

WORLD ECONOMIC FORUM

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Rebuild In Depth: Oceans

The inability to manage ocean resources stands among the greatest failures of international cooperation, particularly as oceans provide invaluable and irreplaceable services to humans, including biomass and oxygen production, climate regulation, heat storage and food security.

Agenda:

- 1) How can the Law of the Sea and other existing conventions be strengthened?
- 2) How can ocean health using transparent indices be measured?
- 3) How might fisheries be managed through a reform of subsidies and efficient market mechanisms?
- 4) How might marine biodiversity and ecosystem functions in Large Ocean Reserves be conserved?

Key Points

- The oceans represent a classic case of the failure of the commons
- The high seas are governed by the Law of the Seas Convention, negotiated in the 1970s and ratified in the 1980s; it is time to revise that treaty
- Three-quarters of commercially-valuable fish species are over-fished and/or in danger of extinction; there are efforts to eliminate subsidies that lead to over-fishing as part of the WTO negotiations
- To restore the health of the oceans, many initiatives will be needed; one that has been proven effective is the creation of reserves
- An Ocean Health Index should be devised to draw attention to degradation and track possible progress towards recovery in the future
- Given the deteriorated state of the oceans, a concerted effort must be made to save them in the next 10-20 years; for fisheries management, the timeline is even shorter
- The Gulf of Mexico oil spill can help turn the tide of public opinion

Synopsis

The oceans represent a classic case of the failure of the commons. At the same time, few would dispute their importance to the overall health of the planet. They are major contributors to oxygen production and CO₂ sequestration and are responsible for a great deal of the earth's biodiversity. They are a major source of protein. Some refer to the oceans as the operating system of the planet.

The high seas are governed by the Law of the Seas Convention, negotiated in the 1970s and ratified in the 1980s. Some countries, notably the United States, never signed the treaty. Given developments over the last four decades, most experts believe the treaty should be revised and updated.

When it comes to fishing, too many boats are chasing too few fish. Three-quarters of commercially-valuable fish species are over-fished and/or in danger of extinction. Over-fishing is also a food security issue: the way things are going, at some point there will simply be no more fish. Efforts to address this problem can be found in the World Trade Organization (WTO) negotiations, which include efforts to eliminate subsidies that lead to over-fishing. Experts believe that the WTO is the proper venue for addressing subsidies because it has enforcement powers. Another strategy would be to form a coalition to improve monitoring at ports around the globe. The number of ports where large fishing boats can dock is finite. However, assistance and incentives must be offered to poor countries to help them build the capacity and provide them with incentives to improve monitoring. Eco-labelling, already common in the US, can play a role as well. By cutting subsidies to fishers and investing in fisheries development, fewer boats could eventually bring in a greater catch, some experts believe.

To restore the health of the oceans, many initiatives will be needed. One that has been proven effective is the creation of reserves. They promote ecosystem recovery, engender growth in fish stocks that spill over beyond the borders of the reserves, and – if well placed – can generate revenues through underwater tourism. Today 1% of oceans are declared reserves. Some argue that the number should be closer to 20-25%.

An Ocean Health Index should be devised to draw attention to degradation and track possible progress towards recovery in the future. Efforts to develop this index could be combined with those to improve the World Economic Forum's Environmental Performance Index.

Given the deteriorated state of the oceans, a concerted effort must be made to save them in the next 10-20 years. In terms of fisheries management, the timeframe is even shorter, with most experts saying that tough action must be taken within the next five years. The Gulf of Mexico oil spill can help turn the tide of public opinion. It has created an environment where the “save the oceans” message is more likely to fall on fertile ground.

Discussion Leaders

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Disclosures

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Wednesday 2 June 2010

Keywords: oceans, fisheries, oceans management, Law of the Seas Convention, over-fishing, subsidies, reserves, ocean health index

Rethinking the Global Commons: Fisheries

Two-thirds of the world's fish stocks are at, or over, their limits of sustainability; yet one in four people depend on fish for their daily protein.

How can the international community collaborate to ensure the recovery of major fisheries worldwide?

Key Points

- Nations are expected to take the lead in recovering fish stocks, but appear dysfunctional to do so with weak systems of law enforcement
- Organizations can collaborate to eliminate subsidies that lead to further exploitation and decline, and enhance subsidies that help fishermen make the transition to sustainability
- Pricing of fish by the buyers and wholesalers is important to punish the wrong behaviour
- Markets give voice to consumer awareness and preferences, but they cannot work alone
- Fish can swim the distance; they are migratory and fugitive, and that requires cross-border collaboration which is necessary against the global tragedy of the commons

Synopsis

With few exceptions, the planet's fisheries are in serious trouble. Whether sharks, bluefin tuna or Patagonian toothfish, we have removed predators from the top of the food chain, putting the oceanic web of life in jeopardy. That ecological crash of fisheries carries economic risks for the US \$150 billion industry that trades in it, millions of livelihoods that depend on it, and one-fifth of the world that eats it.

Oceans suffer from a triple threat due to climate change, as the seas warm up, accumulate dissolved concentrations of carbon dioxide, and become more acidic hurting coral reefs and shellfish. But the primary cause of decline is overfishing.

Devices invented for tracking submarines are now adapted to hunting the high seas in a “war on fish” waged with spectacular success. Then national subsidies of US \$10-30 billion drive fishing fleets to harvest even more. These forces combine with the tragedy of the commons, a situation with no clear ownership or rights, so everyone races to consume the last valuable vanishing resource.

The result is devastation. Last year, FAO reported that 80% of all fisheries are now fully exploited or over-exploited. The only reason harvests have levelled off is because humans have caught all the fish they possibly can.

Even good news raises complications. The 1% of fisheries that are coming back, such as California sardines, is local and coastal, not migratory and pelagic. In the last century, the only two times when fisheries recovered on a large-scale were during the World War I and II.

Some say it is time to wage war on illegal fishing. Smuggling off the coast of Senegal undermined not just the fisheries but the legal contracts with legitimate European countries. Panellists made the case for a concerted global enforcement effort, an INTERPOL of the high seas, with the authority not only to track, but also to seize and sell confiscated illegal fishing boats to pay for more enforcement.

That approach raises issues of logistics and sovereignty. A country that cannot enforce in its own Exclusive Economic Zone offshore is helpless in other regions. Even sophisticated surveillance equipment, such as aerial drones that track and photograph smugglers, are toothless unless they can crack down when the boat comes to shore.

Coordinated trade agreements and voluntary market pressures might prove more effective. Removing subsidies saves governments money, eliminates perverse incentives and allows fisheries to heal. Individual Transferable Quotas encourage long-term conservation by fishermen because they now own a defined resource and want it to expand. Eco-labelling by the Marine Stewardship Council system now covers one-half of the whitefish harvested and two-fifths of all salmon. When endorsed by top retailers like WalMart, such labels send a market signal and give consumers and buyers new clout. By changing the dynamics, conservation pays, helping buyers who want a long-term sustainable resource.

The World Trade Organization is proving quietly effective at reconciling competing interests. Activists who once vociferously opposed it now praise it for its efforts to negotiate international regulations and enforce those through a mandate among its members.

The risk now lies in negotiating the details of what subsidies should be banned or authorized in what proportions and where. An alliance of trade and environmental

standards is a big opportunity, but works only if the same rules apply to all countries, rather than playing North against South.

Session Panellists

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Thursday 28 January

Keywords: fisheries, regulations, World Trade Organization, high seas, international law, consumer activism, eco-labelling, ownership rights, tragedy of the commons

Recommended reading for: Non-Governmental Organizations, Special Industry Sector – Fisheries, Global Agenda Councils on Ocean Governance, Climate Change, Ecosystems and Biodiversity Loss, and Food Security

Facing a Sea Change

A "Great Pacific Garbage Patch", an island about twice the size of France comprised of plastic debris and other trash, is floating in the centre of the Pacific Ocean.

How do we reverse the damage done to our oceans and build on recent successes?

Key Points

- A mass of fingernail-sized pieces of plastic floating in the Pacific Ocean is twice the size of France
- One-third of the world's fisheries have collapsed; by 2050, there will be a total collapse unless 20% of the world's oceans are afforded protected status
- Fisheries can be restored and commercial fishing enhanced by establishing marine protectorates, but this has to be done on a global scale
- Mismanagement of fisheries, and inefficient fishing methods cost US\$ 50 billion per year
- New funding models, communications strategies and governance are required to deal with conservation
- The oceans are becoming more acidic as they absorb increasing amounts of carbon dioxide

Synopsis

The oceans are being emptied of fish and filled with rubbish. Covering 75% of the surface of the planet, oceans produce 80% of the earth's oxygen, are the main source of protein for one-quarter of its population and absorb 50 times more carbon than the terrestrial ecosystem. Since the 1930s, oceans have been used as a dumping ground. In areas that have not seen the light of day for 3 billion years – 18,000 feet (5,486 metres) below the Sea of Japan – oceanographers have found drink cans and plastic bags. The Great Pacific Garbage Patch consists primarily of plastics that have broken up into small pieces. They do not degrade, but are small enough to be eaten by fish.

At current rates of extraction, the world's fisheries could be exhausted by 2050. However, if protection zones are created in time, there is rapid regeneration, with stock density increasing by 166% within three to five years. Additionally, fish stocks at the margins of the protected area also increase, so half the number of fishing vessels can harvest more fish than before the zones were set up.

This was strikingly illustrated by the success of a small project in the Philippines. A 22-hectare sanctuary created at Apo Island led to 300 other fishing communities asking for a marine sanctuary once they saw the increase in fish stocks and the benefits of diving tourism that resulted. Creating protection zones should not be seen as a philanthropic investment, but a financial one. Less than 1% of the oceans are protected. That figure has to be at least 20% to restore the balance.

Mismanagement and inefficiencies cost dearly. For every kilo of shrimp caught, 10 kilos of other marine life are caught in the trawl and thrown back into the sea. One study suggests that, if 50% of the oceans were closed to fishing and the fishing fleet reduced by 50%, the same amount of fish would still be caught.

Countering over-fishing and ocean pollution requires new approaches. The largest marine protected area in the world is the Phoenix Islands. An endowment fund was created to pay Kiribati, the owner, an annual fee for not selling fishing licences. But many more such areas are needed, with the target being one million square kilometres within five years. The scale of the problem needs to be communicated to both governments and individuals.

An Ocean Health Index to gauge the health of the oceans using simple, objective, measurable data was proposed. This would be a tool for better decision-making.

Ocean acidity is increasing as more carbon dioxide is absorbed. The change in chemistry also robs organisms like pteropods of the carbon carbonate they need for their shells. These organisms are essential members of several ocean food webs. It may be that reducing some of the stresses from the ocean, such as over-fishing, might enable the oceans to deal with a modest pH increase or increase in temperature. It remains unknown whether acidification will destroy the food chain and render all other initiatives pointless.

Aquaculture was seen as part of the future, but its inefficiencies were recognized. Instead of putting US\$ 40-50 billion into subsidizing wild fisheries, it could be used to develop natural aquaculture through establishing reserves. The static population in fish farms makes it easier for resistant parasites and diseases to flourish, and these could spread to wild populations and other species through the sea.

Session Panellists

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Saturday 30 January

Keywords: biodiversity, fisheries, oceanography, pollution, sustainability

Recommended reading for: Meeting Participants; Global Agenda Council on Ocean Governance