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Fishing made easy with satellites

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The expertise of advanced countries such as Japan will be sought to come up with fish forecasting models to help local fishermen improve their yield and income.

KUALA LUMPUR: Imagine a fisherman waking up in the morning to a telephone call, text message, an email or fax telling him exactly where the fish is going to be that day.

Far-fetched? Not so.

In an effort to improve the income of some 90,000 fishermen, the government is undertaking a fish-forecasting programme which will enable them to fish at the right spot at the right time. This will translate into better yields and more income.

The pilot project is under way in Kelantan, Terengganu and Pahang.

Science, Technology and Innovation Minister Datuk Seri Dr Jamaludin Jarjis and the Malaysia Centre for Remote Sensing (Macres) director Darus Ahmad are working to make this a nationwide reality by 2010.

The country produces about 1.2 million tonnes of marine and freshwater fish and seaweed a year. The plan is to increase this to two million tonnes by 2010.

Jamaludin said the government had made a commitment to eradicate hardcore poverty.

Since quite a large number of the hardcore poor were from the fishing community, Jamaludin wants to use technology to address the problems.

"Fishermen in our country are still using traditional methods to fish so I said why don't we use technology to increase their yield?"

"Technology can be used to study weather and sea patterns, as well as the temperature, to locate schools of fish. A radar on the boat which can locate fish within a certain radius would be useful, but it is important for the fishermen to know where the fish is first before they use the radar," he said.

Besides Macres, the project involves the Fisheries Department, Fisheries Development Board (LKIM), National Fishermen's Association (Nekmat) and Malaysian Institute of Microelectronic Systems (Mimos Bhd).

"We will invite Universiti Putra Malaysia Terengganu to get involved as it has the expertise in this area. We are also working with the research division of the Fisheries Department in Kuala Terengganu," said Darus.

The project, he said, was fully funded by the government and was expected to cost RM12 million.

Darus said the expertise of advanced countries such as Japan, which are familiar with fish-forecasting models, would be sought.

"We are in the process of negotiating with them on this," he said.

How does fish forecasting work?

"Theoretically, we use information obtained from satellites related to fishing. For example, the satellite can detect the phito-plankton and since this is fish food, the fish can be expected to be around there.

"The satellite can also measure sea temperatures. This is important as the growth of plankton is related to sea temperatures. Fish is also influenced by water temperature," he said.

These, said Darus, together with ground data such as the fish catch by the fishermen, would be the parameters analysed, with the final product being the location map of potential areas.

"We will use the ground data and satellite data to see the correlation between both to produce a good computerised fish forecasting model," he said.

The satellites being used for this project are the Aqua, Terra, OceanSat and NOAA AVHRR satellites.

"These images are available daily through our ground station in Temerloh. Sometimes, though, the images are not clear due to cloud cover."

Currently, he added, some fishermen were using the sonar echo sounder (a radar to detect fish within a certain radius).

"The difference between this and fish forecasting is that the fishermen have to go out to sea before they can use the sonar system.

"With fish forecasting, the location of the fish can be determined before the fishermen go out to sea," he said.

The information, said Darus, would be relayed to the fishermen through whatever communication technology available as often as possible, with the minimum frequency being once a week.

"The project will be expanded to other states and if it becomes successful, it will position Malaysia as a major fish industry player," added Darus.