

## Implementation systems

### 【Japan side】

Oriental Consultants Global Co., Ltd.

### 【Indonesia side】

JALA

## Background

- Indonesia's shrimp production is 710,000 tons/year (in 2021), with a world share of 7.1% (4th in the world), making it a major export product. The Minister of Marine Fisheries has announced that shrimp production will be increased to 2 million tons/year by 2024.
- The current shrimp farming method is a coarse-grained method, and water treatment is inadequate, so the wastewater is polluting coastal waters. Furthermore, the use of seawater from the wastewater for aquaculture has resulted in low yields, which is also a major problem.
- Improving water pollution and increasing shrimp production became strong national demands and urgent priorities.

## Project outline

- The project plan is to apply the recirculating aquaculture system (RAS) technology that is currently developed and commercially operated in Japan, and to evaluate wastewater treatment and aquaculture water circulation treatment methods suitable for the Indonesian environment.
- Investigate current extensive aquaculture facilities to identify problems and consider the specifications and operating conditions for RAS facility which is suitable for Indonesia.
- Conduct a demonstration of shrimp aquaculture by using the proposed technology and evaluate the effectiveness of improvement in shrimp farm discharge water and aquaculture water, while also assessing the operational viability.
- Standardize the design of RAS facilities in Indonesia and promote the dissemination of the technology by cooperation with the Ministry of Marine Affairs and Fisheries.

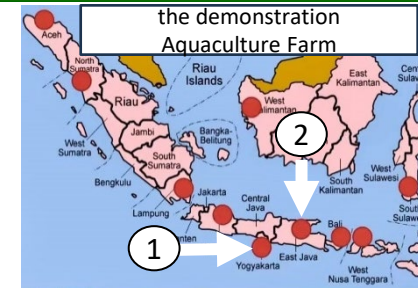
## Location (Planned)

Republic of Indonesia

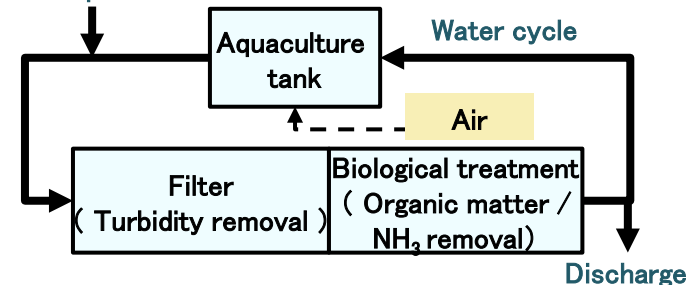
- ① Jepara, Central Java
- ② Probolinggo, East Java

## Outline of technology

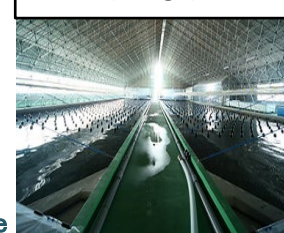
- As shrimp grow, the quality of the aquaculture water deteriorates with ammonia, organic matter, and solids from residual food and excretions.
- Purifying and circulating these components in water treatment facilities with filtration and biological treatment to reduce water consumption and maintain appropriate water quality for discharge and aquaculture water.



Makeup water



aquaculture facility  
(Image)



## Expected results and business prospects

- The discharge water meets the water quality standards and the coastal waters quality into which it is discharged is also expected to improve.
- It is expected to increase the shrimp farming contribute to achieve the national policy targets. Current : 0.5-2kg/m<sup>3</sup> ⇒ Proposed technology: 5-6.5kg/m<sup>3</sup>.
- It can be compatible with traceability, enabling the production of safe and high-quality shrimp.
- It will contribute to achieve SDG No. 8 Economic Growth, No. 12 Sustainable Production and Consumption Patterns, and No. 14 Marine Resources Conservation.
- It can develop business opportunities for Japanese companies through the export of aquaculture facility technology and expanding the market for produced shrimp.