

## The End of Fish? Game Theory Game

**Over the past 30 years, global consumption of fish has doubled.** Between growing demand and new technologies, fishing has become a huge industry that has changed marine ecosystems, stripping nature of its ability to renew resources.

According to the FAO, more than **80% of the ocean's fish are being fished to the maximum allowable level or overfished.** People around the world who make their living from fishing have noticed that fish are disappearing at alarming rates. The problem? 200 nautical miles off of any coast, the waters are not regulated by any government. That means that agreements can be made but are not enforced.

Your job today is to work with – or against – a partner to decide on regulations for ocean waters. One partner will play the part of Finland, the other Japan. Will you work together to solve the problem, or alone to get ahead?

### Instructions:

- 1) In partners, decide who will be Japan and who will be Finland
- 2) Together, read through the scenarios attached (one scenario at a time).
- 3) For each scenario, **independently decide whether you agree or disagree, and record your answer on a scrap of paper. DO NOT SHARE RESPONSES.**
- 4) Share your answer for each scenario together. Using the chart below, tally your total scores.
- 5) Complete the reflection.

<b>Both Agree</b> \$100/ each 50 fishing years	<b>Japan Agrees, Finland Disagrees</b> \$0/ Japan \$100/ Finland 30 fishing years
<b>Finland Agrees, Japan Disagrees</b> \$0/ Finland \$100/ Japan 30 fishing years	<b>Both Disagree</b> \$200/ each negative 10 fishing years

### Scenario One: Agree to Limit Time Spent on the Ocean

## Time Spent on the Ocean

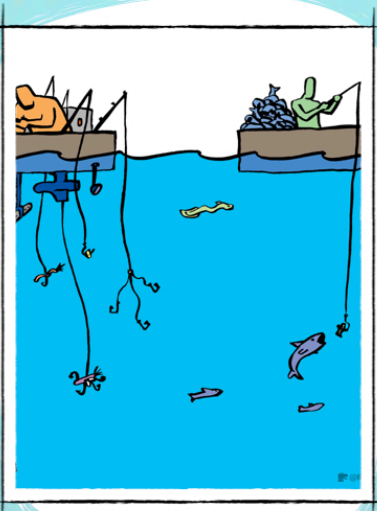
- \* New technology has led to larger boats that can stay out on the ocean for very long periods of time
- \* Factory boats can also package fish on the boat itself, so fishing vessels no longer need to return to shore as often with their catch
- \* This means fish can be caught at even higher rates



### Scenario Two: Agree to Limit the Amount of Fish Caught

## Big Boats, Big Nets

- \* Bigger boats and more advanced fishing equipment have led to bigger and bigger catches
- \* The biggest boats, up to 170 meters long, have a storage capacity equivalent to several Boeing 747s.
- \* Fish species are being wiped out, as not enough young fish are left to carry on the species and renew the stock



### Scenario Three: Agree to Limit the Technology Allowed

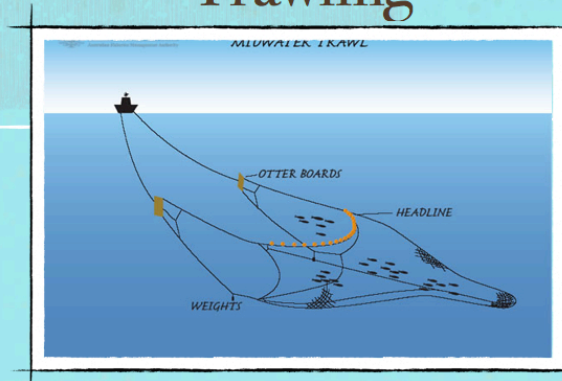
## Electronic Sonars

- \* Using electronic equipment like sonar and GPS allow fishing boats to find large schools of fish quickly
- \* Unfortunately, this means that fish are being removed from the ocean at even higher rates
- \* Sonar can also be dangerous to marine mammals like dolphins and whales, causing hearing loss, disorientation and death



### Scenario Four: Agree to Limit Trawling

## Trawling



- \* In trawling, huge nets are dragged behind ships to catch fish
- \* Typically, the nets catch unwanted fish (like dolphins and sharks), killing them in the process
- \* Trawling nets also disrupt the ocean floor and ecosystems

