

Japan firm seeks to spawn salmon farm revolution

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FRD Japan chief operating officer Tetsuro Sogo hopes the firm's experiment will mean more homegrown salmon for Japan's sushi lovers

Japan may be an island nation surrounded by the bounty of the sea, but businessman Tetsuro Sogo is looking inland to raise one of the country's most loved sushi fish: salmon.

In a mountainous area near Tokyo, the water in a tank is a murk of writhing grey salmon, slithering past each other as they angle for food.

They are part of an experiment that Sogo, chief operating officer at FRD Japan, hopes will one day allow cost-effective inland farming of salmon, and enable Japanese to buy the homegrown [fish](#) for their sushi.

"We'll be able to easily get quality salmon wherever we are," Sogo told AFP.

The majority of the salmon consumed worldwide is farmed, not wild, and the aquaculture market is dominated by Norway, which produces 1.3 million tonnes a year.

But farming at sea, the most common way to produce the fish, is a complicated prospect: the sea must be the right temperature—colder than 20 degrees Celsius (68 Fahrenheit)—and only areas without strong waves and currents are suitable, normally inlets or bays.

Inland farming of salmon is often an impractical, expensive endeavour requiring lots of water and electricity to keep tanks clean.

That hasn't stopped demand exploding since the 1980s, with the United States, Russia, Europe and Japan all clamouring for the fish's rich pink flesh, according to the World Wildlife Fund.

"Supply is not catching up with the growing demand," said Sogo, speaking at his test facility in Saitama, 50 kilometres (30 miles) from the sea.

Dressed in a suit like a typical Japanese salaryman, except for a pair of white rubber boots, Sogo carefully monitors the fish as though he is watching his own children.

He explained: "We thought we needed a new way to produce more salmon."



Tetsuro Sogo hopes Japan can one day overtake Norway as the biggest producer of salmon

Keeping it clean

The company's process is two-fold: first, simple tap water is converted to seawater by adding artificial sea salt, which allows the farming process to be set up anywhere tap water is available.

Second, a patented technology involving bacteria cleans the water, consuming the ammonia produced by the fish, and dissolving nitric acid, meaning energy-sucking cleaning systems are not necessary.

"We'll be the world's first successful case for this type of land-based salmon farming if we can turn a profit," Sogo said.

The process was born out of technology developed by Sogo's company for sewage disposal systems.

In 2008, they developed the breakthrough bacteria technology and the following year it was being used at an aquarium in Tokyo, at which point Sogo realised it could be used for salmon farming.

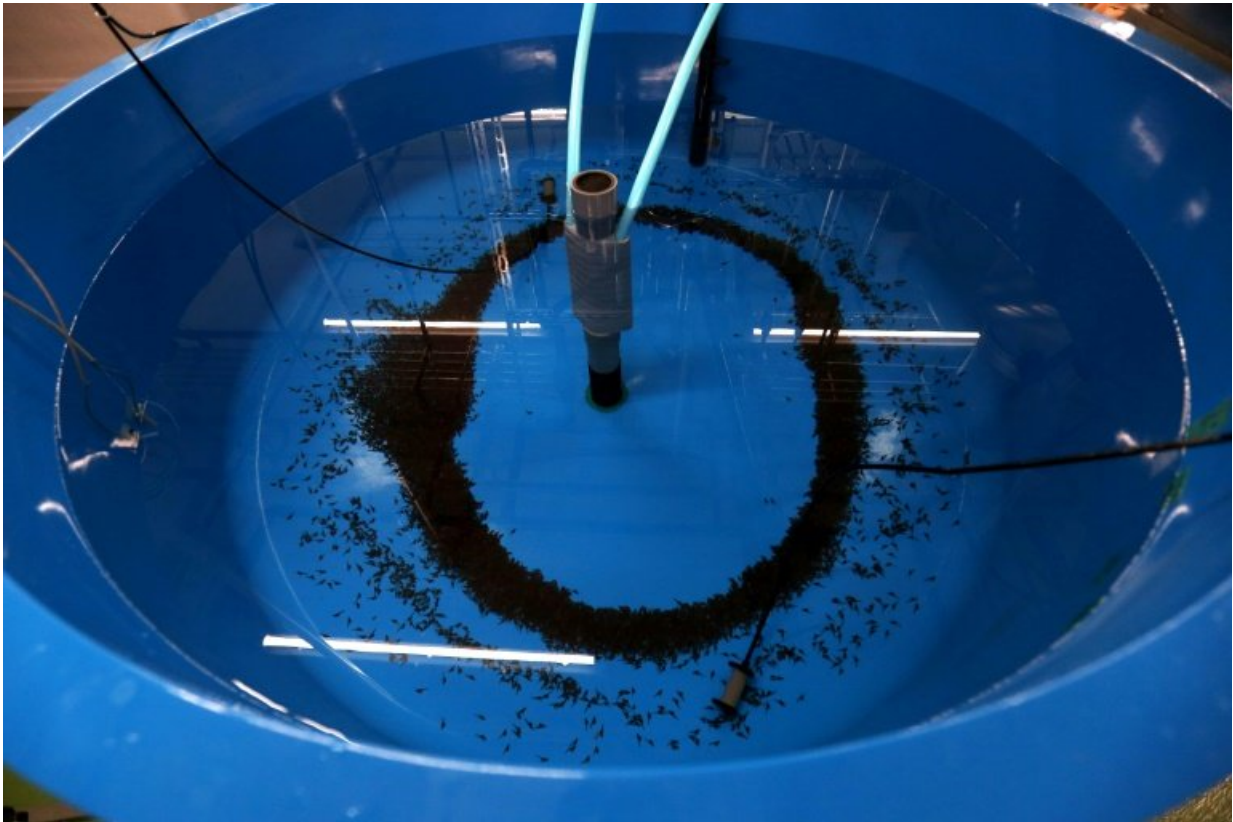
The innovation could be a massive boon for Japan, where a 2017 survey found salmon was the country's favourite sushi fish.

It first began appearing in restaurants in Japan in the 1980s, after the Norwegian Seafood Council began a campaign to popularise it.

But Sogo hopes Japan can one day overtake Norway's production, and export the technology to other consumers in the region.

"Asian markets are likely to grow bigger than the Japanese market," said Sogo.

"We're looking at the possibility of delivering fresh salmon there (through technology imports)."



FRD Japan's process was born out of technology developed by Sogo's company for sewage disposal systems

Scaling up

After a test run last year, which produced one tonne of salmon that was sold to a major supermarket in Tokyo, Sogo plans to have a larger pilot facility up and running by July in Chiba, near Tokyo, producing 30 tonnes a year.

By 2020, the firm is aiming for a commercial plant capable of producing 1,500 tonnes of sushi-ready salmon.

Sogo is far from the only salmon farmer in Japan: in 2015, the central

city of Imizu started farming "sakura-masu" or "cherry blossom salmon", named for their delicate colour.

Rarely caught in the wild, the fish are considered a luxury product.

But the city is farming the salmon using existing inland techniques, meaning running costs for water and electricity are high and capacity is relatively small—just 15 tonnes a year.

"We'll boost production once we clear the capacity hurdle as there is a strong demand for this very tasty fish in the Tokyo area," Tetsuya Murashita, a city official in charge of the project, said.

Seafood company Maruha Nichiro also built a plant last year to farm the prized salmon using a closed inland system, though it lacks Sogo's patented technology.

Japanese salmon fans say they are eager to see locally produced fish available for sushi.

Wild-caught Japanese salmon is already popular locally for grilled dishes, but it is unsuitable for eating raw because it can harbour parasites not present in [farmed salmon](#).

"I'd love it if I could eat made-in-Japan raw salmon," said Megumi Yamanaka, a company employee in her 40s.

She added: "Imported salmon isn't cheap. It would be great if I could buy cheaper and safer homemade [salmon](#)."

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