

Overfishing & Context

Our relationship with the ocean has changed over history. In the past century, we have changed that relationship to a more exploitative, one-sided one. We are coming close to exhausting our oceans' underwater life to feed an ever-growing population. Overfishing will not only have dreadful effects on society, but also on the environment. If we continue like this it is estimated that we will have a **FISHLESS OCEANS BY 2048**. Around **15 million people** rely on the ocean for survival, and most of those people are concentrated in rural areas.



This project focuses on creating an oceanic agricultural system that works synergistically with the ocean, that uplifts societies and economies in the context of fishing towns of Galicia, while creating food to feed themselves and others. There is one way we can do this, and it is by turning to a resource that we have always had but only now we have started to appreciate: **micro and macro algae**.



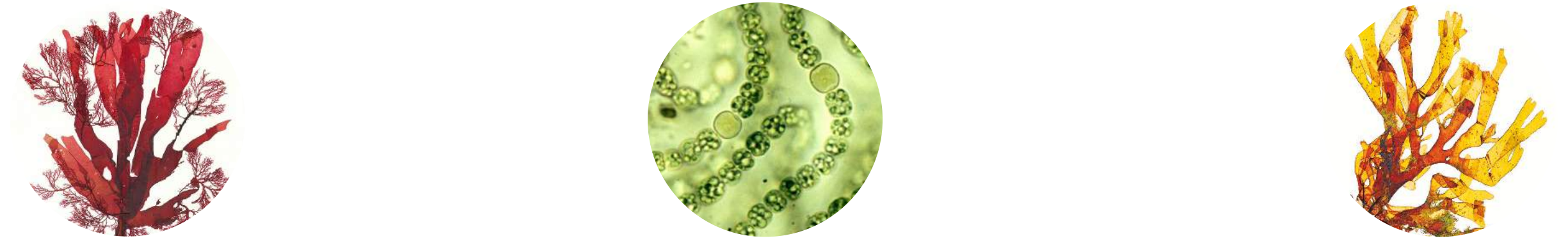
System elements.

Seaweed was used in the North of Europe and Galicia throughout history, specially in times of war, conflict, hunger or natural disaster; seaweed helped coastal communities survive.

Today in Galicia, most seaweed is not farmed, but rather collected from natural ecosystems. Seaweed harvesters or "argaceiros" usually go to the shores in groups and collect the seaweed. Argaceiros are usually young people who are having trouble finding stable jobs in these coastal economies.

Seaweed has many properties that make it into a much more efficient food source. Farming it also has positive environmental effects in the areas it is farmed at. There are many case studies around the world showcasing how implementing seaweed farming can help coastal communities develop more sustainable economies.

Some industries that are seeing the potential of seaweed for innovation are the food industry, the health industry, new bio-materials and bio-plastics, textiles, beauty, architecture, and energy.



Red Seaweed

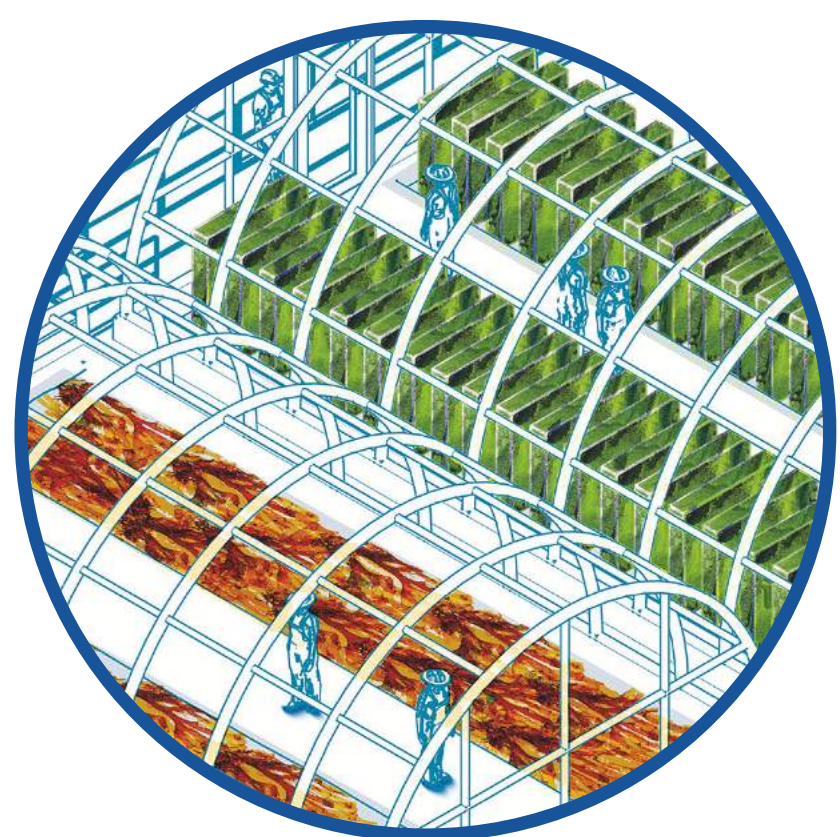
Blue-Green Micro Algae

Brown Seaweed

Phases of implementation.

- Phase I:** Transition from fishing to seaweed farming, done through underwater farms and greenhouses to farm the seaweed.
- Phase II:** Implementing seaweed back into the local culture, first through food and overtime through bio materials, objects and the physical culture.
- Phase III:** Seaweed being implemented in all aspects of industry and personal life, and about fueling the system through seaweed energy.

Seaweed agriculture and its implementation in the city of A Guarda, Spain.

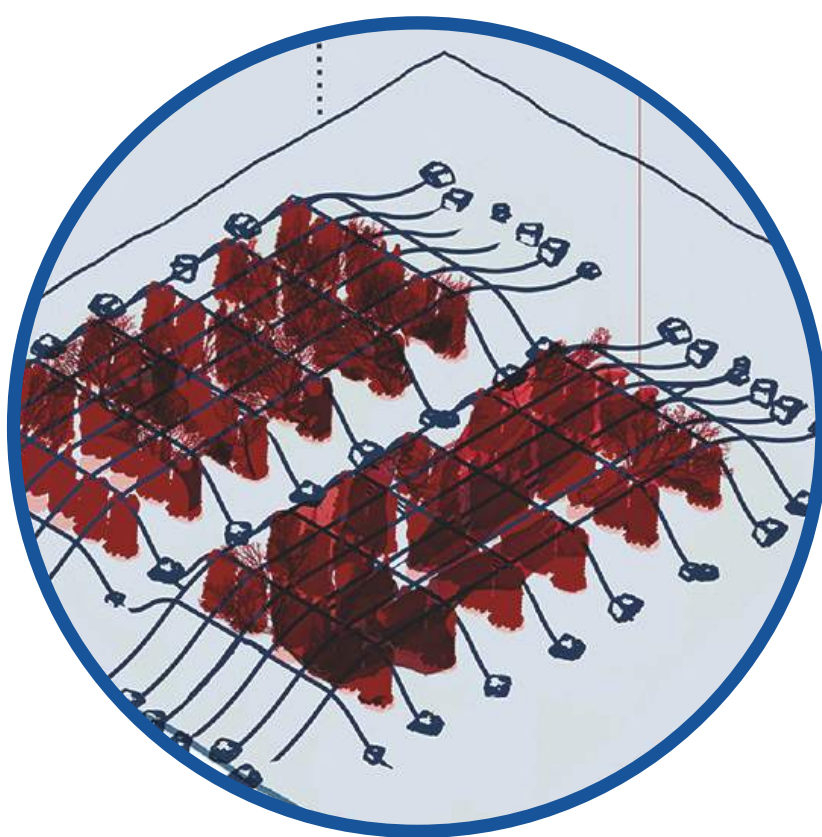


I. Seaweed Greenhouses

The first step is to start cultivating seaweed instead of just harvesting. Micro-algae can grow in tanks, and seaweed in net-like structures.

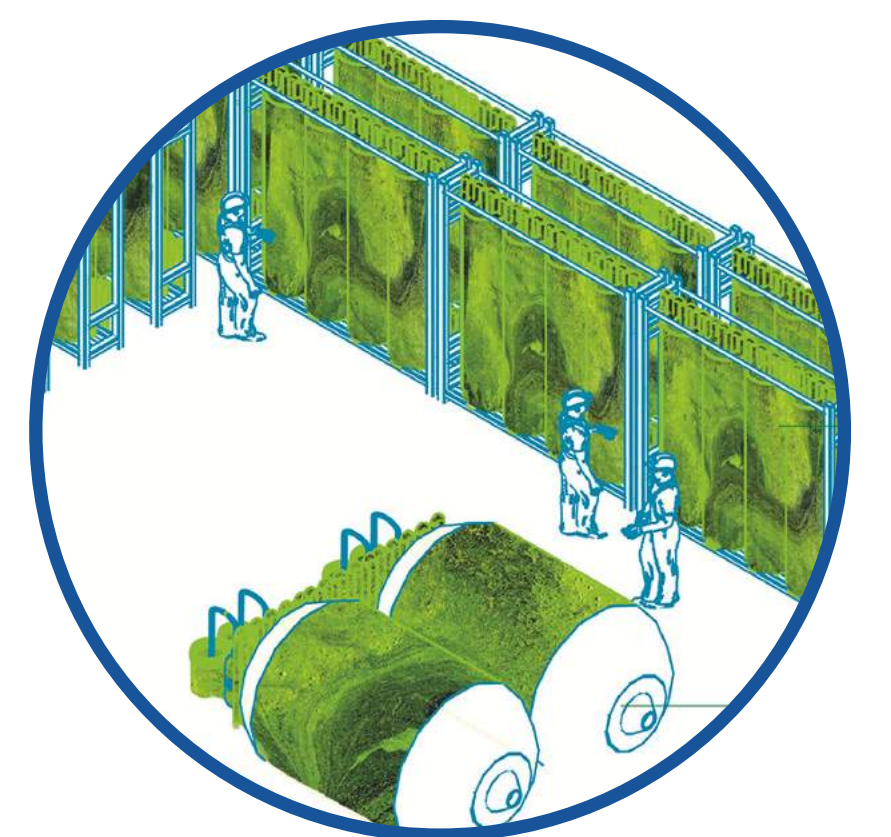
I. Argaceiros

Traditional galician seaweed harvesters who will farm and collect the seaweed and transport it to processing facilities.



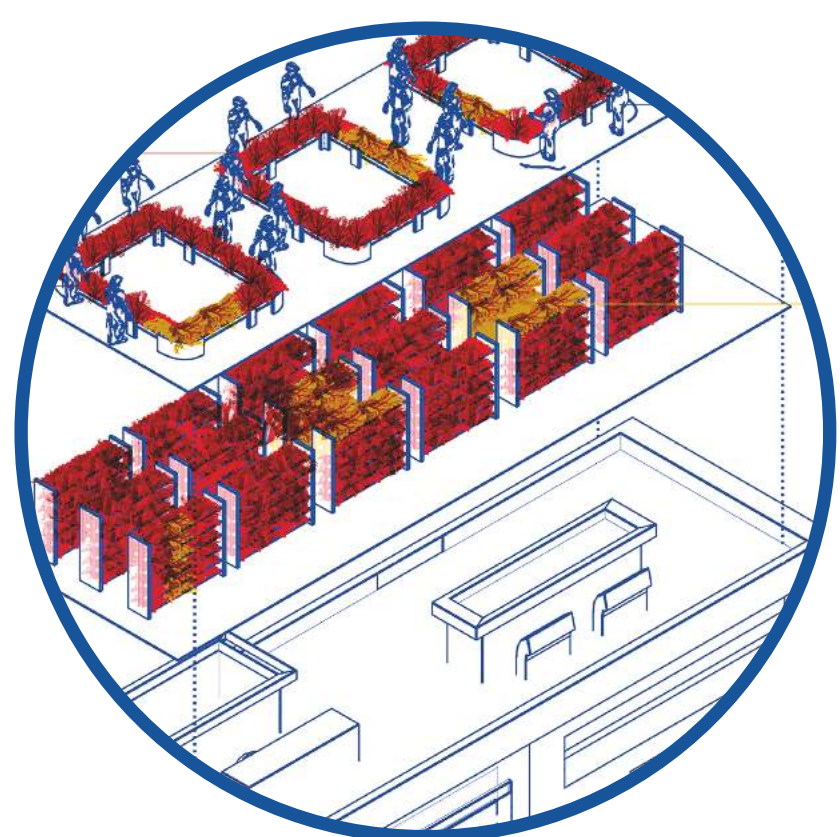
III. Energy & Disposal

A closed loop system through bio-energy. Tanks of micro algae will capture carbon and create bio-fuels. Solar panels with micro algae will be more efficient for capturing energy. Lastly, seaweed composting will be implemented in the system.



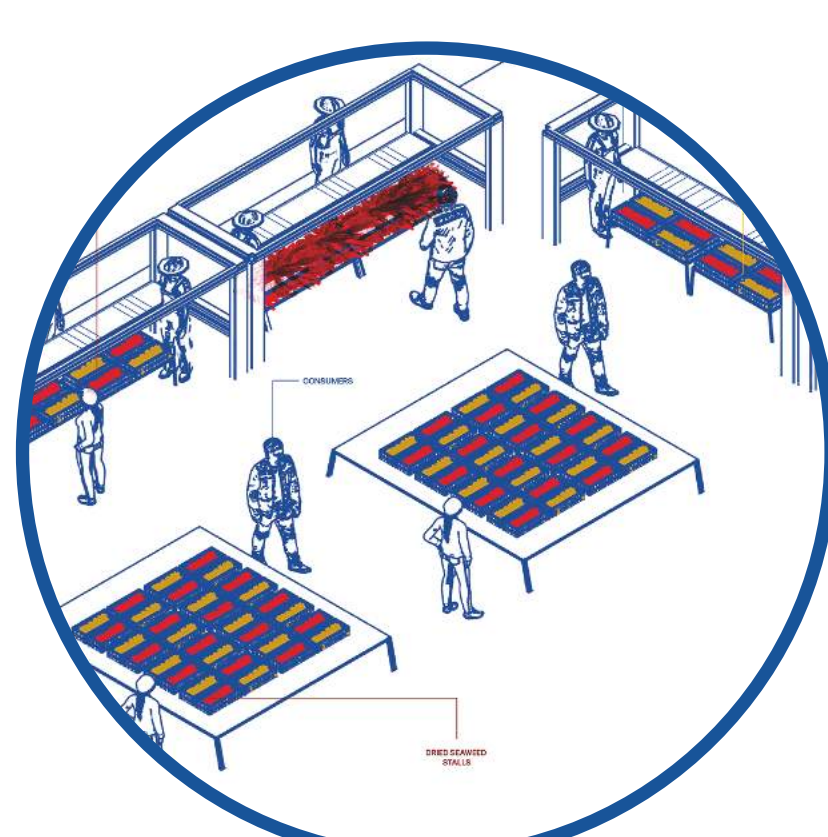
III. Seaweed at the city

Blue-green algae tubes will be implemented around the city, to filter air and create energy for residents. Thanks to air filtering, pollution in the city will be reduced through the architecture.



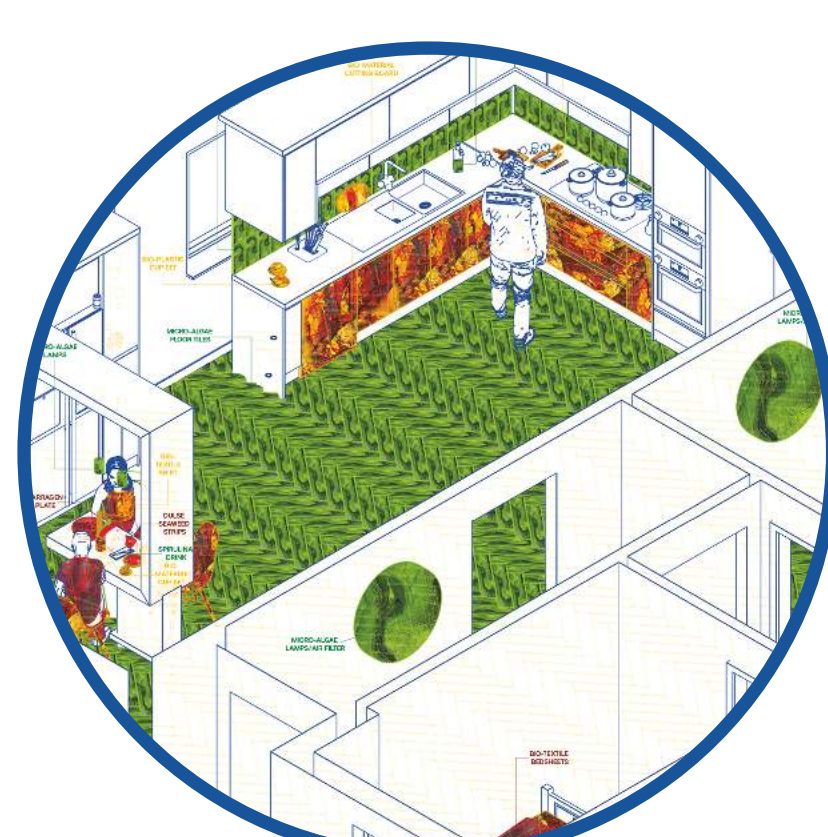
I. Underwater Farms

We are able to grow local seaweed species under the sea, filtering water and absorbing CO2, and helping marine ecosystems.



II. Lonxa (Market)

The lonxa is the traditional galician fish market. The first way that seaweed will infiltrate the culture is through food and the places centered around it.



II. Restaurants

Gastronomy is a part and a reflection of culture. Where we will see a real impact is through the changing of eating habits, and thus, restaurants.

III. Seaweed at home

The personal reflects the communal, the culture, and the changes in society. The food at the house will change, and the house materials will be made with seaweed materials.



II. Processing Facility

Raw seaweed needs treatment to become different things like agar agar, or powdered for food purposes. Processing facilities will create jobs for the town.



II. Bio-material Factories

Through the creation of bio materials from agar agar, we can find new revenue sources from seaweed such as clothing, furniture, materials, lighting, etc.

