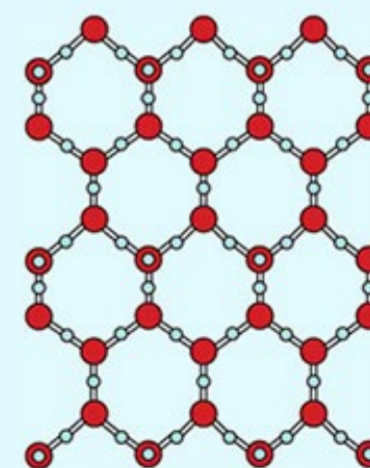
Plants absorb  $H_2O$  from the soil and convert it into  $H_3O_2$ . This is the type of water that the cells in the body actually need, and the only type of water that they can actually utilise. Water from fruits and vegetables contains all the minerals you will ever need, in their purest, and most available form.

Plants use solar energy to convert  $H_2O$  into  $H_3O_2$  and while our bodies can also convert water into  $H_3O_2$ , it takes energy to convert anything. Why expend energy converting water into  $H_3O_2$  when the plants have already done it?

## WHAT IS THE PUREST WATER ON THE PLANET



Molecular Structure -  
Borewell water



Molecular Structure -  
Structured water

## THE HIDDEN COST OF HARD WATER



Ground water contains a large volume of dissolved minerals. Farmers have to regularly replace equipment because of calcium build up in the filters, pumps and lines. This expense could be avoided if they used an atmospheric water generator as their primary source of water.

Calcium deposits build up on heating elements inside kettles and boilers, dishwashers and washing machines, reducing their efficiency over time. The dissolved minerals also stick to plastic, glass, ceramics and metals.

An oasis in the desert proves that life can thrive, as long as there is water. The solution to stopping desertification, is to stop pumping water out of the ground. When water levels return to normal, life will return, and when it does, it will create its own micro-climate.



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