



SUSTAINABLE FISHERY



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SUSTAINABLE FISHERY

Sustainable fishing means leaving enough fish in the ocean so that species can survive, respecting their habitats and ensuring that people who depend on fishing activity can maintain their livelihoods.

FISH STOCK REVIEW

Based on overfishing statistics in website "The World Counts", it states that almost 80% of the world's fisheries in states of collapse, also from the studies, nearly 90% of worldwide large predatory fish, such as sharks, tuna, marlin, and swordfish, are already gone. Other than that, the studies also state if the overfishing and something familiar to it never ends or changes, we will run out of seafood or marine life in 2048. The missing of life in the oceans is a problem in itself. Imagine our new generation never gets to see marine life in the future, it's not just about food for us.

While in Malaysia, based on an article "Malaysian International Food & Beverage Trade Fair" (14th Nov 2019). Malaysian fishermen caught almost one million tonnes of seafood in Malaysia was undersupply that caused Malaysia to import seafood from other countries. This is evidence that fish stock in our country is in risk.

Before we go further, let's know more about overfishing. It's when a species of fish is taken out of water or their habitat at a rate that the species cannot reproduce, resulting in those species becoming underpopulated in that area. The fisheries are very concerned about this issue over decades but people still do it. Overfishing takes very bad effects on the population of marine life.

Another effect of overfishing is it can change the size of fish remaining, as well as how they reproduce and the speed at which they mature. When a big amount of fish is taken out of the ocean it creates an imbalance in the food web and leads to a loss of other important marine life, including vulnerable species like sea turtles, whales and corals. Some irresponsible fishermen use big fish net, not caring how it can take immature baby fish or other marine life.

FISHING METHOD THAT MIGHT CONTROL CATCH FISH IN MALAYSIA

As we all know, there are many techniques for catching fish. But, which technique can control the catch fish? Here are the techniques that can be used to catch fish which are netting, angling and trapping.

- NETTING

- a) Gillnets

Gillnet is a wall of nets that hangs far in the water column. A gillnet is made of monofilament or multifilament nylon. The net is very thin. Therefore, fish cannot see nets or nets have been arranged to trap fish. The size of the net has been designed to allow the targeted fish such as tuna species to swim up into the net. The fish's head will stick to the net.

- b) Cast nets

This is a round net with a small weight distributed around its edge. It is also known as a throwing net. The net is thrown by hand before sinking into the water. Fish are caught when the net is pulled in. This net is very effective for catching small baits.

- ANGLING

- a) Trolling

Trolling is one of the effective ways to catch fish where one or more fishing lines and bait fish, are drawn through the water. The lines can be hauled in by hand or mechanically using small winches. Trolling lines are used to catch a variety of species such as mackerel and tuna. This fishing method has low catch of non-targeted species. Fishermen can quickly release the unwanted species since the lines are reeled in soon after fish take the bait.

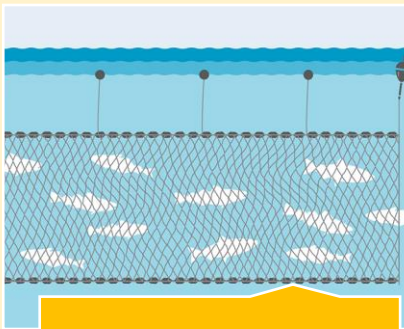
- b) Pole and Line.

Pole and line is a fishing method used to catch targeted species such as tuna and other large pelagic (midwater) species one fish at a time. Pole and lines are the poles with a single line, hook and bait. it can also be hand-operated or mechanized when operating in deep waters. Pole and line have a lower catch of unwanted species. This is because fishermen catch one fish at a time and then they can release unwanted species.

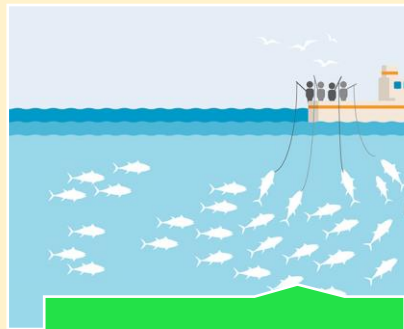
- TRAPPING

Traps or Pots.

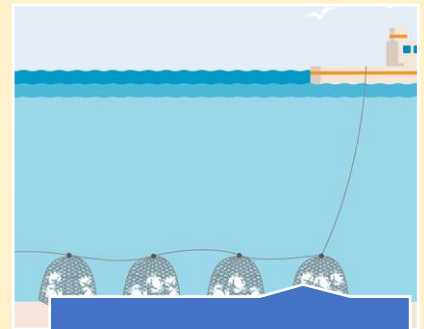
Traps and pots are cages or baskets that hold species such as lobsters and crabs. Most of the traps are attached by a rope to a buoy on the surface of the water. Traps and pots are submerged three-dimensional wire that allow organisms to enter the trap. Bait is commonly put in the trap to attract the organisms inside. The trap usually placed on the seafloor, but some are designed to be in midwater.



Gillnet

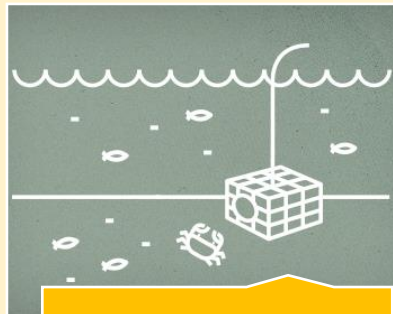


Pole and Line

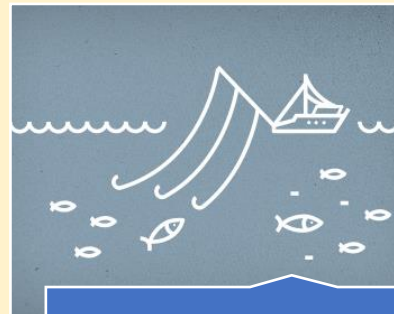


Pots and Traps

<https://www.msc.org/what-we-are-doing/our-approach/fishing-methods-and-gear-types/pelagic-trawls>



Trap



Trolling

<https://www.realgoodfish.com/fishing-method>

HOW TO MAINTAIN FISH STOCK IN THE OCEAN.

Oceans are huge as we may know that more than the earth is surrounded by the water, which makes there are enormous numbers of marine life in the ocean. This can be assumed that overfishing is one of the main causes why the population of fish is decreasing. This effect creates an unbalanced food web toward marine life and also man. Later, it also brings the issues about how much that fishermen can catch in one time or how many of seafood that should be taken.

It is difficult to count manually to know the specific losses of the fish. With that, here are some solutions in order to maintain fish stock in the ocean:

✓ Stop overfishing.

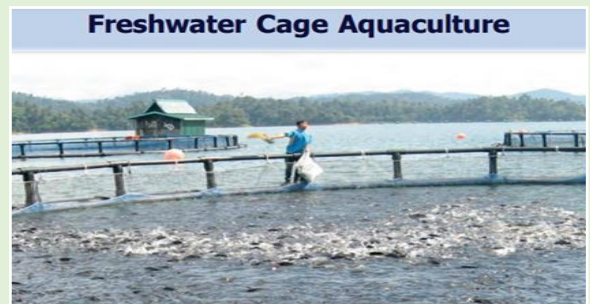
By setting a limit in fishing, we can kill two birds in one stone. The benefits here are, the fishmonger can provide fresh fish to the consumer and also reducing the dumping of unsold fish.

✓ Restricting fishing area.

Always monitor the other area else than fishing area. This idea is to prevent illegal fishing that may harm the enhancement of fish population.

✓ Breeding.

Aquaculture technique has been used in order to keep maintain the population of the fish. Malaysian Fisheries Society in one of Department Fisheries used this technique for breeding the Tilapia and Catfish.



Aquaculture in Malaysia for Tilapia.

✓ 'Save the Ocean' campaign.

Marine pollution and debris in the ocean becoming serious matter nowadays. As a consumer, we need to consume fresh and healthy seafood. With that, we need to provide a clean and safe home for the marine life. Only with this action, fish can live healthily and safe from any harm especially from pollutant to keep maintain their population.

MANAGEMENT OF THE MARINE FISHERIES RESOURCES

- ❑ Immediate restriction of fishing effort by the licensing of fishing gear and fishing vessels: a review of the fishing licensing protocols is a continuing process.
- ❑ Identification of nursery areas that should be protected and maintained as nurseries to ensure the survival of juveniles of the commercially valuable fish species. These areas may be considered as closed fishing areas or as zones for special fishing gear, depending on the fishing vessels.
- ❑ Established and gazetted several Marine Protected Areas (MMPAs) in marine parks to enable overexploited marine resources to recover, and to conserve coral reefs, since the 1980s. The MPAs are protected areas of sea with one or two nautical miles of "no-take zone" from the shore at the lowest tide where fishing is prohibited.

The management measures that have been implemented through the legal and institutional framework to control fishing effort include:

➤ **Limiting the fishing effort.**

A moratorium has been placed on the issuance of new or additional fishing licences for vessels to fish in coastal waters. This is to ensure that the current high pressure on the limited coastal fisheries resources will not be increased, to prevent overexploitation.

➤ **Controls on size and power of fishing vessels.**

Fishermen who want to change the tonnage or engine power of fishing vessels requires permission from the Director –General of Fisheries.

➤ **Registration of fishermen.**

This programme controls entry of new individuals into the fishing industry. Every fisherman is required to have a fishermen registration card.

➤ **Relocation of excess fishermen in other sectors.**

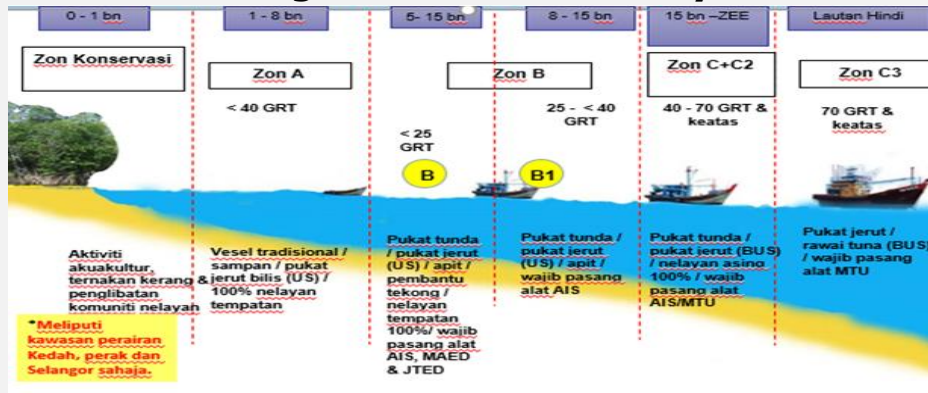
A voluntary program to resettle over-fishermen is in place to alleviate fishing pressure, in particular on inshore fishing. These fishermen are encouraged to participate in other downstream operations, such as aquaculture and post-harvest fish processing.

➤ **Management zones.**

Fishing zones have been defined by way of a licensing system, with zones allocated for particular fishing gear, type of vessels and ownership. The

management zones have aimed to ensure an equal sharing and to reduce the tension between conventional and commercial fishermen.

Fishing Zones in West Malaysia.



https://www.dof.gov.my/dof2/resources/user_49/Bahagian%20Pengurusan%20Sumber/Gambar/PENGEZONAN_SEMULA_KAWASAN.png

Fishing Zones in East Malaysia.



https://www.dof.gov.my/dof2/resources/user_49/Bahagian%20Pengurusan%20Sumber/Gambar/Pengezonan_kawasan.png

➤ Prohibition of fishing gear.

Persuant to the Fisheries Act 1985, Fisheries (Prohibition of Fishing) Regulations 1980. destructive fishing gear that impacts the environment and the fisheries resources are banned such as fishing pair trawling, electric fishing, fishing using poisons and explosives, push nets and gill nets of more than 10 inches mesh size.



Mantanani Divers founder Robert Thien removes the carcass of a hawksbill turtle from a ghost net in the sea off Mantanani Island in Sabah.

<https://s3media.freemalaysiatoday.com/wp-content/uploads/2020/06/Mantanani-Divers-founder-Robert-Thien.jpg>

BENEFIT OF SUSTAINABLE FISHERY

Recovery of fish stocks

- It is because, the fishery management will limit the amount of fish caught by the fisherman and this will enable the fish to reproduce. This way, the stock of fish in the ocean will always get recovered.

Keeping the balance of an ecosystem

- Every marine life play their own role in the ecosystem. When the fishes stock of fishes is stable, the food chain will also be stable. Thus, it will create a balance ecosystem.

Survival of coastal population

- The reduction of trawling, dredging, and blast fishing by the fisherman will save the aquatic habitat and the coastal community will have a good fish stock and a healthy ocean environment.



Fish brought up at the Mersing jetty.



Fish sold at the market

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Marine Coastal and Delta Sustainability for Malaysia

special thanks :

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MUHAMMAD FARIS DANIAL BIN FADZLI

Care about the sea. Let's keep the beauty of the sea forever.



SRI AISYAH BINTI ADIM

If you can't be the doctor for humans, then be the doctor for the nature.



NUR SYAKIRAH BINTI ARIPIN

We only have like 28 years to fix our ocean before all marine life disappeared forever



NUR HIDAYAH BINTI MAHAT

The sea is a priceless creation of god when we see it so it is not our reason to ruin it



NURSYAHMI SYAHIRAH SOFIA BINTI HASNIZAM

I wish our ocean will forever clean and safe.



NURUL HAWANI BINTI ZULKIFLY

No matter where we lives, our everyday lives are connected to the sea. So, together let's keep the oceans breath.