

Open Sea Mariculture Systems - Project Overview

Project Description

Mariculture Systems specializes in the development and implementation of advanced systems for sea farming located in the open sea.

The Mariculture platform is an innovative and unique system that provides an efficient and comprehensive solution for sea farming in unprecedented magnitude, enabling complete control over the entire growth process, while taking into account environmental and ecological aspects.

The Mariculture platform will be built to serve as the world's leading cost-efficient sea farming method, both in the setup and the on-going operational phases.

Fish out of inland water

- The Mariculture concept is based on connecting a firm and modular submerged cage structure to a semi-submersible platform and making the necessary adaptations, including the development and installation of innovative technologies and control systems in order to serve as an infrastructure for offshore fish and sea farming
- The platform's technological basis is extant, proven and extensively used in a few operations, like offshore oil and gas drilling.
- The platform can withstand extreme ocean conditions, and its features ensure its performance, sustainability and survivability. Thus, it will enable to operate in the open sea while achieving many benefits.
- The platform will be manned and operated 24/7 and will be operated by the company, enabling full control and supervision over the entire growth process.
- **IP Rights** - The company registered a patent for its innovative technological developments and the Mariculture platform configuration, detailing the systems' integration, as well as the agriculture automation and machinery, and is currently registering its second patent.
- Significant investments were done during the last 7 years of technology development.
- The company, together with a local partner, is developing a similar project in Malta, which is in the same stages of development as the project in Israel and has received financing from the European Union.
- The company is led by marine experts who carried senior positions in various organizations, with significant and practical management experience.
- The project is in-line with the latest values and principles of Impact Investments - Multiple Bottom Lines: social responsibility, positive economic effects - direct and indirect (deriving from the need for products and supporting services, both creating jobs), global food security, ecological and environmental concern.



Project Finance – Israel

The estimated overall required budget is approximately \$40 million for initiating the Mariculture project (and producing the first platform) in Israel's economic marine zone.

This budget should enable the operation to reach positive cash flow according to the project summary below. Expansion to a larger configuration ("farms") will be based on return capital and other external funds, grants and debts.

The Company carried out a comprehensive regulatory process in Israel, which resulted in the allocation of areas for marine agriculture by the regulator, and the allocation of areas for the Company's platform (1,482 Acers located north-west to Ashdod port, 7 nm from shore).

Since the platform and technology already exist, it will be possible to duplicate the project to other areas in Israel as well as in other countries with suitable conditions.

Financial Information

The company's conservative business plan reflects an expected annual turnover of up to US\$ 50- 70M, gross margin of 50% - 68%, EBITDA of US\$ 16M - 40M and operational margin of 35% - 58%, all summed up to return of the investment in 2.5 years from operation commencement.

The project will generate fast returns and significant incomes, reflecting high profits and profitability.

Financial Model Assumptions

The conservative business plan details the operation of a single platform in the Mediterranean Sea, based on few careful assumptions:

- Initially growing Sea Bream and Sea Bass only and not more profitable fish species (with better growth rate and price per kg).
- Assuming only one profit center - fish (ignoring shellfish and seafood grown in trays, bottom dwellers growing naturally beneath the system, and other aqua farming products at a fairly low extra cost, which shall become a future source of revenues).
- Branding & Distribution - the company will sell only unbranded products through local wholesalers.
- According to its business plan, the company will sell its products to local wholesalers and distributors as an unbranded product. Offtake agreements with such wholesalers and distributors can be negotiated and signed, if required. On a later stage, the company will be able to brand its products, with an option to sell part of it directly to the supermarkets and other customers with even higher margins.
- The model assumes growing and distributing approximately 50% from the expected capacity 5,000 tons during the 1st year of operation (distribution of 100 tons a week) and gradually increasing the capacity to 8,000 tons over a 4 years period.
- The density ratio in the fish cages is low and conservative (10% of the current norm in fish ponds).
- The actual plan is to operate few farms, each built as a configuration of few platforms (4-8). Operating farms will allow significant reduction of the operational costs (manpower, logistics, maintenance and purchasing power).

- The figures are based on other fish farms located in the Mediterranean sea, thus the model doesn't take into account future optimization that will occur due to implementation of improvements and technological innovations which will effect major parameters such as FCR, mortality rate, fish growing rate and general costs reduction.
- A full growing cycle is approximately eight months (apart from the first partial cycle in each platform, which will commence in approximately 4 - 5 months from launching).
- COGS purchase at market prices from leading suppliers, based on a single platform, without sourcing and collaborations (no economics of scale).

MCS IL - Project Summary

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7-TV
Number of Working Platforms (Average)	Platforms	.83 Platforms	1.00 Platforms	1.00 Platforms	1.00 Platforms	1.00 Platforms	1.00 Platforms	1.00 Platforms
Max. Ton / Platform	Tons	5,000 Tons	6,750 Tons	8,000 Tons	8,000 Tons	8,000 Tons	8,000 Tons	8,000 Tons
Total Tons	Tons	3,333 Tons	5,400 Tons	6,400 Tons	6,400 Tons	6,400 Tons	6,400 Tons	6,400 Tons
Avg. Selling Price per Kg* (Sea-Bass & Sea Brim)	\$7.0	\$7.0	\$7.0	\$7.0	\$7.0	\$7.0	\$7.0	\$7.0
Total Fish Sold (No. / M.)	.0 M. Fish	2.4 M. Fish	9.8 M. Fish	15.7 M. Fish	15.7 M. Fish	15.7 M. Fish	15.7 M. Fish	25.0 M. Fish
Fry Price (30g)		\$0.6	\$0.6	\$0.6	\$0.6	\$0.6	\$0.6	\$0.6
Mortality Rate		1%	1%	1%	1%	1%	1%	1%
Total Fry (No. / M.)	.0 M. Fry	8.2 M. Fry	13.3 M. Fry	15.8 M. Fry	15.8 M. Fry	15.8 M. Fry	15.8 M. Fry	15.8 M. Fry
Total Fry Costs (\$M.)		\$4.9	\$8.0	\$9.5	\$9.5	\$9.5	\$9.5	\$9.5
Food Price for KG		\$1.21	\$1.23	\$1.25	\$1.26	\$1.28	\$1.30	\$1.32
Food / Fish Kg Ratio (FCR)		1.7	1.7	1.7	1.7	1.7	1.7	1.7
Total Food Costs (\$M.)	\$0.0	\$3.1	\$8.4	\$12.4	\$12.6	\$12.8	\$13.0	\$13.2

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