

# Seaweed - A food of the future

By Lucy

## **Foreground**

This report explores why seaweed may be one of the foods we may be eating in 20 years time. Seaweed may not just be the food of the future because it is healthy but also because it does not need as many resources as other foods.

## **Introduction**

At present the world has a problem: global human population is growing quickly and resources are limited. We need to look for alternative food sources to feed the increasing population. Traditional forms of food, such as beef, take a lot of resources including land usage, fresh water and feed. My exhibition is about new sources of food for the future. In particular, I am interested in seaweed because it could help in addressing some of the challenges the world will face in the near future.

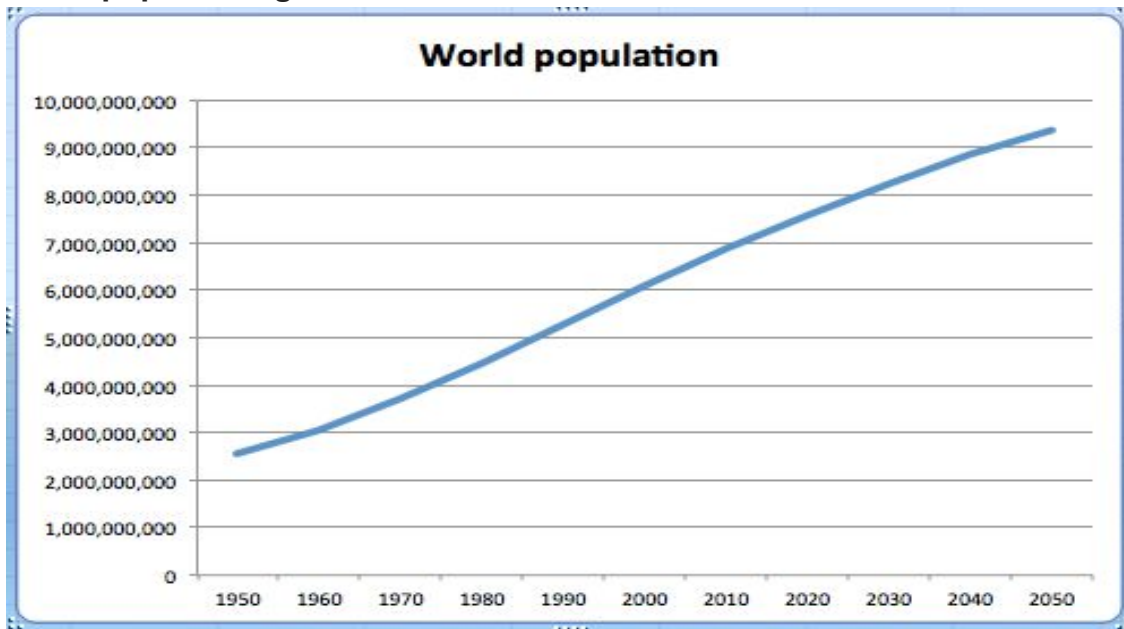
Last year I did a project about how seaweed is connected to exploration and realized that it may be one of the many unusual and different foods we will be eating more of in the future. The UN has Sustainable Development Goals. Goal number 2 states that the year 2030 they will “End hunger, achieve food security and improved nutrition and promote sustainable development”. Seaweed could help support this goal.

## **Future global concerns: rapid population growth and resource scarcity**

We have limited resources and a growing population is making it harder than thought. . According to the Population Reference Bureau, population grows at a rate of about 75 million people per year. The international database of the U.S. Census Bureau states that in the year 1950 there were about 2 billion people and by the year 2050 there will be about 9 billion people. This means that within a hundred years, the world population will have more than quadrupled.

How will we feed so many people in about 1661 hectares of land? There is a big gap, that will continue to grow, in between the global world population and the arable land in use. We won't have enough land to grow food, in the traditional form, as the population grows.

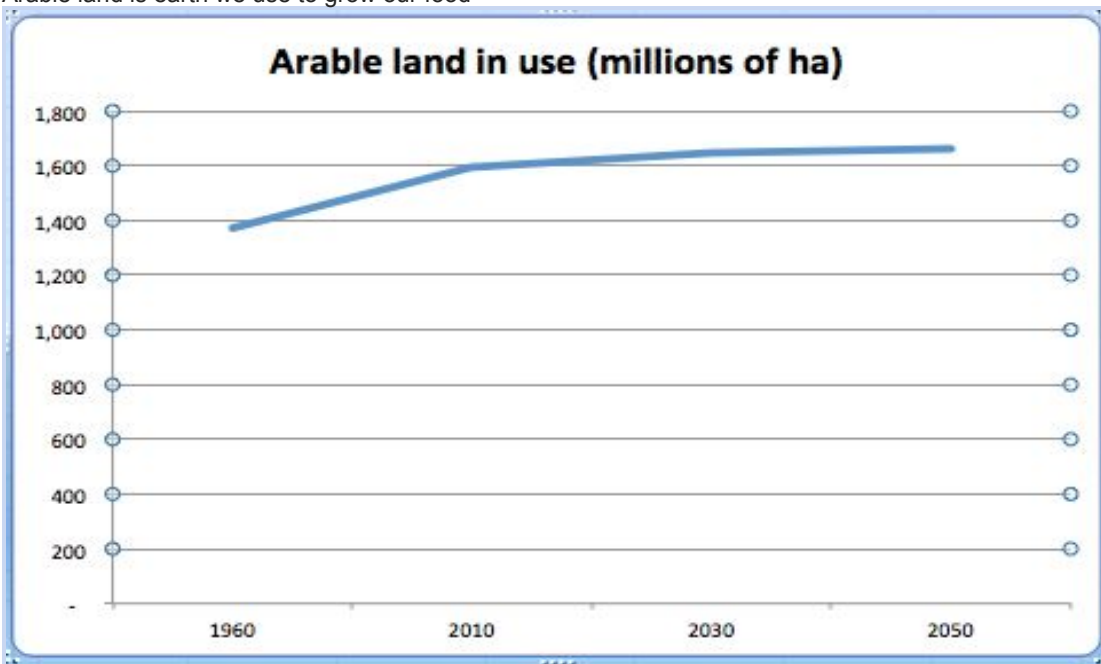
**Graph 1**  
**World population growth 1950 to 2050**



source: US Census Bureau

**Graph 2**  
**Arable land in use 1960 to 2050**

Arable land is earth we use to grow our food



Source: Author taking data from FAO

## **Foods of the future**

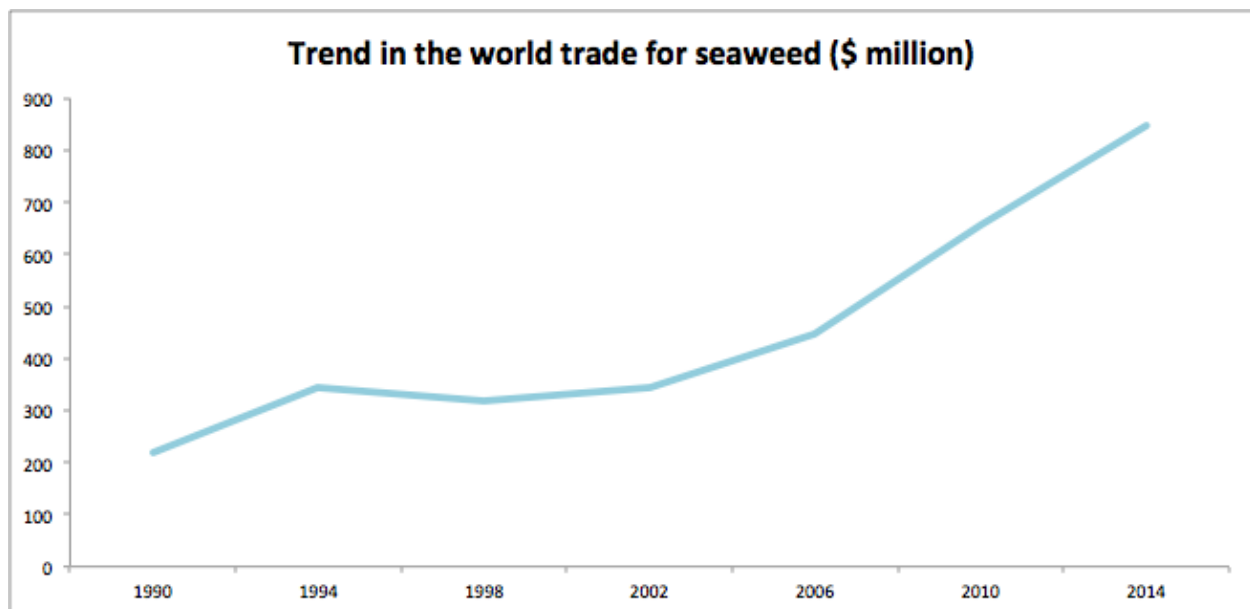
Most important about the foods of the future is that they have to use less resources. The following food sources might become more common in the 20 years time: Insects, Lab grown meat and Seaweed.

## **Seaweed Trade**

According to Graph 3 global trade in seaweed has grown from \$219 million in 1990 to \$846 million in 2014. This may mean that more people are demanding seaweed products. However the data is not conclusive because we don't know if the traded seaweed is for food or other uses. More research is needed.

### **Graph 3**

#### **Trend in the world trade for seaweed from 1990 to 2014**

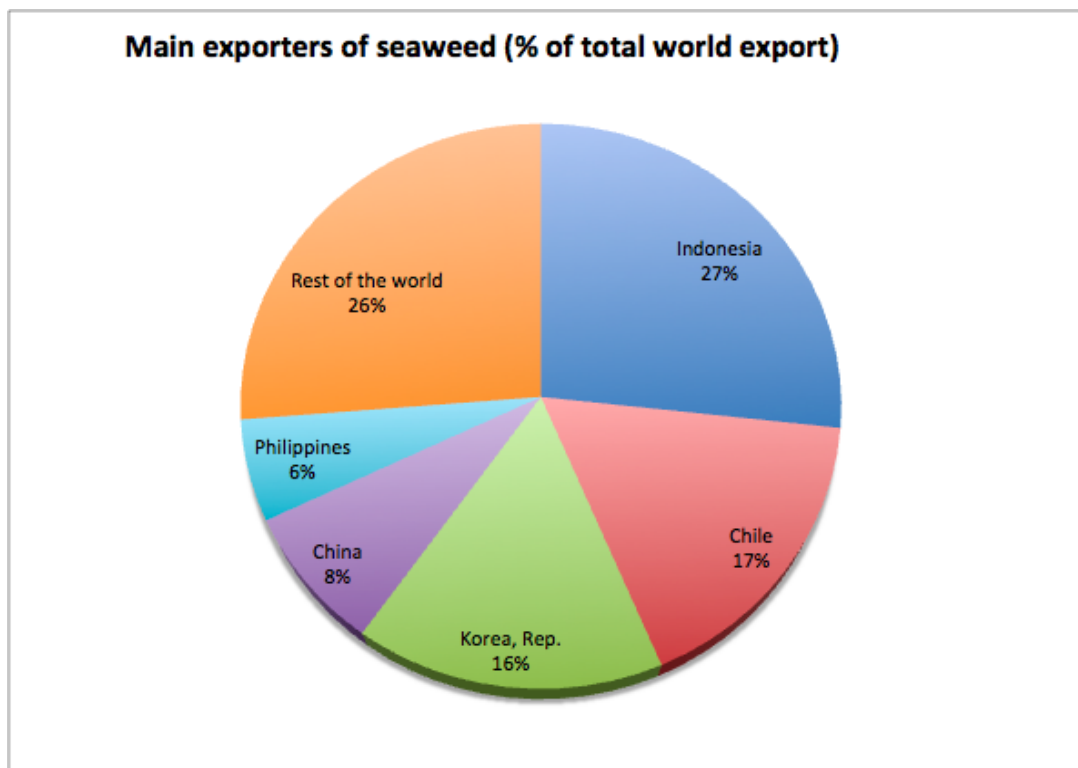


**Source: author taking data from UNComtrade**

## **Leading exporters**

According to Graph 4 only 5 countries export 75% of global seaweed exports. Indonesia is the leading exporting country followed by Chile, Korea, China and Philippines. Obviously most of the countries are from Asia because they have already added seaweed to their diet. Surprisingly Chile is the only leading country from a different continent that exports seaweed. The Chilean seaweed (cochayuyo) each year Chile exports \$ 800,000 U.S. dollars to Taiwan it's main destination, where it is sent dried and is then re-hydrated at the time of preparation.

**Graph 3**  
**Main exporters of seaweed**

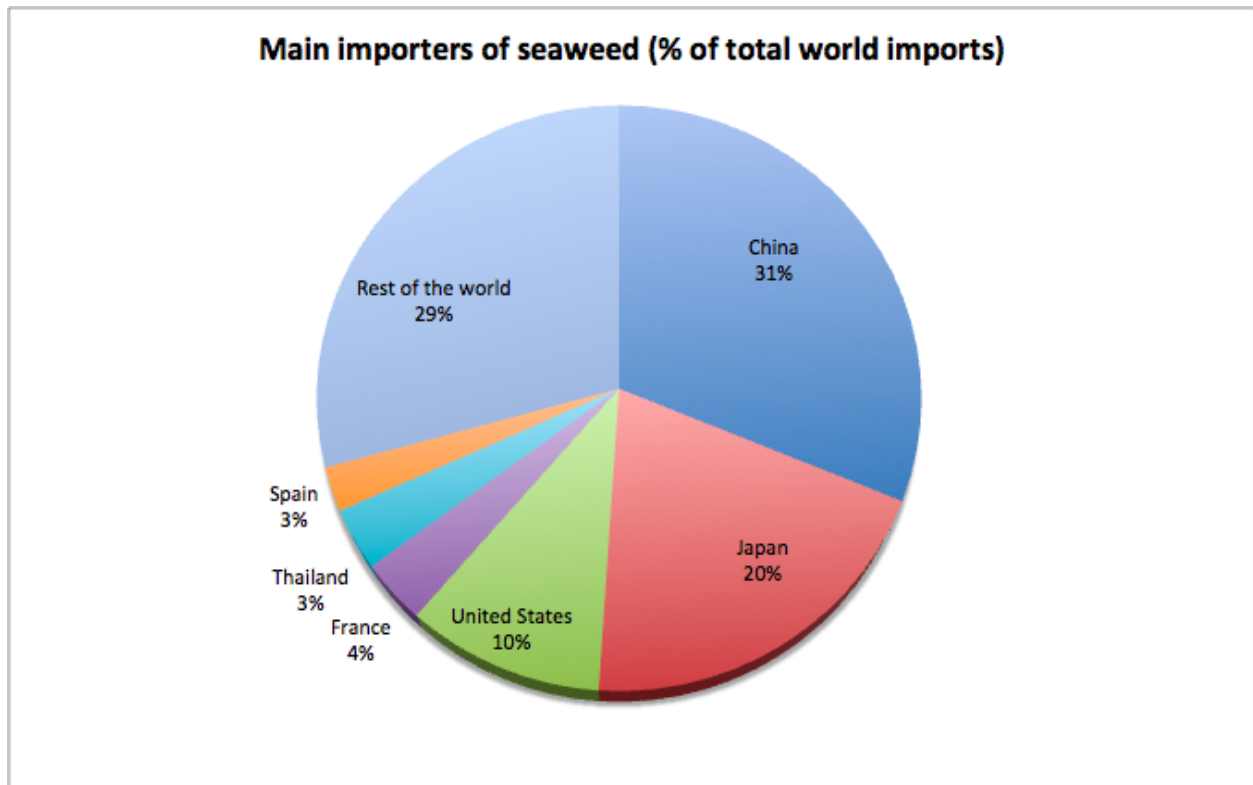


**Source: author taking data from UNComtrade**

### **Leading importers**

Graph 6 shows that seaweed is demanded by countries that can not produce enough seaweed. Only 6 countries import about 70% of global seaweed. China is the leading seaweed importing country followed by Japan, United states, Thailand and Spain. This time there are more countries that are not from Asia.

**Graph 4**  
**Main importers of seaweed**



**Source: author taking data from UNComtrade**

**Seaweed production (what makes seaweed a food of the future)**

Seaweed may be the food of the future because it grows rapidly (faster than plants on land), there is a huge untapped potential availability of seaweed in the ocean floors and it is able to grow in polluted water without getting poisoned (instead of getting poisoned it actually cleans the oceans). All above can be illustrated with the examples of seaweed farms that are booming around the world.

## **The benefits of seaweed**

This is Popeye the sailor man it used to say spinach but I photoshopped it and changed it to seaweed



Different types of seaweed are really high in iodine, protein, calcium, iron and different types of vitamins. Spirulina is an algae that can nourish your body by providing most of the protein you need to live on. Scientists say that spirulina has more protein than red meat and that spirulina protects you from cancer. Chlorella usually confused as spirulina is an algae that detoxifies the mercury out of your body. Seaweed also contains lots of antioxidants, 10 times more calcium than milk and 8 times more protein than beef and plays a role in boosting weight loss.

## **Agar the gelatin for vegetarians**

Agar is a gelatin for vegetarians/vegans.

“But what does Agar contain instead of meat???” It contains seaweed!

Agar is a Chinese or Japanese gelatin used for soups, ice cream and sweets. It is also used in medicine -it has effects against diabetes and heart disease. Agar is extracted from the cell walls of some species of algae. Agar is tasteless and indigestible it is even a concentration of 1%, dissolved in hot water. Agar has no calories, no carbs, no sugar, not fat and is loaded with fiber. It is free from starch, soy, corn, gluten, yeast, wheat, milk, egg and preservatives.

So agar could be the gelatin of the future too!

## **Conclusion**

Seaweed is likely to be one of the alternative foods we may be eating more of in the future. As identified in this report we have to find new food sources that do not need as many resources to produce. Seaweed is one option for a growing population to eat as it requires fewer resources to grow. Seaweed trade has become more popular over the years and it is my belief this will continue as countries look to produce more sustainable ways of feeding their population.

Seaweed has many benefits and can be eaten by vegetarians. Seaweed also has other benefits not included in this report. These include seaweed may also be the biofuel of the future. To get that land you have to cut down trees which causes climate change (global warming). On the other hand seaweed does not need as much land and we have the whole sea to grow it in. To make other biofuels you need lots of land.

Evidence shows seaweed is becoming more and more popular over the years. It is my opinion that seaweed is going to be a Super Food of the Future and we will be eating more of it in the future.