

## EXECUTIVE SUMMARY

Aquaculture is the world's fastest-growing food production sector, with a market share of \$263 billion. Aquaculture and capture fisheries industries have grown significantly in the last few decades, and total production, transactions, and consumption reached their highest point in 2018. However, since early 1990s, overall production growth has been dominated by aquaculture while production from captured fish has been relatively stable, with some worrying issues emerging concerning overexploitation of the ocean and the impact of fishing on climate change. From 1990 to 2018, global fish consumption increased by 122% where 14% of production comes from capture fish and 527% from aquaculture.

There are 521 types of fish within the aquaculture sector that qualify for cultivation. One of the most popular types of fish is shrimp. Shrimp is the most consumed type of fish globally, with a total production of 5 millions tons in 2018 worth of \$36 billion. Indonesia is currently ranked 3rd as the global largest shrimp producer, only after Vietnam and India. According to the FAO (Food Agricultural Organization), in 2018, there were 2 million tons of unfulfilled global shrimp demand. With the massive opportunity in the shrimp commodity market, the Indonesian government aims to increase national shrimp production by 250% in 2024.

With a high domestic and international demand and a positive overall market outlook, Indonesia should leverage its strategic location as a maritime country. However, there are several problems faced in this industry. The first is natural disasters such as the spread of disease, floods, and tsunamis, which affect the decline in farmers' production and causes the shrimp processing factory, as one of the stakeholders in this industry, to experience shortages and supply uncertainty of raw material.

The second is strict traceability standards. In 2018 the congress in America expanded the scope of the Seafood import monitoring program to include shrimp as a commodity that requires rigorous reporting and recording of import activities. America is currently Indonesia's main consumer, and it has pressured shrimp producers in Indonesia to be able to provide traceability in the supply chain process. Globally, the trend toward environmental sustainability and social responsibility toward food production has raised questions about food safety and sustainability in the shrimp industry. Several stakeholders such as retailers, regulators, and

consumers have become more sensitive to the adverse environmental and social effects caused by unregulated shrimp production, including the use of hazardous chemicals and their impact on environmental degradation.

The third problem is global competition. The promising opportunities in this industry make several shrimp-producing countries develop technology to produce quality, stable and efficient production. One example is India, which is currently the number one shrimp producer. By offering lower prices and better quality, they have succeeded in tightening shrimp export competition in the market. This makes shrimp exporters in Indonesia need to improve product quality and supply stability to compete in the market.

Alga Aquatech is a shrimp producer company that conducts production using closed facilities based on RAS (Recirculated Aquaculture System) technology. Alga Aquatech produces shrimp without antibiotics and other harmful chemicals, resulting in healthier, more nutritious, and fresher products for consumers. Our company serves the request of a shrimp processing factory located in Muara Baru, North Jakarta.

Currently, Alga Aquatech has an area of 2500 M<sup>2</sup> prototype shrimp facility in the Sawangan area, Depok. Our research and development show promising results that we can produce shrimp without antibiotics, reduce the risk of disease significantly, reduce 300% water use and 200% land use and produce up to 4x the production yield compared to intensive aquaculture methods.

Alga Aquatech intends to build a shrimp facility on an industrial scale in 2023 with an estimated total investment required of IDR 80 Billion. In 2021 from the existing facility Alga Aquatech can produce 9 Ton of shrimp and generate IDR 560 million in revenue. This business feasibility report that was constructed during the NVP project period aims to see how many prospects this business has by considering three main factors, i.e., market, industry, and technology.