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Data-bait: Using tech to hook globe's multi-billion-dollar fishing cheats

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In 2016, a Thai-flagged fishing vessel was detained in Seychelles on suspicion that it had been fishing illegally in the Indian Ocean, one of the world's richest fishing grounds.

The Jin Shyang Yih 668 was caught with help from technology deployed by FISH-i Africa, a grouping of eight east African countries including Tanzania, Mozambique and Kenya.

But as the vessel headed to Thailand, which pledged to investigate and prosecute the case, it turned off its tracking equipment and disappeared. Its whereabouts remain unknown.

Such activity is rampant in the global fishing industry, experts say, where illegal, unreported and unregulated (IUU) fishing is estimated to cost \$23.5 billion a year.

However, a range of non-profit and for-profit organisations that are developing technology solutions to tackle IUU say it is a matter of time before vessels can no longer vanish.

"The industry is developing very fast ... basically the oceans will be fully traceable. There is no place to hide," said Roberto Mielgo Bregazzi, the co-founder of Madrid-based FishSpektrum, one of the few for-profit platforms.

EAGLE-EYED

With backing from Google, Microsoft's Paul Allen and Leonardo DiCaprio, among others, such platforms also track fishing on the high seas and in marine reserves, aided by radio and satellite data that send vessels' locations and movements.

They use satellite imagery, drones, algorithms and the ability to process vast amounts of data, as well as old-fashioned sleuthing and analysis, to help countries control their waters.

Algorithms could identify illegal behaviour, Mielgo Bregazzi told the Thomson Reuters Foundation, including predicting when a fishing vessel was about to meet its quota, triggering an alarm.

Bradley Soule, the chief fisheries analyst at OceanMind, a non-profit, said technology can help even rich countries, which might otherwise struggle to process the volume of data broadcast by hundreds of thousands of vessels.

Organisations such as his crunch that data and help to differentiate between normal and suspicious activity.

“The bulk of the threat is non-compliance by mainly legal operators who skirt the rules when they think no one’s looking,” said Soule, who helps Costa Rica monitor its waters.

Others go further. Trygg Mat Tracking (TMT), a Norway-based non-profit, digs up data on a vessel’s identity, its owners, agents and which company provides the crew. Its approach saw a South Korean ship in 2013 pay a then-record \$1 million fine.

KNOWN UNKNOWNNS

Decades of over-exploitation mean fishing grounds are under strain. The United Nations’ Food and Agriculture Organization (FAO) said in 2016 nearly a third of commercial stocks were being fished at unsustainable levels.

Dirk Zeller, who heads the Sea Around Us - Indian Ocean project at the University of Western Australia, said as the ocean’s bounty is a public resource, the world should know who is taking what.

Part of the problem, he said, is overcapacity in the global fishing fleet.

But he also points to difficulties in calculating IUU’s scale: the FAO’s estimates of fish stocks, for instance, are based on official government data, which are open to under- and over-reporting.

His research shows global catches from 1950 to 2010 were 50 percent higher than countries had said.

All of which goes some way to explaining why the true extent of IUU remains unknown, experts say.

The best IUU study came out in 2009, said Miren Gutierrez, research associate at London-based think-tank the Overseas Development Institute (ODI). That study, which experts rate as the most reliable, came up with the \$23.5 billion figure.

In a bid to update that, the FAO is developing guidelines to help countries estimate IUU fishing in their waters. It is also working with non-profit Global Fishing Watch (GFW) on a report scheduled for July to estimate how much fishing is taking place.

GFW head Tony Long, a British navy veteran, said transparency would drive better behaviour, and meant “those people who choose not to be compliant stand out more”.

NO SILVER BULLET

Yet there is still much to do: to date, a recent ODI report on technology platforms noted, governments and multilaterals have “failed to produce a single, effective, public global fisheries information tool”.

Alfonso Daniels, who co-authored the report, said a database of vessels known to be involved in IUU fishing would help.

TMT has tried to fill this gap. In April it launched a website with up-to-date details of nearly 300 vessels accused by nine regional fisheries management organisations of being involved in IUU fishing.

That, though, is a drop in the ocean.

The FAO estimates 4.6 million fishing vessels are out there, the ODI report said, yet its database listed - as of 2015 - just 5 percent of them. The FAO is looking to improve on that: last year it launched an online database of vessels that, although currently open only to member states, will be publicly accessible later this year.

But for all the promise technology brings, it cannot provide a complete picture, said Duncan Copeland, chief analyst at TMT.

“You need a combination of other information sources, like working with neighbouring countries,” he said.

The FAO’s senior fishery officer, Matthew Camilleri, agrees technology is no silver bullet. “What use is it if you’re able to detect IUU fishing and find the vessel with illegal fish on board, but you do not have the process in place to enforce, to prosecute?” he said.

Progress is underway towards that in the form of the FAO’s 2009 Port State Measures Agreement, which is aimed at curbing IUU fishing. Close to half of the 194 U.N. member states have signed it, including four of the top five fishing nations - Indonesia, the United States, Russia and Japan.

China, though, has not. It is the world’s largest fishing nation, whose 2014 catch of 14.8 million tons, the FAO’s 2016 State of the World’s Fisheries report showed, was as much as the next three nations combined.

When asked whether it was likely to sign, China’s mission to the FAO in Rome told the Thomson Reuters Foundation it was not authorized to comment.

Tony Long from GFW - which runs a free-to-access platform that uses Automatic Identification System (AIS) data to track the global movement of vessels - said combining technology with cooperation between countries could close the loopholes.

“We are in a very imperfect situation, so the more countries that ratify tools like the Port State Measures Agreement and mandate the use of tracking systems ... and go transparent, the better,” he said.

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