

Fishing for security

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THE aquaculture industry in Malaysia is a crucial business. As the country works to extricate itself from a fluctuating global economy hit hard by the Covid-19 pandemic and wars, the aquaculture sector is among those bouncing back. And it is building up in tandem with plans to resolve food security issues.

In 2021, the fisheries subsector produced 1.75 million tonnes of edible fish, 242.5 million tonnes of ornamental fish, and 24.4 million tonnes of aquatic plants – all worth RM14.88bil. In comparison, the production of edible fish decreased by 2.1% in 2020, but the shortage was mitigated by aquaculture products.

Last year, the aquaculture subsector contributed 573,000 tonnes to the country's fish landings.

Fisheries Malaysia director-general Datuk Adnan Hussain says that this is an increase compared with 417,000 tonnes in 2021.

"We look at the increase and this is enough to prove that aquaculture production can indirectly cover the lack of fish supply, especially during the monsoon season."

The Department of Fisheries wants to increase aquaculture activity further to ensure food security issues are dealt with in a structured manner by agencies under the Agriculture and Food Security Ministry, he says.

However, despite the positive news, some experts warn that efforts to strengthen the sector might not be realised as there is no clear national blueprint to boost the industry.

At least one expressed worry that the current target to have aquaculture buoy fish landings by more than 40% might hit a snag

As Malaysia ramps up efforts to bolster its food security, sectors like aquaculture are facing challenges that could derail ongoing plans.

due to several factors such as land acquisition, climate change, and disease outbreaks, among others.

Universiti Putra Malaysia's fish breeding and genetics expert Assoc Prof Dr Yuzine Esa says a national plan on aquaculture development and sustainability should be established under the upcoming 13th Malaysian Plan (the current 12th Plan runs from 2021 to 2025).

"The Fisheries Department shouldn't work in a silo but together with universities and the private sector to develop the sector."

He also points out that there have yet to be goals set for sustainable practices in aquaculture in the Sustainable Development Goals report.

According to conservation.org aquaculture can have negative environmental impacts if practiced unsustainably, such as the uncontrolled clearing of coastal forests to establish fish farms and water pollution caused by farming chemicals and excess nutrients.

"I believe there should be an indicator to monitor and report on the water quality discharge by aquaculture activities for the blue economy to be sustainable and ecofriendly," he says.

Landing the fish

Assoc Prof Yuzine says the acquisition of land primarily affects the growth of the aquaculture sector. Although more than 13,000ha of land and inland water bodies have been identified as potentially suitable for aquacul-

ture, competition with other economic activities makes land acquisition very difficult.

"Based on the National Food Resource Area Land Use Planning Study by PLANMalaysia, the country needs another 51,300ha of land to fulfil the aquaculture production target by 2040," he says, referring to the Urban and Rural Planning Department.

To overcome the problem for now, an Aquaculture Industrial Zone (AIZ) has been set up as part of the permanent food production zones delineated by state governments to ensure sufficient land is allocated for aquaculture development, says Assoc Prof Yuzine.

"About 40,000ha are now allocated to aquaculture development by the states, which are awaiting investment."

"In addition, rising production costs, lack of skilled labour, the threat of diseases, and food safety and quality of aquaculture produce have become issues which are making aquaculture development difficult."

He adds that high land prices can often make it difficult to maximise returns on investment.

"To compensate, farmers may opt for practices that allow them to increase their yield with limited resources. This includes intensifying production using more efficient methods, even if the individual items are not worth as much."

Assoc Prof Yuzine says in some parts of the world, such as South America, land costs are much lower.

"This means production costs



Boosting aquaculture: Some experts warn that efforts to strengthen the sector might not be realised as there is no clear national blueprint to develop the industry. — Filepic/The Star

can be lowered and a less intensive approach can be taken, resulting in further cost savings."

In Ecuador, he points out, shrimp production costs hover at about RM12 per kg, whereas in Malaysia it costs at least RM25.

Costly farming

Apart from land acquisition, farming shrimp and fish can be an expensive endeavour, Assoc Prof Yuzine says.

It is common for the production costs to range between 30% and 40% of the market value for shrimps and 60% and 70% for fish.

"The real challenge, however, lies in elasticity, which is understanding how flexible these costs can be and if they can offer an edge over others."

"In other words, if the price of goods increases too rapidly, the quantity sold will decrease. More

specifically, feed meal prices, which vary by commodity, are an important factor in determining farmers' profitability.

"As such, when the price of a commodity increases, a farmer may need to switch to another option to remain profitable. This could involve changing their feed supplier."

To mitigate the costs of land acquisition and farming, Assoc Prof Yuzine proposes an additional 74,362ha of land nationwide be set aside: 23,062ha for fishery land use and 51,300ha for aquaculture.

He also suggests that the types of aquaculture activities that can be promoted are farming cockles, sea fish, and sea shrimp as well as freshwater shrimp and fish.

"More AIZ should also be opened up, such as in Temerloh [Pahang], which could be made into a regional freshwater fish



stop at land acquisition and farming costs – diseases, insufficient local fish seeds, environmental pollution, climate change and labour shortages are also on the list of setbacks.

For example, on climate change, Assoc Prof Yuzine says there needs to be an improved flood forecast and warning system.

"This is rather difficult to look into because the weather change has made the occurrences of floods unpredictable."

"Aquaculture is significantly affected, especially for farmers who cultivate their fish in cages set in rivers. The same goes for farmers working in ponds."

He says the National Food Resource Area Land Use Planning Study has found that 57.47% of fishery areas are at risk of being exposed to disasters.

He also calls for the government to impose heftier fines on those responsible for causing environmental pollution.

"Water discharge contaminations from industrial areas can affect agriculture activities. There is a need to strengthen monitoring, surveillance and water quality testing by the Environment Department."

As for insufficient local fish seeds, Assoc Prof Yuzine calls for the development and production of genetically-improved fish breeds to produce high-quality seeds to meet increased market demands.

"Currently, seeds for several commercial species such as grouper, Asian seabass, whiteleg shrimp, tiger shrimp, and even tilapia and catfish are imported."

Ongoing efforts to resolve the issue include the establishment of the National Seed Centre at Universiti Putra Malaysia, which has just been approved by the government under the 12th Malaysia Plan with a budget of RM24mil.

"The centre will be responsible for the depository of all wild and commercial seeds in the country, including fish seeds," he says.

The last would involve the cryopreservation of fish sperm or milt and eggs.

"The centre will work with government agencies for sustainability as well as conservation of plant and animal seed in the country," he says.

Other issues

The problems affecting the aquaculture industry do not just