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Greece, Water Scarcity

Hemp, Exchange For Cotton In Greece

Close your eyes and think about the country Greece. Do rich people, living in white, and blue houses, on the beach come to mind? Well you're right, but of course I wouldn't come all this way just to write a paper about how beautiful and populous Greece is. I'm here to tell you that it's not *all* fairy tale living there. In some parts of Greece there are people facing food shortage. In other parts they are dealing with water scarcity. Not many people around the world know that there are Greeks who are struggling to survive. I think we should strive to let others know about their water scarcity issue and how we all can help the Greeks in every way we can.

First let's start with the basics. Greece's weather is usually really wet which helps the crops in some ways, but make the temperatures a little less pleasing for Greece's citizens. Southern Greece usually has a warm, Mediterranean climate, while the north is generally wet, and cool. Most of the time winters are mild but wet, and summers are hot and dry (CultureGrams). In 2020, Worldometer said that Greece has about 10,423,054 people. Out of that population, just 20.61% is rural, which is surprising because agriculture uses 86% of Greece's water (Greece Groundwater Report). According to Trading Economics, in 2016 16.6% of Greece's land was arable. Grecian agriculture produces wine, cotton, olives, tobacco and much more. The average size of a Greek farm is relatively small, 11.2 acres or about 10 football fields (Eurostat statistics). The maximum wage is 27,800 Euros per month, while the minimum wage is 850 Euros per month (CultureGrams).

Grecian families are usually small and are composed of just one to two children, and two parents. The majority of people in rural areas live in one- or two-story houses; these houses are sometimes shared between two families. When that occurs the two living areas are often connected by a staircase, either on the inside or outside of the house. In rural mountain areas in northern Greece, there are many modest stone houses that resemble housing in Balkan areas. Central Greece, has small towns and larger villages that feature *polykatoikia*, which are two- or three-storey apartment buildings made of reinforced concrete (CultureGrams).

A usual Grecian meal is a three-four course meal, whereas salads are often eaten with the main course. One of their main courses is called *Souvláki* which is a shish kebab with cubes of meat (pork, chicken, or lamb), sometimes served with mushrooms and vegetables or with onion, tomatoes, and a yogurt sauce. Bean soup is popular in the winter, and for Easter, Greeks enjoy roast lamb and *kokoretsi* (lamb liver, lungs, and spleen wrapped in intestines and roasted on a spit). Also they have a very interesting

chocolate dessert. It is a big hollow chocolate Easter egg with frosting designs, that the whole family shares as an annual tradition. The most common cooking methods used by Greeks are boiling, frying, simmering and stewing (over wood-burning fires), grilling, and baking (in wood-burning ovens). In addition to cooking, they preserve foods by smoking, drying, salting, and preserving in syrups and fat. These preserved foods allow Greeks to enjoy their produce long after the growing season ends (CultureGrams).

Children are required to go to school until they are 15, and the rules are strictly followed. Their education

1

is free and mandatory. As for the water, in Athens and other large towns, tap water is drinkable. Most Greek islands do not have their own water, so their water is brought in from the mainlands, and is not for drinking. Toilets and sewage in Greece are very different from ours, because of the fact that they are in public. People are not allowed to put toilet paper in the toilet. They have to put it in a separate bin beside the toilet. Greek sewage pipes are approximately two inches (50mm) in diameter. American and British plumbing is twice as large (four inches/100mm), so the Greek pipes just get clogged if people put the toilet paper in the toilet (Jennings). This sounds unpleasant for Americans, but it does ensure that less water is used in plumbing as compared to what we use in the United States.

Greece has many minor problems, along with their major problem. One of Greece's minor problems is that some places don't have the food that they need. The Guardian interviewed a man in Athens Greece, and asked him about his food situation. "The truth is, if I didn't come here I wouldn't have the means to feed my children," said the recently widowed father-of-three, his eyes fixed on the floor. "Three years ago, when I was the boss and had two employees, the idea of going anywhere to collect food would have been inconceivable. Back then, I was earning €3,000 (£2,600) a month and the fridge was always full." This is the situation of 14% of Greece, and it means that many families, either go to bed hungry or have to go out on the streets to find food. Thankfully there are many organizations that are involved in helping Greece out of this problem, but they could always use more help.

Along with hunger, the major issue facing the future of Greece's citizens is water scarcity. Greece ranks 26th in the world in water scarcity. Nearly 1.8 billion people, or one-quarter of the Earth's entire population, live in just seventeen countries which are facing serious water shortages – a problem which is expected to only worsen in the near future. The hot, dry summers in Greece make water consumption numbers increase. One of Greece's main crops, cotton, adds to the problem of water scarcity (Greekreporter).

Cotton takes 1,320 gallons of their water to produce a pound of the crop, and annually Greece produces 1,480,000 pounds of cotton (fas.usda.gov). That's 1,848,633,600 gallons of water for a crop that is just used to create a textile! Having no water to support the soil, it will become unusable, and people won't be

able to grow the crops they need. Amazingly, it can take 2,700 liters of water to produce the cotton needed to make a single t-shirt (worldwildlife.org). This affects rural populations, because they can't grow the crops they need to eat because they've used all their water on cotton. Men have to work in the hot sun to make crops with little water, and every day have the chance of losing their job. The elderly and children need water to live their everyday lives. Children need it to mature their bodies, and elderly need it to maintain their bodies. Marginalized populations would have less access to get the water they need, because they are under-represented, and don't have much money. I think we could exchange their cotton production and produce hemp to use for textiles instead. This would allow Greek farmers to continue to produce a crop for textiles and allow Greece's citizens to better use the water in their environment.

There are many benefits to using hemp, aside from it using less water. Hemp is the strongest fiber in the world. It has over 50,000 uses. Two pounds of hemp uses 5,000 gallons less water than two pounds of cotton (this is the equivalent to a T-Shirt and a pair of jeans). Hemp is also more durable than cotton.

2

Unlike cotton, hemp holds its strength when wet, and it also possesses antibacterial properties. Hemp fabric is said not to wear out, but rather softens over time. Also hemp has more purposes, therefore it has a higher profit than cotton (Leafly). Cotton's profit per acre is about \$150, whereas hemp's profit per acre is about \$600. There are many other private organizations that have already made the switch to hemp. The committee of agricultural organizations for the EU wants to start planting more hemp and flax. Also they want to support farmers that are already planting it (Copa Cogeca).

Hemp can be used for textiles, industrial textiles, paper, foods, building materials, and body care products, while cotton can only be used for fabric. Sixteen percent of the *world's* pesticide usage goes to cotton production (wrigglytoes.com). Pesticides are very bad for everything around it except for the plant. It is unhealthy for workers when they are breathing it in every day. Also pesticides are very bad for the soil, and after a while it can make the soil unusable. Hemp does not need any pesticides, that is another reason hemp is better than cotton.

Hemp is a very historic part of our nation that has been lost throughout the centuries. Many of our founding fathers, including Benjamin Franklin, Thomas Jefferson, James Madison and even our first president George Washington, grew hemp. Thomas Jefferson even wrote the Declaration of Independence on hemp paper! Back then it was used for a lot of things. For example most citizens used hemp to make most parts of their ships. Their sails and the ropes were both made out of hemp so that they could last longer and be stronger. Do you like to paint? Well hemp was woven into canvases to paint on for people a long time ago. The word canvass actually originated from the word cannabis which is a type of flowering plant that hemp is related to (History of Hemp).

If hemp was so useful centuries ago, then why aren't we using it as often today? Throughout time people started to realize how closely related hemp and marijuana were. On August 2, 1937, President Franklin D Roosevelt signed the Marijuana Tax act, which I think could've been called the Cannabis Tax Act, because it banned the use of Marijuana and Hemp (wikipedia). As the years have gone by some scientists have started studying hemp, and found that it has less than .3% THC in it, and marijuana has more than .3% THC. THC stands for tetrahydrocannabinol which is the chemical responsible for most of marijuana's psychological effects. Hemp is on it's way to becoming legal again in some places in the United States, and according to European Union (EU) legislation, hemp grown for fiber is legal if the THC (tetrahydrocannabinol) content does not exceed 0.2% (Cardena).

My solution would meet the needs of all the populations in Greece. It would decrease the water consumption level, and agriculturalists would still have a fabric crop to sell. When the water consumption level goes down Greece will be able to use more water for necessities like drinking water, and water for food crops. Thankfully, hemp and cotton are textile crops, so the Grecian people would not be losing a material source by making the transition. People who live in cities would not be affected by this crop change. Using hemp would not challenge any cultural norms or behaviors of the Grecian people. It would fit perfectly into their agricultural system without major adaptations. To make this exchange happen, the Grecian farmers and all stakeholders would have to collaborate with the Government to find a compromise that works for everyone, regarding where and when they would plant and sell hemp.

3

To be able to exchange Greece's cotton production with hemp production, permission and incentives to plant hemp from the Greek government would be necessary. Perhaps Greece could look at the United States's model to encourage their farmers to plant hemp. Some of the incentives that the United States uses are tax breaks for growing a certain crop, free training on how to grow hemp the best, and a guaranteed price to sell hemp for. If the government was able to apply any of these in Greece it would potentially not harm their economic situation. Another example is how the USDA provides a safety net for American farmers and their crops. On their website www.usda.gov/topics/farming, they said "We maintain a strong and appropriate safety net for America's farmers, ranchers and growers which includes assistance to struggling industries, disaster assistance, and crop insurance, and provide technical assistance, access to credit, and help producers implement conservation practices." Greek government could apply this method too if they would like. Also, there would need to be a hemp market near Greece, so that they can sell their product and get the money they need for their people. Greece is a parliamentary republic. The president, who is elected by Parliament, and the prime minister, who is the head of government, should collaborate to ease regulations and create markets to help Greek farmers transition to hemp production instead of cotton production. Doing so would help all Greek's residents, both urban and

rural, in their quest for water. Switching to hemp would be a relatively easy change, and would make a tremendous difference in Greece's future. Now that you see that some parts of Greece aren't as healthy and rich as you may have thought, take a chance, and help make a difference.

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4

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