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Environmental commission

Increasing sustainable ways of fishing

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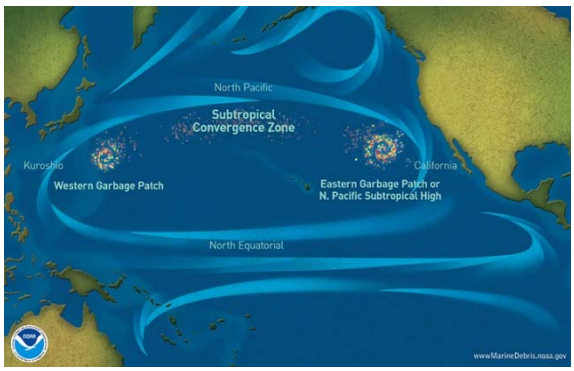
Introduction

The global population is growing and it is to be expected that our consumption will be increasing with %50. Close to a third of commercial fisheries globally have already collapsed. And because not all fish stocks have been addressed this might even be an underestimated number. The aquaculture practices are often commercial and focussed on profit. This causes overexploitation of fish life stocks with harmful and irreversible effects to ocean habitants and economy. The unsustainable practices also cause harmful effects to the environment by disposing toxic waste and pollutants. This will increase the greenhouse gases from which currently 50% are absorbed by our oceans. Approximately 13.000 pieces of plastic per square kilometre are to be found in our oceans, the plastic waste has already formed large groups of plastic called “Garbage Patches”. Over 3 billion citizens depend on marine and costal biodiversity for their livelihoods, if unsustainable fishery proceeds, these people will harmfully be affected. Luckily people see how important it is to solve this issue in order to secure the safety of our global population, ocean’s flora and fauna. In the Sustainable Development Goals (SDG) are several goals that help to solve the issue. There even is one goal completely dedicated to the issue, SDG14 (conserve and sustainably use the oceans, seas and marine resources for sustainable development). Many other SDG’s are also involved in this issue, SDG12 (ensure sustainable consumption and production patterns), SDG 13 (take urgent action to combat climate change and its impacts), SDG 15 (protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse degradation and halt biodiversity) and of course SDG 17 (strengthen the means of implementation and revitalize the global partnership for sustainable development).



General overview

Mankind has used fishing as a food resource for as long as we exist. As long as we don’t exploit the carrying capacity of our seas and ocean’s this won’t be an issue. It is necessary for oceans, seas, and marine resources if they are entitled to successfully contribute to human livelihoods and ecosystems integrity to maintain the properly functioning physical and

biochemical processes. This doesn't mean that marine resources must remain untouched, but these systems must remain without any serious or irreversible harm. Overfishing is one of the world's biggest threats currently. The other marine based issue facing our planet is unsustainable ways of fishing;

Overfishing

as 80% of our living creatures being fish, there is enough fish to feed four earth like planets only the way of how we fish is threatening this crucial resource. Fishing fleets are two to three times as large as our oceans sustainably can support and needed is to feed their consumers. In the year 1900, the ocean contained more than six times as many fish as in 2009. This already caused a collapse of the Northern Cod Fishery in Newfoundland in Canada in 1992. Over 40.000 people lost their job and the Cod has never returned. This was only a small example. Overfishing causes a mass extinction of fish stocks which causes ecological dead zones. Overfishing is funded by our governments in subsidies.

Unsustainable ways of fishing

On top of overcapacity, many fishing methods are very harmful to the present marine ecosystems and unsustainable. One example is bycatch. This is a quite modern issue, the newly designed fishing gear is very strong and will be very efficient at catching the desired fish but also anything else in its path. Often turtles, dolphins, and juvenile fish are caught and (accidently) harmed. The next aspect of unsustainable ways of fishing is discarded. The bycatch after being exposed to very harsh and often lethal circumstances often will be thrown back into the sea or ocean. They will be thrown back dead or dying. For one kg of shrimp sometimes as high as twenty kg of bycatch has to die. The oceans and seas are also victims of major plastic pollution. Another damaging way of fishing is called bottom trawling (see image). This causes major damages to the sea floor and vegetation such as coral reefs.

Aquaculture

Farming fish seems like a very good way of protecting our seas and oceans. Sadly, there are several downsides to this alternative way of producing fish. The first downside is that many farmed fish like salmon are carnivore which means that in order to produce one kg of salmon five kg of smaller fish. This is very unsustainable and causes decreasing of fish stocks. Fish farms located in oceans and seas are also very damaging to the marine environment. Farmed fish are also fed with medicine in order to make them grow faster and keep them from getting sick. In aquaculture many fish live in a relatively small space, this causes environmental damage. Their faeces are polluted with medicine fed to them and form a sometimes toxic layer on the sea ground which also negatively affects the other fish.

Targeted fish

The Cod is a very overexploited fish which was almost extinct due to overfishing this stock. Many marine fish stocks grow fast but reach maturity late. Fishing companies tend to fish for fish that reached their mature size, many of these fish didn't have the chance to reproduce. Many fish stocks are overexploited in this fashion. Other fishes targeted by overexploitation are those who are particularly popular. There is a very high pressure by the fishing industry on catching fish such as; tuna (especially Bluefin Tuna), salmon and Cod. The price of a large tuna is hundreds of thousands of US dollars, this makes this fish species highly

overexploited. Some fish stocks are not directly targeted but are indirectly such as sharks. They are on top of the food chain, as these species no longer have access to the fish feeding them makes life and reproduction impossible.

Oceans, seas, and marine resources are increasingly threatened, degraded or destroyed by human activities, reducing their ability to provide crucial ecosystem services. Important classes of threats are, among others, climate change, marine pollution, unsustainable extraction of marine resources and physical alterations and destruction of marine and coastal habitats and landscapes. The deterioration of coastal and marine ecosystems and habitats is negatively affecting human well-being worldwide.

Major parties involved

European Union

In the chapter called “Useful links” are two links to webpages concerning the relevance of the EU in overfishing. The EU is a huge financial resource for European fishing companies. The funding even continues when the fishing companies have acted with ignorance towards the rules and regulations. The EU is also responsible for the TAC which in some cases is way too high.

National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) was founded in 1970 as an agency within the Department of Commerce of the United States of America. NOAA’s sub department “NOAA Fisheries” provides science-based management and conservation for sustainable aqua cultural practices and fisheries, endangered species, marine mammals and their habitats. NOAA facilitates much research on overfishing and is a large source of information on this topic. NOAA only focusses on United States marine territories.

Japan

Japan has a culture in which eating fish is very commen. Therefor the consumption of fish is very high in the nation of Japan. Japan’s economy, food resources, and culture depends on fish therefor the government of Japan hesitates to take harsh measures to the unstaible fishing network of Japan

Spain

Spain has just as Japan a large fishing culture. The overfishing caused by the Spanish fishingfleet is funded by the EU. Spain is working on taking measures against the cause but has not yet taken any harsh measures.

Definition of key-terms

Ecological dead zones

A dead zone is a more common term for hypoxia. This is a phenomenon appearing when there is a reduced level of oxygen in a marine environment. This can be caused by a sudden change in vegetation, habitation or temperature.

Overexploitation
Profit based utilization. In this case, over usage of our marine resources.

Overfishing
An overexploitation of fish stocks resulting in a reduction of fish stocks below acceptable levels.

Bycatch
The unintentionally caught marine species. This often includes dolphins, smaller fish, marine turtles, and seabirds. These animals almost never survive such an accidental catch

Discards
Bycatch thrown back into the sea or ocean. The discarded bycatch is often dead or close to dead.

Aquaculture
Aquaculture, also known as aquafarming, is the farming of aquatic organisms such as fish, crustaceans, molluscs and aquatic plants.

Total Allowable Catches (TAC)
A limit set by governments on the amount of fish caught. This often depends on recommendations submitted by scientists.

Recruitment overfishing
This phenomenon appears when the mature adult population of a fish stock is depleted to a level where it is no longer possible to reproductively support the fish stock.

Ecosystem overfishing
Ecosystem overfishing appears when a specific size or sort of fish has been depleted in the amount that the ecosystems are outbalanced. If for example, smaller fish are no longer in an area, predatory species no longer have a chance of survival.

Relevant UN treaties and resolutions

Reports
http://www.un.org/ga/search/view_doc.asp?symbol=A/69/71

http://www.un.org/ga/search/view_doc.asp?symbol=A/69/71/Add.1

http://www.un.org/ga/search/view_doc.asp?symbol=A/69/77

http://www.un.org/ga/search/view_doc.asp?symbol=A/69/90

http://www.un.org/ga/search/view_doc.asp?symbol=A/69/177

resolutions

Resolution	Implemented in

A/RES/46/215	1991
A/RES/47/192, A/RES/48/194	1992
A/RES/48/28, A/RES/49/121, A/RES/48/263, A/RES/49/116	1993
A/RES/49/28, A/RES/50/25, A/RES/50/24	1994
A/RES/50/23, A/RES/51/36, A/RES/51/35	1995
A/RES/51/34, A/RES/52/29, A/RES/52/28, A/RES/52/27, A/RES/52/26	1996
A/RES/52/251, A/RES/53/33	1997-1998
A/RES/53/32, A/RES/54/33, A/RES/54/32	1998
A/RES/54/31, A/RES/55/8	1999
A/RES/55/7	2000
A/RES/56/13, A/RES/56/12	2001
A/RES/57/33, A/RES/57/143, A/RES/57/142, A/RES/57/141	2002
A/RES/58/14, A/RES/58/240	2003
A/RES/59/25, A/RES/59/24	2004
A/RES/60/31, A/RES/60/30	2005
A/RES/61/105, A/RES/61/222	2006
A/RES/62/177, A/RES/62/215	2007
A/RES/63/112, A/RES/63/111	2008
A/RES/64/72, A/RES/64/71	2009
A/RES/65/38, A/RES/65/37A, A/RES/65/37B	2010
A/RES/66/68, A/RES/66/231	2011
A/RES/67/5, A/RES/67/79, A/RES/67/78	2012
A/RES/68/71, A/RES/68/70	2013
A/RES/69/109, A/RES/69/245	2014
A/RES/69/292, A/RES/70/75, A/RES/70/226, A/RES/70/235	2015

Previous attempts to solve the issue

Globally governments and governmental organizations set certain limits on specific fish stocks. These quotas are called Total Allowable Catches (TAC), they are based on recommendations from scientists who are experts on the matter. Although they are supposedly based on them, the TAC are often sufficiently higher than the recommended quotas. One significant example is the Bluefin Tuna. The by scientists recommended TAC for the Bluefin Tuna is 10.000 tons. This amount is high enough to let the fish stock reproduce and to make sure the endangered species is well able to sustain. The European Union decided to set the TAC on 29.500 tons of caught Bluefin Tuna, this is almost three times the recommended amount. The total caught amount of Bluefin Tuna was 61.000 tons, over six times the recommended quota. These fishing fleets acting with ignorance towards the TAC are often sanctioned very softly and even remain receiving government funding afterwards.

As seen in “relevant UN treaties and resolutions” many resolutions have been passed on the topic. Therefor the lack of governmental attention is not the issue. Fish is the main source of protein for over one billion global citizens and with the drastic growth of our population in mind, the governments are scared to set harsh consequences. Because they want to secure a proper meal for their citizens.

Although many rules and regulations have been implemented, these did not yet result in a decrease of the threat. The following measures have been taken; there are set periods in the year when fisheries are allowed to fish in specific areas in order to give the fish a chance to breed and reproduce.
zones are marked as no-fishing zones to allow fish stocks to recover. In addition to that fishing areas are rotated among fisheries in order to give fisheries equal opportunities.
In many nations fishing gear that allows juvenile fish to be caught is not allowed to be used. This was implemented to make sure the fish reaches maturity and is able to reproduce.
There are many installations and monitoring equipment set up to regulate the fishing activities, this has been very effective.
In some nations (such as the Netherlands), fishing fleets are urged to bring the plastic pollution caught as bycatch back to the shore in order to recycle or properly discard the polluting objects.

Possible solutions

Illegal fisheries

This issue is less of a problem in western and industrialized nations because of strict regulations on the necessary permits. The illegal fisheries often fish for financially very valuable fish species such as tuna. These fish stocks are often very endangered. In order to solve this issue, stricter rules are required to be implemented. This needs to be focussing on permits for vessels used as part of the fishing fleet. Governmentally run ships need to do daily check-ups on these fishing ships. This is in order to check on the fishing gear which can be very harmful to the marine environment. These governmental figures will also check on the specific fish species caught on the ship.

Stricter quotas

the current quotas enforced by governments are not following recommendations done by

scientists. With lowering these quotas governments are securing the safety, reproduction, and livelihoods of the fish stocks.

Aquaculture

Some forms of aquaculture are harmful to consumer and environment. This includes farmed carnivore fish such as salmon which requires more fish than it actually produces and the antibiotics fed to them pollute other habitats. There are many sustainable projects on farming fish. The most sustainable fishes to farm in aquaculture are those who don't require other fish to be fed. Specific fish species such as the Tilapia, Catfish, shellfish, and Claresse. The promotion of more sustainably farmed species should be a priority. Species such as salmon which are very popular but not farmed in a sustainable fashion require more studies on improving the sustainability of their feed. Many ideas to make aquaculture more sustainable such as using bycatch to feed the carnivore fish already exist but require more research. Of course, this research needs funding. Instead of funding mega tankers that increase overfishing, governments can fund research on sustainable aquaculture.

Unsustainable fishing gear

Unsustainable fishing gear is often utilized and brings harmful consequences to our marine environment. Bottom Trawling is an example of unsustainable gear. Bottom trawling is towing a trawl (a specific kind of fishing net) along the sea floor. This results in a destruction of all vegetation living near the bottom of the sea. Other unsustainable fishing gear is, for instance, a net with no opportunity for smaller fish that didn't reach the age of maturity yet to escape. Many types of research are needed to create sustainable ways to catch enough fish. Much research has already been conducted on improving the sustainability of fishing gear but in order to solve this issue, more research needs to be done.

Governmental funding

The EU funds fishery annually with a total amount of 5.748,1 million euros. This funding often goes to fishing vessels which are highly contributing to overfishing. Some are the size of tankers and catch thousands of kilograms of fish on a daily basis. The EU which is the biggest governmental funder of fisheries funds vessels which repeatedly ignored their TAC. In order to make fishing companies more aware of their quotas, we need to actually punish them for their acts and stop governmental funding.

Bycatch

In addition to the already too high amounts of fish caught there is often the issue of bycatch. The accidentally caught creatures are often thrown back into the sea or ocean. There are several reasons for this to happen, many species are not allowed to be sold by these fishing companies such as dolphins, smaller juvenile fish, and turtles. If the fishing company is not entitled to sell the bycatch, it is not useful to have it taking valuable place on the ship. Therefor fish will die for nothing. If fishing gear improves, the amount of unwanted bycatch will reduce. By handling quicker, many bycatch can be saved. This will of course not solve the entire issue of bycatch; it could be used to feed farmed carnivore fish. The farmed carnivore fish currently eat fish specially caught to feed them, this unsustainable way of aquaculture can be made more sustainable by feeding bycatch.

Consumer awareness

the average daily meal of a western citizen of an industrialized country contains more meat

and fish than necessary. A decrease in consumed meat and fish will be the result of spreading awareness on this. Also, the importance of combatting overfishing should be more well known. By providing more information about the issue people will make better decisions. Which results in a sales raise of sustainably farmed fish and a decrease of the consumption of endangered fish stocks such as tuna. The awareness can be spread in different ways such as social media, television campaigns, and radio campaigns.

Useful links

This is the UNDP page on the 14th sustainable development goals;
http://www.undp.org/content/undp/en/home/sdgoverview/post-2015-development-agenda/goal-14.html

This is the UNDP page on the 12th sustainable development goals;
http://www.undp.org/content/undp/en/home/sdgoverview/post-2015-development-agenda/goal-12.html

this is a list of the threatened marine species created by NMFS' Jurisdiction;
http://www.nmfs.noaa.gov/pr/species/esa/listed.htm

this is a very useful website on overfishing; http://overfishing.org/

this is a short documentary made by NGO's on overfishing;
https://www.youtube.com/watch?v=F6nwZUkBeas

this is the website of WWF on the issue of bycatch;
http://www.worldwildlife.org/threats/bycatch

a report on the current status of overexploitation by FAO;
http://www.fao.org/newsroom/common/ecg/1000505/en/stocks.pdf

use this website for research on your country's social structure , financial resources, history, political situation etc. ; https://www.cia.gov/library/publications/the-world-factbook/

the EU quota's on fisheries; http://ec.europa.eu/fisheries/cfp/fishing_rules/tacs/index_en.htm

the EU funding fisheries; http://ec.europa.eu/fisheries/cfp/emff/index_en.htm

this is the Wikipedia page on overfishing;
https://en.wikipedia.org/wiki/Overfishing#Government_regulation

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