Team name: OCTET-J

OCTOFLOAT

~The possibilities of microalgae~

OCTET-J

1. Social backgrounds & business incentives

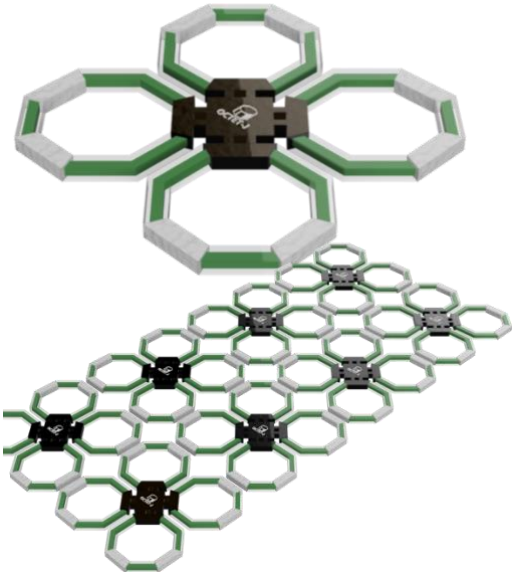
The ever increasing IUU fishing activity is imposing a significant impact on the marine life habitat and its' biodiversity. Statistics show that the available aquatic resources halved within the past 30 years. Hence, the supply of marine products in the near future are at risk, while the demand demonstrates an increasing trend. Therefore, we consider reducing IUU fishing activity to secure the future marine product supply and to conserve the marine biodiversity as our incentive of business. However, a direct intervention to combat IUU fishing is unrealistic due to its' political nature as an issue. Given the condition, we intend to introduce a more sustainable, efficient method of producing marine products utilizing microalgae and wastewater, which indirectly reduces IUU fishing by competing with lower prices, ultimately decreasing the demand of IUU products to exile IUU fishers from the market.

Microalgae is a growing field of study in many universities, and is expected to contribute to a clean environment, and a sustainable society by utilizing its' practicality.

2. Description of the product

The structure shown in the diagram is one unit of the "OCTOFLOAT", that regulates the aquaculture process of producing our marine products.

The floating structure consists of 4 octagonal loops, connected to a core both composed of PLA, a light, inexpensive, and biodegradable plastic. The octagonal loops accommodates and cultivates the microalgae. The core containing the SBC unit is equipped with the latest AI Watson, which regulates the industrial wastewater distribution to the octagonal loops from nearby industrial facilities, and the detection of excess microalgae and its' discharge, as they naturally expand their population over time. To supply CO_2 and to prevent the microalgae from suffocating by oxygen, a portion of the octagonal loop is composed of new polyethylene which intakes CO_2, releases oxygen while insulating water.



The microalgae, specifically a species named Chlorella Vulgaris[3] accommodated in the octagonal loops continuously releases oxygen and purifies the wastewater supplied as it grows. The purified water is released to the surroundings, improving the environment to enable other species to inhabit the area and eventually develop a sustainable ecosystem. The released excess microalgae provides a rich source of basic nutrients for the new species, to further foster the process.

The new species are our low cost products to compete against IUU products and ultimately reduce its' demand, as the OCTOFLOAT is self-sustainable. The reason being that sunlight, CO_2 and water are the conditions for the cultivation of microalgae, and because the process is regulated by an AI, meaning human labor costs and maintenance costs can be minimized.

The expected yield is such that the ecosystem is maintained, therefore the OCTOFLOAT reduces IUU by competing with low costs, as well as achieving the goal of conserving biodiversity.

3. Marketing strategies

a) Analysis, target

China is said to be the main contributors of IUU fishing, and in fact, Japan is the biggest importer of IUU products from China. 22% of Chinese exports of marine products were sent to Japan in 2012, indicating the significance of Japan as a major importer of Chinese IUU products. In addition, squid accounts for the highest proportion of Chinese IUU products. It is estimated that Japan imported about 30,000 tons of squid resulting from IUU fishing in China. With this, we intend to concentrate our sales and production under the system of OCTOFLOAT on squid, considering Japanese marine product suppliers as our target customer. The additional reason being that squid can be shipped within only 3 months with low costs for breeding. This will contribute to combating IUU fishing profits of the main contributors, the Chinese. We specifically aim to reduce about 40 percent of Japanese imports of Chinese IUU products so that our business can grow exponentially in the short-run.

b) Marketing strategies

i. Manufacturing method

We intend to base the activities of the OCTOFLOAT in the Philippines given the below facts.

- Fish account for half of the animal protein source for Filipinos
- Fishermen's average annual wages in the Philippines are half of that in the United States (1300USD)
- The main objective of fishing in the Philippines is for household consumption, it is not yet developed as a business. Therefore new businesses can easily enter the market
- Labour and facilities for processing is available
- Japan is the number one trade partner for the Philippines, and as 55% of Japan's imports on squid from China are a product of IUU fishing, exporting marine products from the Philippines to Japan will directly confront the IUU product supply.
- The government of the Philippines is committed to achieving sustainability of fisheries
- The Philippines' probable productivity may well be 125,000t

ii. Marketability

The strengths of our marine products are low prices due to the minimized costs of production, and being a sustainable method of production. This is possible because of the mechanisms of the OCTOFLOAT. It is regulated digitally and the cultivation of microalgae is self-sustainable given the fact that the conditions including sunlight, CO2 and water are supplied either from the surroundings or the OCTOFLOAT itself. Therefore, the costs are minimized to the costs of human labour during the process of catching. Specifically, we can offer our marine products (squid) with half the price of current IUU prices (2500 USD per ton), ensuring the effectiveness of our business in competing against IUU products.

Furthermore, the squid market is one of the largest markets of marine products in Japan, therefore we can expect high profits by exporting our products to Japan. This ensures a potential expansion of our business to a global scale and to other marine products, to further contribute to ending IUU fishing and to achieve sustainable fisheries as well as marine biodiversity.

iii. Sales promotion method

In order to put our products in an advantage against IUU products, we intend to make our products and our methods of production better known through our website and SNS, by providing statistics as well as updates based on yields, and the specifics of our method of production and how it contributes to reducing IUU fishing. We will especially promote low costs which will be appealing to the target marine product suppliers of Japan, and potentially around the world.

4. Financial plan

-We expect some natural disasters during the course of a year, however can be assumed to be negligible to the effects on our profits.

-We expect to be able to pay back all of our loan in the second year due to our expanding profits.

-We expect the demand for our service to increase throughout the nation, leading to more installment of our product.

-We assumed our salaries for our employees and rent to be the same regardless of where the system is installed.

(USD)	Year 1	Year 2	Year 3
1.Revenues	1,250,000	3,750,000	12,500,000
(Units sold) /ton	1,000	3,000	10,000
(Unit average price)/ton	1,250	1,250	1,250
2.Production Cost	1,140,000	3,300,000	11,000,000
(Unit Cost)	1,100	1,100	1,100
3.Expenses	11,800	33,800	66,800
Staff Salaries	10,000	30,000	60,000
Sales & Marketing	1,000	3,000	6,000
Rent	750	750	750
Other expenses	50	50	50
4.Profit/Loss before tax before tax	98,200	416,200	1,433,200
5.Income Tax (About 30%)	29,460	124,860	429,960
6 Net Profit/Loss	68,740	291,340	1,003,240
7 Start up cost	40,000	0	0
8 Capital Investment	60,000	200,000	400,000
9 Free Cash Flow	-31,260	91,340	603,240
10 Loan Required	40,000	0	0
11 Cash Balance	8,740	60,080	663,320

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