International Policy Concerning Marine Animals

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Appendices

Marine Governance

In June 1494, the governments of Spain and Portugal agreed to the Treaty of Tordesillas, drawing an imaginary line in the Atlantic Ocean, about 370 leagues (2,193 km) west of the Cape Verde Islands. Lands east of that line were to be claimed by Portugal, and lands to the west claimed by Spain.

The arrangement was not greeted by universal applause, assent, and compliance by other nations.

In 1609, a Dutchman, Hugo Grotius, published *The Free Sea* (*Mare Liberum*) which articulated the idea that the sea was international territory with all nations free to use it for seafaring trade.

And sixteen years later, in *On the Law of War and Peace*, Grotius elaborated the notion that nations should maintain sovereign rights to the coastal waters that they could effectively control. That later became known as the cannon shot rule, specifying control extending for 3 nautical miles from the coast, the range of 16th century artillery. The principle became articulated as terrae dominum finitur, ubi finitur armorium vis --The ownership over land ends where the force of arms ends.

In the subsequent centuries, hundreds of international treaties and conventions have been signed into agreement defining fishing boundaries and other aspects of the management of the seas, often pushing the boundaries of coastal State control further and further offshore.

UN Convention on the Law of the Sea (UNCLOS)

UNCLOS is the most comprehensive current international attempt at marine governance, with aspects governing shipping, labor, biodiversity, marine science, sea mining and fisheries.

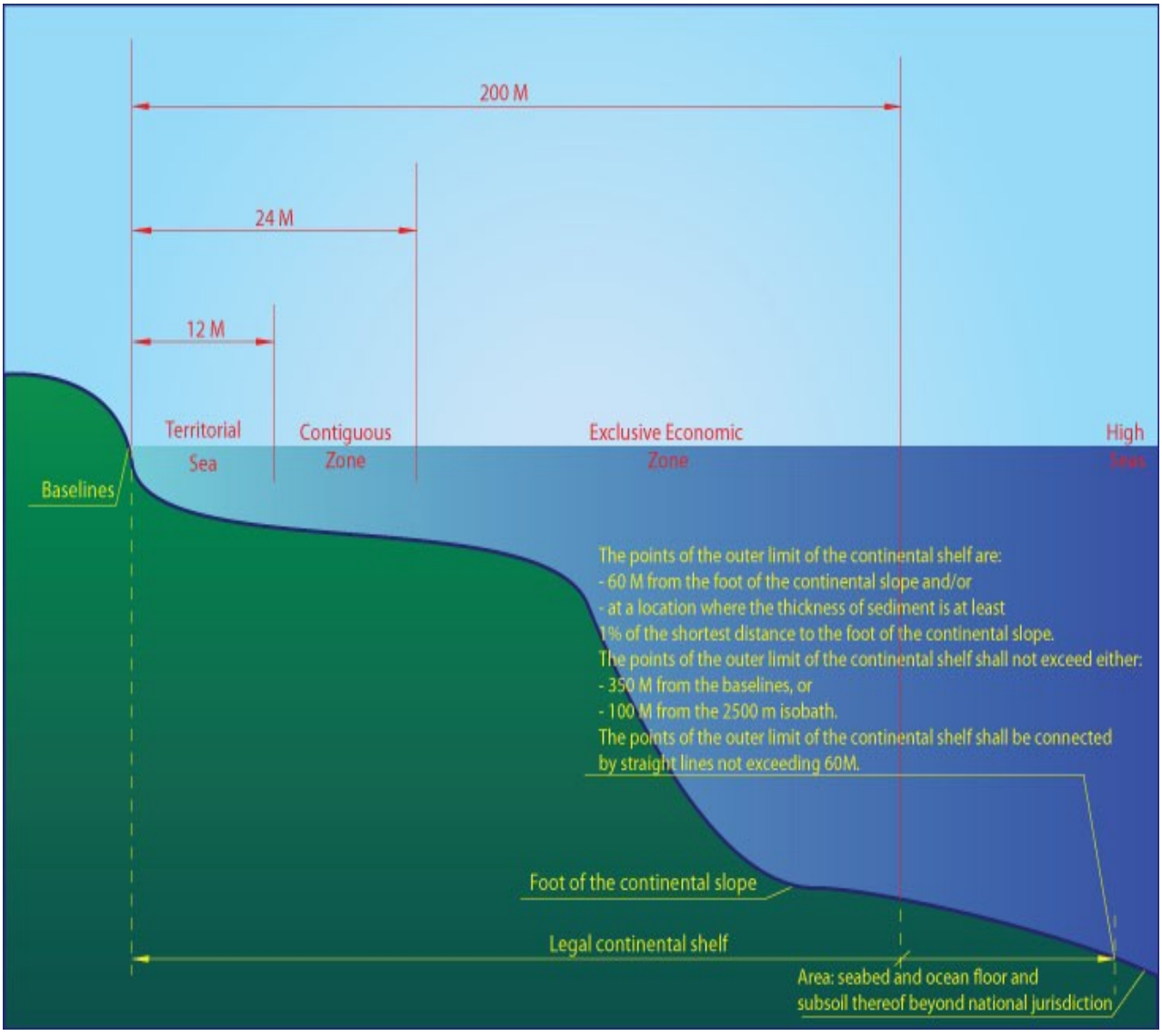
Its details were worked out during a UN Conference that lasted from 1973 to 1982. It allocates marine rights, restrictions and responsibilities to States that vary depending on the how far the relevant waters are from a baseline corresponding more or less to the State's coastline. "In localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline."

The various areas of State jurisdiction are generally distinguished as:
1) internal waters, such as ports
2) an area stretching out 12 nautical miles (n.m.) (each of those being 1852 meters or 1.15 miles) from the baseline that is considered "territorial sea" under the sovereign control of the coastal State, though with a right of "innocent passage" for vessels from other States
3) an "exclusive economic zone (EEZ)" extending an additional 188 nautical miles out beyond the territorial sea, with the coastal State having jurisdiction over natural resources and particular economic uses, but other States enjoying various of the freedoms of the high seas
4) the continental shelf, the part of the continent submerged under relatively shallow waters, including the seabed and subsoil, that may extend further beyond the limits of the EEZ but

whose minimum and maximum distance from the baseline are artificially delimited within UNCLOS. The minimum distance corresponds with the 200 n.m distance from baseline of the EEZ and the maximum can be set in any of several ways, such as 350 n.m. from the baseline or 100 n.m. from the point at which the water depth becomes 2500 meters.

In many instances, such as when two States are adjacent, or are on opposite sides of a sea with less than 400 nautical miles separating them, precise boundaries need further negotiation… and may remain subject to prolonged dispute. Thus far, no country has asserted an exclusive economic zone (EEZ) claim in the Mediterranean Sea, and consequently most of its waters are considered area beyond national jurisdiction (ABNJ).

The areas beyond national jurisdiction are commonly referred to as the “high seas” and UNCLOS provides a framework governing use of that area, one that derives from traditional principles of freedom of the high seas.



https://www.un.org/Depts/los/clcs_new/marinezones.jpg

While, as of 2021, the European Union and 167 States had ratified UNCLOS, and 14 others signed, but not yet ratified it, the United States is an exception. Presidents Clinton, Bush and Obama all urged acceptance, but the U.S. Senate has not yet voted to ratify. Meanwhile, U.S. policy has been to, nevertheless, act in a manner consistent with UNCLOS requirements.

While every State has rights to fish the high seas, those rights may be restricted by treaty obligations, and rights to fish in other nations' EEZs are limited by the coastal State's obligations to manage and conserve fisheries within their jurisdiction.

Article 61 of UNCLOS requires the coastal State to determine the allowable catch of the living resources in its exclusive economic zone and then to ensure through proper conservation and management measures that "the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation. As appropriate, the coastal State and competent international organizations, whether subregional, regional or global, shall cooperate to this end."

Such measures must be designed to maintain or restore populations of harvested species at levels "which can produce the maximum sustainable yield." while also taking into consideration the "effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened."
[…]
"The coastal State shall determine its capacity to harvest the living resources of the exclusive economic zone. Where the coastal State does not have the capacity to harvest the entire allowable catch, it shall, through agreements or other arrangements... give other States access to the surplus of the allowable catch."

Nationals of other States fishing in the exclusive economic zone must comply with the conservation measures and with the other terms and conditions established in the laws and regulations of the coastal State.

These laws and regulations imposed by the coastal State may relate to such matters as a) licensing of fishermen and vessels, b) quotas of catch c) seasons and areas of fishing, d) type, size and amount of gear and type size and number of vessels allowed, e) information required of fishing vessels including catch size and location f) age and size of fish that may be caught and g) the placing of observers or trainees by the coastal State on board vessels.

Where fish stocks occur within the EEZ of two or more coastal States or both within an EEZ and also beyond, in the high seas, States are obliged to, either directly or through appropriate subregional or regional organizations, agree on measures to ensure the conservation and development of such stocks.

Additional requirements for cooperation apply where there is fishing for highly migratory species, cooperation between the coastal State and other States whose nationals fish in the region to ensure "conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the exclusive economic zone".

Similarly, under UNCLOS, provision is made for conservation by States where anadromous species originate, fish such as salmon that migrate from the sea up rivers to spawn, and catadromous species, such as eels, that migrate from fresh water out to sea to spawn.

In respect to marine mammals there are no restrictions on the right of a coastal State or competent international organization, as appropriate, “to prohibit, limit or regulate the exploitation of marine mammals more strictly.”

To enforce UNCLOS provisions, the coastal State may, “in the exercise of its sovereign rights to explore, exploit, conserve and manage the living resources in the exclusive economic zone, take such measures, including boarding, inspection, arrest and judicial proceedings, as may be necessary to ensure compliance with the laws and regulations adopted by it in conformity with this Convention.”

The International Tribunal for the Law of the Sea

Hamburg, Germany
The Tribunal was established by UNCLOS as an independent judicial body to adjudicate disputes arising out of the interpretation and application of the Convention. It has 21 independent elected members.."

UN Straddling Fish Stocks Agreement

New York City, USA
According to the UN Division for Ocean Affairs and the Law of the Sea, “The Agreement elaborates on the fundamental principle, established in the Convention, that States should cooperate to ensure conservation and promote the objective of the optimum utilization of fisheries resources both within and beyond the exclusive economic zone.

“The Agreement attempts to achieve this objective by providing a framework for cooperation in the conservation and management of those resources. It promotes good order in the oceans through the effective management and conservation of high seas resources by establishing, among other things, detailed minimum international standards for the conservation and management of straddling fish stocks and highly migratory fish stocks; ensuring that measures taken for the conservation and management of those stocks in areas under national jurisdiction and in the adjacent high seas are compatible and coherent; ensuring that there are effective mechanisms for compliance and enforcement of those measures on the high seas…”

The Agreement went into effect in late 2001. As of 20 years later, 90 states and the European Union were parties to the Agreement through ratification or accession.

Provisions of Article 6 include:
1. States shall apply the precautionary approach widely to conservation, management and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment.
[..]

7. If a natural phenomenon has a significant adverse impact on the status of straddling fish stocks or highly migratory fish stocks, States shall adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impact.

According to the FAO, “The Agreement also spells out the duties of flag States including those related to registration and records of vessels, authorisations, MCS and compliance and enforcement. Cooperation in international, regional and sub-regional enforcement is also addressed, along with boarding and inspection procedures and port State measures.” The text of the Straddling Fish Stocks Agreement is available via the UN web site.

United Nations General Assembly

New York City, USA
The United Nations General Assembly has contributed directly to the body of international fisheries law through Resolutions.

For example, UNGA Res. 46/215 (1991) called on all members of the international community to "Ensure that a global moratorium on all large-scale pelagic drift-net fishing is fully implemented on the high seas of the world's oceans and seas, including enclosed seas and semi-enclosed seas, by 31 December 1992".

While UNGA Res. 61/105 (2006) paras 80-89 called on regional fisheries management organizations and arrangements to take measures including:
"In respect of areas where vulnerable marine ecosystems, including seamounts, hydrothermal vents and cold water corals, are known to occur or are likely to occur based on the best available scientific information, to close such areas to bottom fishing and ensure that such activities do not proceed unless conservation and management measures have been established to prevent significant adverse impacts on vulnerable marine ecosystems"

The resolution concurrently called upon flag States to cease to authorize fishing vessels flying their flag to conduct bottom fisheries in areas beyond national jurisdiction where there is no regional fisheries management organization or arrangement with the competence to regulate such fisheries and no other conservation and management measures implemented to effectively protect such ecosystems.

The measures that have subsequently been taken to protect vulnerable marine ecosystems (VME), such as seamounts, are commonly criticized as insufficient. Seamounts are fully underseas mountains formed by volcanic activity that are now recognized as biological hotspots that support a dazzling array of marine life.

According to Dr. Les Watling, a professor in the Department of Biology at the University of Hawaii: *“*As part of the management of high seas bottom fisheries, when VME indicator species are encountered the vessel must stop fishing and move some distance away from where the encounter occurred. This is referred to as the ‘move-on rule.’ The problem, of course, is how to define an ‘encounter,’ and then how to decide how far the vessel should move.”

And the current standard method for identifying an encounter with indicator species has been criticized as inadequate. According to Watling, trawling on the Louisville Seamounts resulted in only 4 qualifying VME encounters in 255 trawl tows. While all seamounts there that have so far been surveyed by cameras “have been found to have abundant VME indicator species distributed on their sides and summits… the distribution of VME species is far more extensive than trawl data would suggest.”

In compliance with rules of the South Pacific Regional Fisheries Management Organization (SPRFMO), Watling indicated, a recorded encounter with a VME species would require the vessel to move 5 km away from the site of encounter and if a fishing vessel were “required to survey an area where it wanted to trawl with a camera rather than wait to see what comes up in the net, there would be nowhere on the seamount where trawling could occur.”

“The only rational decision, then,” Watling continued, “would be to stop worrying about VME indicator species, encounter and move-on rules, and accept the fact that seamounts are, in the language of United Nations General Assembly resolution 61/105, Vulnerable Marine Ecosystems. They are islands of biodiversity in an otherwise depauperate ocean, they are home to dozens of fragile and long-lived species who can easily be wiped out by the indiscriminate and heavy trawl gear. As true VMEs, they should be off-limits to bottom tending fishing gear and should be protected for all time from other forms of human disturbance, including the mining of crusts from some old seamounts.”

Pursuant to paragraph 364 of General Assembly resolution 74/19, the UN Secretary General published a 2020 report on oceans and the law of the sea, one of a series of such reports issued annually. It focused considerably on the impacts of COVID-19. For example: “Reduced human activities had positive impacts on certain marine species and ecosystems; however, the relocation of persons and increasing subsistence and artisanal fishing in coastal and nearshore areas placed additional pressures on vulnerable fish stocks. Concerns were reported in relation to the negative consequences of COVID-19 on the management of fish stocks and potential increases in illegal, unreported and unregulated fishing owing to reduced monitoring, control and surveillance activities. An increase in medical, hazardous and plastic waste stemming from COVID-19 and associated sanitary situations and lockdowns, together with reduced recycling, may have potential negative health and environmental impacts.”
[…]
“The inability of vessel operators to change crews as a result of COVID-19, leading to extended periods on board, was particularly problematic. Seafarers and fishers have faced unilateral or unlawful extensions of tours of duty, prolonged confinement on board ships ordered to anchorage or remote berths and unilateral termination of contracts, with some unable to leave their ships, be repatriated or seek urgent medical assistance owing to travel restrictions. Incidences of seafarer abandonment continued to occur, with some measures adopted in response to COVID-19 creating additional challenges for the resolution of abandonment cases and potentially leading to new ones.”
[…]
“Of the four ocean-related [SDG] targets maturing in 2020, only one, regarding coverage of protected areas (target 14.5), seemed within reach. Insufficient progress on other targets was also reported”
[…]

“With land-based activities representing about 80 per cent of the sources of marine pollution, cooperation continued to prevent, reduce and control such pollution, in particular marine debris, plastics and microplastics, including through the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities. Amendments to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal entered into force, clarifying the scope of covered plastic wastes. The Basel Convention Partnership on Plastic Waste was also launched.”

In 1999, the General Assembly, via resolution 54/33, had established the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea in order to facilitate its annual review of developments in ocean affairs and the law of the sea with emphasis on identifying areas where international cooperation should be enhanced. That includes annual meetings with deliberations on the Secretary General’s report as well as a particular area of topical focus, with presentations by a discussion panel. Some examples:
2021 Sea-level rise and its impacts (June 14-18)
2019 The United Nations Decade of Ocean Science for Sustainable Development
2018: Anthropogenic underwater noise"
2017: The effects of climate change on oceans"
2016: Marine debris, plastics and micro-plastics"
2013:The impacts of ocean acidification on the marine environment
2004: New Sustainable Uses of the Oceans, including the Conservation and Management of the Biological Diversity of the Seabed in Areas beyond National Jurisdiction

The UN maintains a listing of the meetings that have been held since the first in 2000 as well as a Composite streamlined list of issues that could benefit from attention in the future work of the General Assembly on oceans and the law of the sea.

In May, 2018, the General Assembly adopted Resolution 72/277 Towards a Global Pact for the Environment, which established an ad hoc working group (AHWG) to consider a report that would be submitted by the UN Secretary General concerning gaps in international environmental law (that report was published in November 2018, including several pages on protection of oceans and seas). The AHWG would then consider options for addressing the identified, gaps and it was anticipated that its recommendations might include convening an intergovernmental conference that could adopt a new international legal instrument.

Decade of Ocean Science for Sustainable Development (2021-2030)

In 2017, the UN proclaimed a Decade of Ocean Science for Sustainable Development (2021-2030) to "support efforts to reverse the cycle of decline in ocean health and gather ocean stakeholders worldwide behind a common framework that will ensure ocean science can fully support countries in creating improved conditions for sustainable development of the Ocean". The Intergovernmental Oceanographic Commission (IOC) of UNESCO coordinated the Decade’s preparatory process. The Ocean Decade Alliance (‘the Alliance’) was created to develop financial and other resources to support the effort.

A 2021 publication was The Transformative Role of Foundations in the Ocean Decade.

International Seabed Authority (ISA)

Kingston, Jamaica
UNCLOS declared the deep seabed beyond national jurisdiction and its mineral resources to be the "common heritage of mankind" while giving ISA the mandate to manage its mineral resources.

There has been rapidly growing commercial interest in deep-sea mining and on March 28, 2019, ISA issued draft regulations on exploitation of the mineral resources in the international seabed area developed by its Legal and Technical Commission, a 30-member expert advisory body and stated: “The new draft exploitation regulations will build on the exploration regulations already in place by ensuring adherence to robust environmental standards, including baseline studies, environmental impact assessments, environmental monitoring and management.”

As the draft regulations were being considered in July 2019 as part of ISA's 25th Annual Session, according to ENB: “some were worried about what they viewed as the deafening voice of contractors throughout the draft regulations. ‘We acknowledge their role in the process, but their considerations seem to be stifling environmental concerns,’ one delegate observed, highlighting, however, that ‘so many interventions during this meeting, related to ensuring environmental precautions, are inserted into the existing text.’”

The first meetings of the 26th Session were held in February 2020, continuing discussion of the drafts, with completion of the 26th Session repeatedly postponed due to COVID-19 and then scheduled for July 2021 in Kingston. ISA had sought consultations to be submitted by October 2020 on its further revisions.

In its 2019 Report, 30x30: A Blueprint for Ocean Protection, Greenpeace identified as potential adverse impacts of deepsea mining:

- Direct removal of seafloor habitat and organisms
- Alteration of substrate and its geochemistry
- Modification of sedimentation rates and food webs
- Creation of changes in substrate availability, heterogeneity and flow regimes
- Release of suspended sediment plumes
- Release of toxins and contamination from extraction and removal processes
- Noise pollution
- Light pollution
- Chemical leakage from mining machinery

and continued by asserting that a recent scientific analysis (Deep-Sea Mining with No Net Loss of Biodiversity – An Impossible Aim) demonstrates that biodiversity loss from DSM will be unavoidable.

In 2018, 50 NGOs had jointly signed an appeal to ISA expressing deep concern about the potentially irreversible losses of biodiversity likely to result from deep-sea mining and calling on it:

- to amend the mission contained in its Strategic Plan so that the obligation for any activities in the Area to ensure effective protection for the marine environment from harmful effects is the fundamental objective of the ISA;
- to act on civil societies' requests for fundamental reforms of the ISA operations, including among others the establishment of an Environment Committee, the opening up of the Legal and Technical Committee for observers, and public access to data and information;
- to establish a process to investigate comprehensively and in a participatory and science-based manner the fundamental questions about the need for deep seabed mining and its long term consequences for the planet and humankind, ensuring that more sustainable alternatives are fully assessed and fed into the debate in an open and transparent manner;
- in the meantime, to end the granting of contracts for deep-sea mining exploration and to not issue contracts for exploitation.

ISA Secretary-General Mr. Michael W. Lodge has provided a useful history of ISA and its origins in this recording: *The Legal Regime for the Deep Seabed under Part XI of the United Nations Convention on the Law of the Sea*.

The Deep Sea Conservation Coalition (DSCC)

Amsterdam, The Netherlands
The Deep Sea Conservation Coalition (DSCC) is a coalition of over 70 non-governmental organisations concerned with protection of the deep sea that has been an observer organisation to the ISA since 2014. It cites its two overarching goals as being:

- To substantially reduce the greatest threats to life in the deep seas; and
- To safeguard the long-term health, integrity and resilience of deep-sea ecosystems.

DSCC opposes deep-sea mining until there are effective regulations in place ensuring that that marine habitats, biodiversity and ecosystem functions are effectively protected, including establishment of a network of marine protected areas and reserves.

International Coral Reef Initiative (ICRI)

Monaco, Australia, Indonesia
The International Coral Reef Initiative (ICRI) is an informal partnership between Nations and organizations which strives to preserve coral reefs and related ecosystems around the world. Although the Initiative is an informal group whose decisions are not binding on its members, it has been influential in highlighting the importance of coral reefs and related ecosystems.

ICRI adopted a Call to Action and a Framework for Action as its foundational documents and at its 2013 General Meeting adopted *Continuing Call to Action and Framework for Action 2013.*

Code of Conduct for Responsible Fisheries

Rome, Italy
The FAO Code of Conduct for Responsible Fisheries was adopted in 1995 as a voluntary instrument, its purpose being "to set international standards of behaviour for responsible

practices with a view to ensuring the effective conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity."

It articulates nineteen general principles, which include:
"6.3 States should prevent overfishing and excess fishing capacity and should implement management measures to ensure that fishing effort is commensurate with the productive capacity of the fishery resources and their sustainable utilization. States should take measures to rehabilitate populations as far as possible and when appropriate.
[...]
"6.6 Selective and environmentally safe fishing gear and practices should be further developed and applied, to the extent practicable, in order to maintain biodiversity and to conserve the population structure and aquatic ecosystems and protect fish quality. Where proper selective and environmentally safe fishing gear and practices exist, they should be recognized and accorded a priority in establishing conservation and management measures for fisheries. States and users of aquatic ecosystems should minimize waste, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species.
[…]
"6.11 States authorizing fishing and fishing support vessels to fly their flags should exercise effective control over those vessels so as to ensure the proper application of this Code. They should ensure that the activities of such vessels do not undermine the effectiveness of conservation and management measures taken in accordance with international law and adopted at the national, subregional, regional or global levels."

And these are among the items in Article 11, which addresses "Post-Harvest Practices and Trade":
"11.1.4 States should cooperate to achieve harmonization, or mutual recognition, or both, of national sanitary measures and certification programmes as appropriate and explore possibilities for the establishment of mutually recognized control and certification agencies."
and
"11.2.4 Fish trade measures adopted by States to protect human or animal life or health, the interests of consumers or the environment, should not be discriminatory and should be in accordance with internationally agreed trade rules, in particular the principles, rights and obligations established in the Agreement on the Application of Sanitary and Phytosanitary Measures and the Agreement on Technical Barriers to Trade of the WTO."
Text of the Code: http://www.fao.org/3/a-v9878e.htm

The Code addresses both marine capture fisheries and aquaculture development. In 2006, a Research Report of the Fisheries Centre of the University of British Columbia, Canada in partnership with WWF assessed how 53 FAO member countries representing over 96% of the reported world fish catch were performing in respect to implementing the Code's Article 7 on Fishery Management, relying on results achieved by posing 44 evaluation questions.

According to authors of the Report, in a Commentary published in *Nature,* "Overall, compliance is poor, with room for improvement at every level in the rankings (Fig. 1). Not one country achieves a score in the good category and the average of all countries' ratings barely exceeds the fail threshold... Overall, the five questions on which countries scored worst

concerned introducing ecosystem-based management, controlling illegal fishing, reducing excess fishing capacity and minimizing bycatch and destructive fishing practices “

International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU)

Rome, Italy
The IPOA-IUU was elaborated within the framework of the Code of Conduct for Responsible Fisheries and adopted by FAO’s Committee on Fisheries in 2001.

According to its Abstract:
“The IPOA-IUU is a voluntary instrument that applies to all States and entities and to all fishers. Following the IPOA's introduction, the nature and scope of IUU fishing is addressed. This is followed by the IPOA's objective and principles and the implementation of measures to prevent, deter and eliminate IUU fishing. These measures focus on all State responsibilities, flag State responsibilities, coastal State measures, port State measures, internationally agreed market-related measures, research and regional fisheries management organizations. Special requirements of developing countries are then considered, followed by reporting requirements and the role of FAO.”

Agreement on Port State Measures (PSMA)

Rome, Italy
Twenty percent of all fish caught world-wide each year are believed to derive from illegal, unreported and unregulated (IUU) fishing and the Agreement on Port State Measures (PSMA) was the first binding international agreement to specifically target IUU fishing. Its provisions apply to fishing vessels seeking entry into foreign ports – ports of a State other than their flag State. According to the FAO Director General’s Foreword:
“The Agreement lays down a minimum set of standard measures for port States to apply when foreign vessels seek entry into their ports or while they are in their ports. Through the implementation of defined procedures to verify that such vessels have not engaged in IUU fishing and other inspection and enforcement measures, fish caught from IUU fishing activities could be blocked from reaching national and international markets, thereby reducing the incentive for perpetrators to continue to operate. “

International Maritime Organization (IMO)

London, UK
IMO – the International Maritime Organization – is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.

IMO's Marine Environment Protection Committee (MEPC) aims to prevent or minimize pollution from oil, chemicals carried in bulk, sewage, garbage and emissions from ships, including air pollutants and greenhouse gas emissions. It has developed voluntary guidelines in respect to abatement of underwater noise deriving from ship traffic.

Since 1987 the IMO, in order to enhance maritime safety, pollution prevention and the prevention of maritime fraud has assigned to each ship a permanent identification number,

one that is expected to remain affixed to the hull for its lifetime, regardless of changes of names, flags, or owners.

Cape Town Agreement

c/o IMO, London UK
According to the Pew Charitable Trusts, which operates an “Ending Illegal Fishing Project”: (https://www.pewtrusts.org/en/projects/ending-illegal-fishing-project),
“The 2012 Cape Town Agreement, adopted by the International Maritime Organization (IMO), outlines design, construction, and equipment standards for fishing vessels of 24 meters or more in length and details regulations that countries that are party to the agreement must adopt to protect fishing crews and observers. It also calls for harmonized fisheries, labor, and safety inspections.

“The agreement will enter into force once 22 States, with an aggregate fleet of 3,600 eligible fishing vessels, become parties to it. Its implementation will complement existing treaties, like the Port State Measures Agreement, and could serve as a vehicle for mandating IMO numbers and automatic identification systems on fishing vessels. These measures would enable States to accurately identify and track vessels, improving transparency and providing a means to assess vessel safety and crew welfare.

“Putting these elements in place will make it easier for countries to deter IUU fishing, identify and investigate fishers who operate illegally, and help ensure that crews have safe and decent working conditions.”
https://www.pewtrusts.org/en/research-and-analysis/articles/2018/05/the-cape-town-agreement

According to the International Maritime Organization (IMO): “The work being done to promote the implementation of the Cape Town Agreement on the safety of fishing vessels and other activities to improve safety and sustainability in the fishing sector and fight IUU fishing is also being supported by international governmental and non-governmental organizations. These include the General Fisheries Commission for the Mediterranean (GFCM), the North East Atlantic Fisheries Commission (NEAFC), the Organisation for Economic Co-operation and Development (OECD), the Institute of Marine Engineering, Science and Technology (IMarEST), the International Transport Workers Federation (ITF), the Pew Charitable Trusts, the World Animal Protection and the World Wide Fund for Nature (WWF).”
http://www.imo.org/en/MediaCentre/PressBriefings/Pages/27-Cape-Town-Agreement-.aspx

As of February 2021, the only countries that had thus far become parties to the agreement were: Belgium, Congo, Cook Islands, Denmark, Finland, France, Germany, Iceland, Netherlands, Norway, Saint Kitts and Nevis, Sao Tome and Principe, South Africa, and Spain. 48 States had originally signed the Torremolinos Declaration, publicly indicating their determination to ratify the Agreement by the target date of 11 October 2022.

The IMO has published, as explanatory material: 2012 Cape Town Agreement (Made Simple).

Joint FAO/IMO ad hoc Working Group on IUU fishing

Representatives of the International Maritime Organization (IMO) and FAO have been meeting regularly in a Joint FAO/IMO ad hoc Working Group on IUU fishing since it was established in 2000.

The report of its most recent meeting, in 2015, included items presented for consideration such as:

- a proposal by the U.S. delegation “to explore the possibility of expanding the use of the IMO number to all fishing vessels operating outside waters under national jurisdiction.”
- a suggestion by WWF and the Institute for Fishing and Marine Sciences (IHSM) “to extend the IMO number to all decked, motorized inboard fishing vessels of any hull-type construction of over 12 metres LOA, with a current valid authorization on an RFMO vessel list”
- notification that the International Labour Organization (ILO) “makes reference to the IMO number for fishing vessels in its Guidelines on flag State inspection of working and living conditions on board fishing vessels, and that the legislation of various States and the recommendations of a number of RFMOs have been updated to make the IMO number compulsory for certain categories of vessels.”

Convention on Migratory Species of Wild Animals (CMS)

Bonn, Germany
With, now, over 120 parties, the Convention on Migratory Species, which is under the auspices of the United Nations Environment Programme, starts as follows:
The Contracting Parties,
“RECOGNIZING that wild animals in their innumerable forms are an irreplaceable part of the Earth's natural system which must be conserved for the good of mankind;
“AWARE that each generation of man holds the resources of the earth for future generations and has an obligation to ensure that this legacy is conserved and, where utilized, is used wisely;
“CONSCIOUS of the ever-growing value of wild animals from environmental, ecological, genetic, scientific, aesthetic, recreational, cultural, educational, social and economic points of view;
“CONCERNED particularly with those species of wild animals that migrate across or outside national jurisdictional boundaries;
“RECOGNIZING that the States are and must be the protectors of the migratory species of wild animals that live within or pass through their national jurisdictional boundaries;
“CONVINCED that conservation and effective management of migratory species of wild animals require the concerted action of all States within the national jurisdictional boundaries of which such species spend any part of their life cycle;”
CMS is considered a framework convention, a “legally binding treaty which establishes broader commitments for its parties and leaves the setting of specific targets either to subsequent more detailed agreements (usually called protocols) or to national legislation. In essence, a framework agreement serves as an umbrella document which lays down the principles, objectives and the rules of governance of the treaty regime.
https://www.unece.org/fileadmin/DAM/hlm/sessions/docs2011/informal.notice.5.pdf

Legally binding agreements that have been developed pursuant to CMS include:

- Cetaceans of the Mediterranean Sea, Black Sea and Contiguous Atlantic Area (ACCOBAMS)
- Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS)
- Seals in the Wadden Sea (Wadden Sea Agreement)
- African-Eurasian Migratory Waterbirds (AEWA)
- Albatrosses and Petrels (ACAP)

and additional Memorandums of Understanding have, for example, aimed to conserve:

- Marine Turtles of the Indian Ocean and South-East Asia (IOSEA) MoU
- Mediterranean Monk Seal MoU
- Pacific Islands Cetaceans MoU
- Ruddy-headed Goose MoU
- Migratory Sharks MoU
- Western African Aquatic Mammals MoU (Small Cetaceans and Manatees)
- Marine Turtles of the Atlantic Coast of Africa MoU

The Convention on Biological Diversity (CBD)

Montreal, Canada

The Convention on Biological Diversity became effective in 1993, and has 196 parties. Its intent is specified in Article 1:

“The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.“

The principal role of the Montreal-based CBD Secretariat is to prepare for, and service, meetings of the Conferences of the Parties (COP) and other subsidiary bodies of the Convention, and to coordinate with relevant international bodies.

According to World Ocean Review: “The difficulty surrounding implementation of this convention is that the CBD is viewed as a framework agreement with general objectives... In accordance with the CBD, signatory States and groups of States like the EU have to enshrine the CBD goals in their respective legislation. However, the convention lacks clear criteria, limit values, sanction measures or deadlines. The upshot of all this is that so far many nations have no comprehensive strategies for the protection of biodiversity – either on land or in the ocean.”

The CBD in 2004 had committed to the establishment of a global network of marine protected areas by 2012 and reaffirmed its support in 2010 by agreeing to the "Aichi targets" which included calling for 10 per cent of coastal and marine areas to be conserved by 2020 through "well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape."

United Nations Environment Programme (UNEP) (aka UN Environment)

Nairobi, Kenya

The 1972 United Nations Conference on the Human Environment led to the creation of UNEP "to serve as a focal point for environmental action and coordination within the United Nations system." UNEP is the leading global environmental authority setting the international environmental agenda and promoting the coherent implementation of the environmental dimension of sustainable development within the United Nations system. Since its initial session, the UNEP has made the oceans a priority action area, with principal focus areas now including:

Regional Seas Programmes

UNEP established its Regional Seas Programme in 1974 in order to promote regional cooperation to address marine pollution. As of 2021, there are 18 Regional Seas Programmes (RSPs) each covering a particular geographic area, 14 of which were established by UNEP and 4 independently. Of the former 14, half are directly administered by UNEP and the others are now administered by other regional organizations. About 150 States participate.

The Regional Seas Programme operates within UNEP's Marine Ecosystems Branch in the Division of Environmental Policy Implementation at UNEP's Nairobi Headquarters and there are also Regional Coordinating Units (RCUs) and Regional Activity Centers (RACs) local to the regions.

Each RSP has an action plan. Some have adopted measures such as framework conventions that are legally binding for their participating States. While the initial focus was more narrowly on pollution monitoring and remediation, there has been movement towards integrated ecosystem management. UNEP's 2011 publication *Taking Steps toward Marine and Coastal Ecosystem-Based Management, An Introductory Guide* continues to serve as a resource in that regard.

More recently, in 2016, UNEP published *Regional Oceans Governance Making Regional Seas Programmes, Regional Fishery Bodies and Large Marine Ecosystem Mechanisms Work Better Together*. The objectives of that publication are to provide a review of existing regional oceans governance mechanisms intended to "assist states that participate in such mechanisms, as well as those that considering participating, by clarifying the key distinctions between the mandates of these mechanisms, highlighting their successes and the challenges they face, and outlining cooperation between them. Furthermore, options are identified for strengthening existing mechanisms and cooperation between them, as well as for the creation of new regional oceans governance mechanisms, with particular reference to the ecosystem approach."

Other programmes central to UNEP's work on oceans include:

Protecting coral reefs

UNEP works to protect coral reefs in collaboration with a wide variety of stakeholders, including the International Coral Reef Initiative, the Global Coral Reef Monitoring Network and the Regional Seas Programmes, supporting a variety of ongoing projects.

Promoting Marine Protected Areas
According to UNEP, “We cannot survive without healthy oceans. Yet, they have been under too much stress, from too many human activities, for too many years. Overfishing, resource extraction, tourism, recreation, coastal development and pollution are damaging habitats and reducing populations of marine species at a frightening rate.”

"UN Environment assists countries in approving the effectiveness and equitable use of marine protected areas by providing technical expertise and capacity building support on governance of marine protected areas, and their use within wider integrated ocean and coastal management systems."

Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
UNEP estimates that about 80 per cent of marine pollution originates on land and in Nairobi hosts the secretariat for the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities which, since 2012, has been focused on “establishing and strengthening voluntary multi stakeholder partnerships on nutrient pollution, marine litter and wastewater”.
The GPA programme is focusing its efforts on three source categories, with a global multi-stakeholder partnerships created for each.

- Global partnership on nutrient management
- Global partnership on marine litter
- Global wastewater initiative

Every five years, an Intergovernmental Review Meeting (IGR) is convened to review GPA status and decide how best to advance its implementation.

UNEP Clean Seas Campaign
Initiated in 2017, the Clean Seas campaign works with governments, businesses and citizens to “eliminate the needless use of disposable plastics and protect our oceans and rivers from a toxic tide of pollution that is endangering livelihoods and killing wildlife”.

The campaign encourages “governments to pass plastic reduction policies; targets industry to minimize plastic packaging and redesign products; and calls on consumers to change their throwaway habits before irreversible damage is done to our seas”. The alliance now covers more than 60 per cent of the world’s coastlines with 60 countries committed to participate.

Because the Ocean
At the Rio Earth Summit in 1992, the Rio Convention adopted the UN Framework on Climate Change (UNFCCC) aiming to avoid dangerous anthropogenic interference with the climate system. There is an annual Conference of Parties (COP) to review the Convention’s implementation. At COP21, also known as the 2015 Paris Climate Conference, the Because the Ocean Initiative was launched by 23 countries that all supported development of a Special Report on the Ocean by the Intergovernmental Panel of experts on Climate Change (IPCC) and the convening of a high-level UN Ocean conference in support of the implementation of Sustainable Development Goal (SDG) 14, which focuses on the ocean, and also promoted an

Ocean Action Plan within the UN Framework Convention on Climate Change. In the subsequent years, and with 39 signatories as of 2021, the Initiative has encouraged the inclusion of ocean action into Nationally Determined Contributions (NDCs) under the Paris Agreement.

The IISD Reporting Service has described the April 2019 Technical Workshop "Before the Blue COP" that was organized by Because the Ocean, and featured sessions on the state of knowledge concerning climate and ocean change; synergies and gaps in climate and ocean actions; and national perspectives on the ocean-climate nexus.

In October 2019, Because the Ocean released: Ocean For Climate: Ocean-Related Measures in Climate Strategies (Nationally Determined Contributions, National Adaptation Plans, Adaptation Communications, and National Policy Frameworks). It discussed:

1. encouraging natural carbon sequestration by coastal ecosystems;
2. developing a range of sustainable ocean-based renewable energy solutions;
3. promoting adaptation and resilience solutions for vulnerable populations, ecosystems and ecosystem services threatened by climate change;
4. implementing hybrid solutions supporting both adaptation and mitigation in the fisheries and aquaculture sector; and
5. solutions in the shipping sector.

In January 2021, Because the Ocean co-sponsored the Ocean-Climate Ambition Summit together with the UN Foundation, Ocean Conservancy, the Ocean & Climate Platform, NRDC, the Pew Charitable Trusts, EDF, RARE, the Blue Carbon initiative, Conservation international, and the IUCN. Recordings of the two days of sessions are available online.

International Convention for the Regulation of Whaling (ICRW)

The ICRW, which was signed in 1946, is focused on the conservation and management of large whales. It includes a legally binding Schedule that sets out catch limits for commercial and aboriginal subsistence whaling, a schedule that is periodically amended, typically at the biennial meetings of the International Whaling Commission (IWC) which was established by the Convention and has a membership of 88 governments.

According to the IWC, the decision was made in 1982 that there should be “a pause in commercial whaling on all whale species and populations (known as 'whale stocks') from the 1985/1986 season onwards. This pause is often referred to as the commercial whaling moratorium, and it remains in place today.” However a small number of nations registered an objection or reservation and continued some commercial whaling. A count of their catch since 1985 can be found at the IWC web site.

In December 2018, Japan confirmed that it would withdraw from the IWC as of June 30, 2019, and resume commercial whaling. It had been doing a more limited amount of whaling that it classified as research.

According to the IWC, while it’s mandate remains unchanged as the regulation of whaling and conservation of whale stocks, what has changed are the threats to whale stocks: “Today,

bycatch and entanglement are widely considered to be the biggest threats to cetacean populations and welfare. Whales must also contend with ship strikes, ocean noise, marine debris, chemical pollution and of course, climate change. These threats were largely non-existent when the IWC was formed."

Intergovernmental Conference on Marine Biodiversity of Areas Beyond National Jurisdiction

The United Nations General Assembly has convened an Intergovernmental Conference to develop an international legally binding instrument (ILBI) under UNCLOS on the conservation and sustainable use of marine biodiversity of areas beyond national jurisdiction (BBNJ). The IGC was scheduled to meet in four sessions, with the first in 2018, two in 2019 and the fourth in 2020, but that fourth session was postponed indefinitely.

As summarized by Greenpeace:
"Issues for negotiation include the need for comprehensive environmental impact assessments for activities on the high seas, capacity building for management and conservation, the international sharing of benefits from marine genetic resources and the use of area-based management tools, including marine protected areas (MPAs). With regard to the latter, in its deliberations the UN Intergovernmental Conference must consider how to develop mechanisms for conservation that enable the world to meet international obligations under UNCLOS to protect wildlife of the high seas and deep sea. It must also create a mechanism to fill a gaping hole in the provisions of the UN Convention on Biological Diversity (CBD). The CBD is intended to protect the world's wildlife but can only be applied by nations in their own territories or on vessels carrying their flag. That leaves nearly half of the surface of Earth virtually unprotected… A successful outcome of negotiations at the UN Intergovernmental Conference is essential for the designation, effective management and enforcement of a network of high seas protected areas."

Regional Fisheries Management Organizations (RFMOs)

Part III of the of the UN Straddling Fish Stocks Agreement is titled: "Mechanisms for International Cooperation Concerning Straddling Fish Stocks and Highly Migratory Fish Stocks". It principally describes the creation and operation of subregional and regional fisheries management organizations and arrangements, stating in Article 8:

"1. Coastal States and States fishing on the high seas shall, in accordance with the Convention, pursue cooperation in relation to straddling fish stocks and highly migratory fish stocks either directly or through appropriate subregional or regional fisheries management organizations or arrangements, taking into account the specific characteristics of the subregion or region, to ensure effective conservation and management of such stocks.
[…]
"3. Where a subregional or regional fisheries management organization or arrangement has the competence to establish conservation and management measures for particular straddling fish stocks or highly migratory fish stocks, States fishing for the stocks on the high seas and relevant coastal States shall give effect to their duty to cooperate by becoming members of such organization or participants in such arrangement, or by agreeing to apply

the conservation and management measures established by such organization or arrangement. States having a real interest in the fisheries concerned may become members of such organization or participants in such arrangement."

As Francisco Blaha describes:
"RFMOs are assumed to provide a forum through which States will cooperate to achieve and enforce conservation objectives, both on the high seas and in areas under national jurisdiction. Their responsibilities include assessing the status of fish stocks of commercial value within their area of jurisdiction; setting limits on catch quantities and the number of vessels allowed to fish; regulating indirectly via CMMs (Conservations and Management Measures) that apply the types of gear that can be used, to species of interest, to reporting requirements, to interaction with birds, and thousand more issues... CMMs then need to be incorporated into regulation by the member countries, and implemented by the flag states and slowly now more by coastal and port state when the offences are under their jurisdiction."

A UNEP publication, *Regional Oceans Governance,* has noted that, "The 2012 FAO report on governance performance of regional fishery bodies (RFBs) (FAO 2012), highlights key governance challenges, such as: transparency (e.g. regarding the rules for observers); relationships with noncontracting parties; cooperation with other international organizations and other RFBs, especially those targeting the same species; and special requirements of developing states."

"Overfishing is a particularly tough challenge because of the difficulties of (at-sea) enforcement of deep-sea bottom trawl fishing regulations....

"Currently, there are 41 marine RFBs worldwide, comprising 21 RFMOs and 20 advisory RFBs (3 scientific; 17 management advisory). Other RFBs are in the planning or development stages, contributing to the aim of global high seas coverage of RFBs. Some RFBs have been modernised in recent years and have updated their constitutive instruments or replaced them with new ones. However, the mandates of some RFBs are considered by the FAO as out-dated, since they do not adequately address contemporary fisheries management approaches and issues, such as impacts on non-target species and the broader marine ecosystem."

The Pew Trusts has prepared a helpful FAQ re: RFMOs. A couple of items from that FAQ:

Q: Are RFMOs responsible for managing other marine species?
A: Although many RFMOs focus exclusively on commercial fish stocks, some recently established ones are also required to manage other species or aspects of the marine ecosystem. The Western and Central Pacific Fisheries Commission, for example, is responsible not only for tuna, but also for sharks, seabirds, and turtles affected by fishing. Likewise, the Inter-American Tropical Tuna Commission adopted the Antigua Convention in 2010 to formalize its mandate to manage fisheries by applying an ecosystem approach: to consider all the marine species within its convention area.

Q: How do RFMOs determine catch levels for a species? How often are these decisions reviewed?

A: In theory, many RFMOs are required to base the amount of allowable catch on the best available science. These decisions are then reviewed annually. In reality, the decisions are often highly political, and some RFMOs have consistently adopted catch levels much higher than scientists considered sustainable. In many cases, RFMOs use inadequate tools to limit catches. For example, instead of setting catch limits, some RFMOs attempt to prevent overfishing by limiting the number of days a vessel is allowed to fish in a year. This encourages the deployment of more-efficient vessels that can catch more fish in less time, resulting in overfishing.

As of 2019, the EU, represented by the EC, participated in six RFMOs that manage highly-migratory species, mainly tuna:

- International Commission for the Conservation of Atlantic Tunas (ICCAT)
- Indian Ocean Tuna Commission (IOTC)
- Western and Central Pacific Fisheries Commission (WCPFC)
- Inter-American Tropical Tuna Commission (IATTC)
- Agreement on the International Dolphin Conservation Programme (AIDCP) (sister organisation to IATTC)
- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)

And nine RFMOs that manage fish stocks by geographical area:

- North-East Atlantic Fisheries Commission (NEAFC)
- Northwest Atlantic Fisheries Organization (NAFO)
- North Atlantic Salmon Conservation Organisation (NASCO)
- South-East Atlantic Fisheries Organisation (SEAFO)
- South Indian Ocean Fisheries Agreement (SIOFA)
- South Pacific Regional Fisheries Management Organisation (SPRFMO)
- Convention on Conservation of Antarctic Marine Living Resources (CCAMLR)
- General Fisheries Commission for the Mediterranean (GFCM)
- Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea (CCBSP)

as well as two RFMOs that have a purely advisory status:

- Western Central Atlantic Fisheries Commission (WECAFC)
- Fisheries Committee for the Eastern Central Atlantic (CECAF)

The Deep Sea Conservation Coalition published a critique of the capacity of RFMOs to effectively address the destructive effects of bottom trawl fishing, while it called for a moratorium on the practice in the high seas. Titled *A net with holes: the regional fisheries management system* it stated:

"Some countries have suggested that action by regional fisheries management organizations (RFMOs) would be sufficient to solve the problem. However, the management of fisheries on the high seas by RFMOs is highly fragmented and inconsistent. Most high seas areas, including all of the Pacific Ocean, the Indian Ocean, and the majority of the Atlantic Ocean,

are not covered by RFMOs with the authority to manage deep sea bottom fisheries. Bottom trawl fishing in these regions is, by definition, unregulated high seas fishing."

"The vast majority of RFMOs lack the legal competence to impose restrictions on high seas bottom trawl fishing, let alone to protect the ecosystem as a whole within their areas of jurisdiction. And even those RFMOs that do have the necessary authority can only control the practices of vessels flagged by member states. As a result, most RFMOs are wholly unprepared to protect high seas biodiversity from the destructive powers of bottom trawl fishing, especially where IUU fishing is used specifically to escape such limited flag state controls."

Bycatch Reduction

In January 2019, FAO issued *A third assessment of global marine fisheries discards*.

It focuses on "managing bycatch and reduction of discards, as well as a discussion of other sources of fishing mortality, such as pre-catch loss, discard mortality and ghost fishing mortality." Bycatch is defined as the catch of non-targeted organisms, including those that are "outside legal-size limits, over-quotas, threatened, endangered and protected species, and discarded for whatever other reasons, as well as nontargeted organisms that are retained and then sold or consumed."

The assessment estimated an annual rate of 9.1 million tonnes of discards from marine capture fisheries between 2010 and 2014, with 46% of the total deriving from bottom trawl gear. And it references an estimate that "one million seabirds, 8.5 million sea turtles, 225,000 sea snakes, 650,000 marine mammals and 10 million sharks, amounting to a total of around 20 million individuals, were captured and discarded annually in global fisheries (Gray and Kennelly, 2018)."

That doesn't include "slipped fish". As the FAO document explained, "In purse seine fisheries it is a common practice to deliberately release fish from the net over the float line of the purse seine after it has been partially hauled or 'dried-up' towards the end of a fishing operation while the catch is still in water. The release is generally known as 'slipping'. Slipping is done when the size or species composition of fish is found not desirable, or the amount of the catch in the net is excessive. Release may also be a response to regulatory restrictions or market demands. Usually, only a part of the catch is slipped, but in some cases, the entire catch is slipped. There is little data available on the quantities of catches that are slipped in the global scale, but it can be substantial. Whilst slipped fish is not usually considered as discards because the fish had not yet been brought on to the deck, it can lead to mortality in the released fish" particularly, for example, if they were caught far from the surface.

The count of discards also does not include pre-catch mortalities and those resulting from ghost gear.

It's hard to judge to what degree the estimated 9.1 million tonnes of annual discards represents progress... It appears that there may have been significant reduction of bycatch

between 1994 and 2005, but not much in the subsequent 10 years. Capacity to accurately judge the amount of discards has evolved; there is enhanced reporting, for example, via the US National Bycatch Reports, and pursuant to requirements of certification organizations such as the Marine Stewardship Council, with attendant increase in use of onboard observers and electronic monitoring.

In 2011, FAO had published *International Guidelines on Bycatch Management and Reduction of Discards*.

That delineated tools and techniques to manage bycatch and reduce discards including:
(1) Input and/or output controls, such as fishing quotas or limits on allowable bycatch, within the framework of fishery management plans.
(2) Improvement of the design and use of fishing gear that might, for example, include changes in the size and shape of mesh and hooks, escape panels in traps, acoustic alarms, biodegradable panels, square mesh panels, underwater lights, sorting grids, and turtle excluder devices.
(3) Spatial and temporal measures limiting fishing by season and/or location to reduce effects on particularly vulnerable populations. States and RFMOs "should consider the feasibility of introducing a requirement to move away from areas where significant bycatch problems occur."
4) As fisheries management plan are designed, establishment of no-discard regimes together with monitoring and reporting requirements should be considered.
5) Economic incentives, e.g., "the costs to fishers for installation of bycatch mitigation technologies could be lessened, where appropriate, through the application of grants/loans and preferential treatment on duties and taxes for investment in such technologies."
6) States and RFMO/Arrangements should seek "to eliminate or adjust regulatory measures that provide incentives which may undermine bycatch management and discard reduction measures."

In January 2021, FAO published Technical Guidelines to Reduce Bycatch of Marine Mammals in Capture Fisheries. It had received support and input from the IWC's Bycatch Mitigation Initiative (BMI). It details measures for reducing bycatch, including spatial closures, use of acoustic deterrents or alerting devices, modifications to fishing gear, changes in fishing operations and other strategies. Previously, seabirds, turtles and sharks had been the subjects of FAO Guidelines and Plans of Action but none had been developed for marine mammals.

The FAO also launched a website to support their Responsible Fisheries programme, which includes focus on bycatch, discards, gear marking and marine litter.

In respect to reducing the impact of lost or abandoned ("ghost") fishing gear, the FAO has recommended: "identification of gear ownership, reduction of gear losses, development of gear retrieval procedures and programs, and reducing, and where possible eliminating, fishing power of lost gear, e.g. through the use of degradable materials."

FAO has now published *Voluntary Guidelines on the Marking of Fishing Gear* which aims to "improve the state of the marine environment, and to enhance safety at sea by combatting,

minimizing and eliminating abandoned, lost or otherwise discarded fishing gear (ALDFG) and facilitating the identification and recovery of such gear. The Guidelines assist fisheries management and can be used as a tool in the identification of illegal, unreported and unregulated (IUU) fishing activities. The Guidelines address the purpose and principles, the scope of application and the implementation of a gear marking system and its associated components, including reporting, recovery and disposal of ALDFG or unwanted fishing gear and commercial traceability of fishing gear."

And the FAO has also (February 2018) issued a *Report of the Technical Consultation on Marking of Fishing Gear* (FAO Fisheries and Aquaculture Report No 1236).

That Technical Consultation considered "how the guidelines should be implemented, controlled and monitored and identified the importance of gear marking in combating abandoned, lost or otherwise discarded fishing gear (ALDFG) as well as the role that gear marking could play in reducing or eliminating Illegal, Unreported and Unregulated (IUU) fishing."

The Technical Consultation further recommended that FAO's Committee on Fisheries (COFI) consider "the development of a comprehensive global strategy to address ALDFG which could include the establishment of a mechanism to facilitate the sharing of information on the global implementation of these guidelines as well as data collected by national ALDFG reporting systems, and recommending to States the development and implementation of national action plans to address ALDFG."

FAO has noted that the switch to an alternative gear may also take place through regulations that make the use of certain gear types illegal, like the trawl bans that have been, to some degree, imposed in Indonesia, and the U.N. moratorium on high seas large-scale driftnets that was passed in 1989, followed by a worldwide ban in 1992.

FAO's "third assessment" report noted that "Best practices in bycatch reduction are illustrated by a number of countries in the Organization for Economic Cooperation and Development (OECD), while many countries especially in Asia provide valuable experiences in utilization of bycatch. Increased bycatch utilization is now widespread in Asia, Africa and America leading to reduced discards."

In particular, it detailed the landing obligations in the new EU Common Fisheries Policy (CFP) that aim for a gradual elimination of discards of commercially exploited stocks on a case-by-case basis (Regulation (EU) No 1380/2013 of the European parliament and of the council of 11 December 2013 on the Common Fisheries Policy). And it highlighted large EU-wide projects such as
1) the iSeas project
2) Minouw and
3) DiscardLess

With EU funding support, each of those projects seeks to avoid unwanted catches or to use them productively while increasing awareness of the bycatch problem and available solutions.

In 2013, a ban on discarding (the landing obligation) in EU fisheries had been introduced as a core element of the Common Fisheries Policy (CFP) reform. That required gradual phasing-in of obligations to land all catches across areas, fisheries and species... though there were numerous exemptions allowed. For example, it only applied to species or stock with established total allowable catch (TAC) and species covered by minimum landing size regulations. Fish below the specified size need to be landed and deducted from the quota, but cannot be sold for human consumption. Introduced in 2015, the landing obligation has been expanding through 2019 to cover all commercial fisheries in European waters as well as European vessels fishing in high seas. (Article 15 of REGULATION (EU) No 1380/2013).

Illegal, Unreported and Unregulated (IUU) fishing

As previously described, the Fish Stocks Agreement details the duties of flag States including those related to registration and records of vessels, monitoring, control and surveillance (MCS), compliance and enforcement. And the Agreement on Port State Measures (PSMA), the Cape Town Agreement, and the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) are all designed to additionally work synergistically to prevent IUU fishing.

But, nevertheless, it is estimated that as many as 1 in 5 fish captured in the oceans may have been caught illicitly.

Published in February 2019 by OECD, *Intensifying the Fight Against IUU Fishing at the Regional Level* aimed to inspire and guide RFMOs and member countries to strengthen the fight against IUU fishing by “measuring the extent to which RFMOs apply best practices against IUU fishing and pointing to the remaining gaps.”

The OECD paper identifies five target indicators as the most important management tools that RFMOs could use to combat IUU fishing:
1) minimum standards for monitoring, control and surveillance (MCS)
2) mechanisms for listing IUU fishing vessels
3) decision-making procedures that may restrain action where there is not consensus
4) exchange of information with other RFMOs
5) review of members' compliance with adopted conservation and management measures (CMMs)

The OECD analysis indicates that advances are being made. Conservation and management measures (CMMs) recently adopted by RFMOs include better MCS mimimun standards and IUU vessel-listing mechanisms. There's improved cooperation between RFMOs but also continued discrepancy between the efficacy of different RFMOs that suggests “scope for improvement by learning from best performers."

"Some RFMOs still do not make public their lists of authorised vessels, making it difficult to check them against lists of IUU fishing vessels, and only few RFMOs have implemented catch documentation schemes to certify legal catches in a standardized way. IUU vessels lists are often incomplete, and the lack of comprehensive information makes the identification of IUU

fishing vessels and tracking their beneficial owners difficult. Protocols for sharing IUU vessel lists currently in place are not standardised and not always followed in practice. The use of sanctions by RFMOs is also not common as only few RFMOs have provisions for imposing sanctions on member countries for not adhering to adopted CMMs and. Then, even when provisions for sanctioning are in place, these are not applied systematically. Furthermore, the review of the compliance of RFMO members with agreed CMMs and data submission requirements are not comprehensively reported on, making it difficult to assess members' commitment to agreed measures. Improving decision-making processes is important to facilitate progress on all of these fronts."

The OECD makes the following recommendations:

"1. Adopt minimum standards on monitoring, control and surveillance tools and practices. In particular:

- Make mandatory the publication of comprehensive lists of authorised vessels that can be easily checked against existing lists of IUU fishing vessels.
- Adopt catch documentation schemes certifying legal catches in a standardized way, in line with the Voluntary Guidelines on Catch Documentation Schemes of the Food and Agriculture Organization of the United Nations.
- Co-operation between RFMOs could help identify and define the most appropriate standards.

2. Build information-rich IUU vessels lists by investing in gathering the necessary information from various stakeholders. In particular, step up efforts to include:

- The identification numbers of the International Maritime Organization (IMO), as flags and names can be easily changed;
- Information on vessels' beneficial owners to verify that authorised operators have no legal, personal, financial or other ties to those sanctioned for illegal fishing.

3. Tighten co-operation between RFMOs over the mutual recognition of IUU vessel lists.
4. Create strict and transparent sanctioning mechanisms for countries that fail to fulfil their obligations as RFMO members.
5. Regularly review the compliance of RFMO members with agreed CMMs and data submission requirements. Publicly and transparently report on this process.
6. Establish voting protocols that are more efficient than consensus-based decision making at allowing adoption of measures against IUU fishing and sanctioning non-compliant parties. When objection procedures are in place, their format should be well defined so that the objectives of the proposed CMMs are not compromised;
7. The OECD also encourages countries with vested interests in resources in the areas of competence of RFMOs, but which are not members, to join and actively contribute to the enforcement of adopted CMMs."

In respect to RFMO decision-making procedures, the report explains that some RFMOs seek full agreement for decisions, with no obligation to provide justification for any objections. Some others do require a rationale to be provided. And some "consider inconsistency with the convention or unjustified discrimination against the objecting party as the only admissible grounds for an objection". While some "require objectors to present alternative measures consistent with the objective of the relevant conservation and management measures."

OECD also in 2019 published a companion paper, *Closing gaps in national regulations against IUU fishing* (OECD Food, Agriculture and Food Paper N°120), which tracks implementation of best policies and practices by individual countries and provides guidance on how to strengthen efforts against IUU fishing.

Its stated aim was to investigate the degree to which countries met their responsibilities:

- as flag states, to regulate domestically-flagged vessels fishing in areas beyond their national jurisdiction and in foreign waters;
- as coastal states, to regulate vessels in their domestic exclusive economic zone;
- as port states, to apply port controls and regulate the flow of products to the market;
- as markets, to prevent the purchase of illegal seafood and detect it within the supply chain;
- as regulators, in all the above roles, to enforce regulation through monitoring, control and surveillance, as well as sanctioning; and
- as members of the international community, to engage in co-operation and crosscountry initiatives against IUU fishing.

One major deficit cited was that in 2016, only 6% of surveyed OECD countries were making "data on fishing authorisations of foreign vessels in their domestic waters easily accessible to both the public and other arms of government. A third of the OECD countries surveyed did not have fully functioning mechanisms allowing the use of trade information to target the movement of IUU fishing products along the value chain."

The report provided 17 key recommendations to countries towards eliminating IUU fishing, and those are all listed on page 8 of the report.

The appendices aim to compare each OECD country's performance on a variety of indicators of policies and practices against IUU fishing.

With a broader scope, an IUU Fishing Index has been created by Poseidon Aquatic Resource Management. "For all 152 coastal countries of the world, a score is calculated based on a suite of 40 indicators. These relate to the prevalence of IUU fishing in each country, and their vulnerability and response to it, drawing on various coastal, flag, port, and other state responsibilities." There is an associated IUU Fishing Index website that "provides maps to visualize scores by indicator type and responsibility, country ranking data, and 152 individual country profiles which provide scores for each indicator for the country concerned, and show how the country's scores compare with the average scores for the region and the ocean basin(s) in which the country is located."

CITES

Geneva Switzerland

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement between governments aiming to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

The species covered by CITES are listed in Appendices, according to the degree of protection they need. Appendix I includes species threatened with extinction, such as beaked whales, most great whales, marine turtles, coelacanth, dugong, shortnose sturgeon, six fur seal species, totoaba, several dolphin and porpoise species, and sawfish. Appendix II includes species "not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival". Marine species listed there include a variety of sharks, most sturgeons, humphead wrasse, devil ray and seahorse.

The Species Survival Network, founded in 1992, is an international coalition of over eighty non-governmental organizations (NGOs) committed to the promotion, enhancement and strict enforcement of CITES. Through scientific and legal research, education and advocacy, the SSN is working to prevent over-exploitation of animals and plants due to international trade.

FAO maintains a website for "selected and updated information on the work undertaken by the FAO Fisheries and Aquaculture Department on the main issues raised by the harvesting and trade of commercially exploited aquatic species listed in CITES Appendices".

World Trade Organization (WTO)

Geneva, Switzerland

The World Trade Organization (WTO) is the global international organization dealing with the rules of trade between nations. Aiming to overcome barriers to free trade, it provides a forum for governments to negotiate trade agreements and a place for them to settle trade disputes.

The WTO rules currently make no reference to animal welfare; however, in 2014, an appellate body and panel of the WTO ruled in partial favor of the seal product ban of the EU, saying that the ban had a legitimate objective, which was a public moral concern on seal welfare. This ruling in effect indicates that animal welfare is covered by the WTO's public morals clause.

The Public Forum is the WTO's largest annual outreach event, which provides a platform for participants to discuss the latest developments in world trade and to propose ways of enhancing the multilateral trading system. The event includes representatives from civil society. On its web site, the WTO provides an explanation of the opportunities it offers for dialog with NGOs.

At WTO's 2001 Doha Ministerial Conference, it was decided to "clarify and improve" WTO rules that apply to fisheries subsidies. The mandate was expanded at the 2005 Hong Kong Conference with the intention of prohibiting a variety of fisheries subsidies that contribute to overcapacity and overfishing.

The process was accelerated when, in 2015, UN Sustainable Development Goals were adopted that include SDG 14.6: "By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, and eliminate subsidies that contribute to IUU fishing, and refrain from introducing new such subsidies, recognizing that appropriate and

effective special and differential treatment for developing and least developed countries should be an integral part of the WTO fisheries subsidies negotiation."

At the WTO's 2017 Ministerial Conference in Buenas Aires (MC-11) ministers determined to conclude the negotiations by adopting, at the 2019 Ministerial Conference, an agreement consistent with SDG 14.6.

As of November 2018, a working document had been produced. And, in 2019, the Negotiating Group on Rules has been meeting, striving to develop an agreement. They have, for example, discussed two draft texts addressing prohibitions on fisheries subsidies: Australia's on prohibiting subsidies for fishing of overfished stocks and New Zealand and Iceland's draft on prohibiting subsidies that contribute to overfishing and overcapacity of fleets. Additional drafts are being developed including to address elimination of subsidies to illegal, unreported and unregulated (IUU) fishing.

In *Trade and Fisheries: Key Issues for the World Trade Organization,* Frank Asche and Martin Smith had explained: "Trade actions of individual countries or groups of countries have the potential to fall under the jurisdiction of, and possibly conflict with, a wide range of WTO rules, including sanitary and phytosanitary measures, anti-dumping, subsidies and countervailing measures, and technical barriers to trade and rules of origin. Depending on how broadly protection of human health and the environment are interpreted, efforts to promote marine conservation could lead to a proliferation of trade restrictions that are allowable under WTO rules. "

CGIAR

Montpellier, France
The CGIAR is a global agricultural research partnership dedicated to reducing poverty, enhancing food and nutrition security, and improving natural resources and ecosystem services.

Its research centers include:

- International Food Policy Research Institute (IFPRI), which offers policy solutions to reduce poverty and end hunger and malnutrition in developing countries.
- International Livestock Research Institute (ILRI), which works to improve food security and reduce poverty in developing countries through research on livestock.
- WorldFish which aims to reduce poverty and hunger by improving fisheries and aquaculture.

WorldFish describes how it will promote 1) sustainable aquaculture 2) resilient small-scale fisheries and 3) enhancing the contributions of fish to nutrition of the poor.

It targets countries where "aquaculture is in early stages of development but needs accelerated growth to fill projected shortfalls, or where aquaculture is already established but opportunities exist to sustainably intensify the supply levels required to meet growing domestic or regional demand…. Impacts are delivered through widespread dissemination and use of improved tilapia and carp seed, application of best management practices, adoption of

fish disease control measures, sustainable aquafeeds and adoption of production systems with reduced greenhouse gas emissions and improved water and nutrient use."

Based in Penang, Malaysia, WorldFish has an especially strong focus on inland/estuarine fisheries in Africa and Asia-Pacific, “where the largest number of poor people depend on fish for food and nutrition security and where our research has the greatest potential to deliver impacts at scale. In Asia-Pacific, we will focus on inland and estuarine fisheries in Bangladesh, Myanmar and Cambodia and coral reef fisheries in Solomon Islands. In Africa, we will continue work on inland fisheries and the small fish that constitute the majority of catches and that supply value chains reaching poor consumers across the continent."

WoldFish aims to increase “the availability, accessibility and consumption of nutrient-rich fish by poor consumers, with particular emphasis on women and children in the first 1,000 days of life. We focus on specific geographies in Asia and Africa that leverage synergies with our work on aquaculture and small-scale fisheries production, and where the potential for direct impacts at scale is high."

Anthropogenic Underwater Noise

The June 2018 meeting of the UN’s Informal Consultative Process on Oceans and the Law of the Sea (ICP-19) mainly focused on Anthropogenic Underwater Noise. Leading up to that meeting, the IISD Reporting Service stated: "For many marine animals, sound is the preferred sensory medium. Underwater noise has increased with expansion of industrial activities in the marine environment, affecting many types of marine biota. Most relevant international rules, standards and recommended practices are non-legally binding, largely sectoral, and focused on specific activities or affected species. Regional and national efforts tend toward guidelines and codes of conduct. Significant data and knowledge gaps hinder development of effective management measures to protect marine species."

That 2018 meeting at the UN included attention to Resolution 12.14 on Adverse Impacts of Anthropogenic Noise on Cetaceans and Other Migratory Species that had been adopted the previous year at the 12th Meeting of the Conference of the Parties to the Convention on Migratory Species (CMS). The Resolution urged Parties to ensure that Environmental Impact Assessments take full account of the effects of activities on CMS-listed marine species and their prey, and its Annex included extensive Guidelines on Environmental Impact Assessments for Marine Noise-generating Activities, which encompass:

- Military and Civil High-powered Sonar
- Shipping and Vessels Traffic
- Seismic Surveys (Air Gun and Alternative Technologies)
- Construction Works
- Offshore Platforms
- Playback and Sound Exposure Experiments
- Pingers (Acoustic Deterrent/Harassment Devices, Navigation)
- as well as other Noise-generating Activities (Acoustic Data Transmission, Wind, Tidal and Wave Turbines).

An extensive set of panel presentations focused on the sources of anthropogenic underwater noise, its impacts on marine life, and international cooperation attempting to mitigate the damage. And presentations at a side event included:

- Dr. Weilgart (Dalhousie University): "What science tells us. The impact of anthropogenic ocean noise pollution, a risk to prey species and food supply";
- Ms. Frisch-Nwakanma (CMS Secretariat): "How the CMS Family Noise EIA Guidelines support the assessment of the potential impacts of noise generating activities", and
- Nicolas Entrup (OceanCare): "Best practice. Regional, technical and capacity-building approaches. A way forward".

According to Professor Hildebrand of the Marine Physical Laboratory at Scripps: "We've demonstrated that the ocean is a lot noisier now than it was 40 years ago. The noise is more powerful by a factor of 10. If we've doubled the number of ships and we've documented 10 times more noise, then the noise increase is due to both more ships and noisier individual ships than in the '60s. And that may be because the ships are now bigger, faster and have more propulsion power."

Eleonora Panella of IFAW writing in EurActiv further explained: "Research has found that in the Pacific Ocean, for example, shipping noise has doubled every decade for the past 40 years, that's a shocking 1,600% increase! In the meantime, the ability of blue whales to interact and navigate has been radically impacted with the distance over which they communicate reduced by a staggering 90%."

"In the European Union (EU)", she continued, "the situation is not much better. While the 2008 Marine Directive required member states to take action to reduce levels of underwater noise by 2020, the European Commission declared last year [2018] that governments would fail on their own binding commitments."

Evaluating whether existing vessel-quieting applications for military vessels and scientific research vessels could be feasibly and economically "scaled-up" for large commercial vessels was identified as a key action item at a 2004 symposium on "Shipping Noise and Marine Mammals" hosted by the US National Oceanic and Atmospheric Administration (NOAA).

A subsequent, more targeted symposium convened by the NOAA in 2007 with support from Germany-based Okeanos – Stiftung für das Meer (Foundation for the Sea) included (1) analysis of the feasibility and estimated costs/benefits of applying existing and future quieting technology to large commercial vessels and (2) focus on non-regulatory incentives to reduce sound emission from large commercial vessels. A final report was produced. The following year Okeanos convened "An International Workshop on Shipping Noise and Marine Mammals" and which was also followed by an in-depth report.

In 2014, the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO) approved guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life – (MEPC.1/ Circ.833). Those both address design considerations for propellers, hulls, and onboard machinery, as well as

operational and maintenance considerations in respect to propeller cleaning, underwater hull surface maintenance, selection of ship speed, and re-routing to avoid sensitive areas.

As Eleanora Panella of IFAW stated, “In addition to reduced speeds, requiring the use of existing quieter technologies would also support the efforts to reduce ocean noise from shipping, as would ocean noise exclusion zones. A last incentive would be for governments to understand that this does not require a long-term implementation before results can be expected: unlike other forms of marine pollution, when ocean noise stops, the pollution disappears. As soon as solutions are implemented, the results will be immediate.”

Especially severe anthropogenic underwater noise results from seismic surveys. As explained by the Surfrider Foundation: "Seismic surveys are used to locate and estimate the size of offshore oil and gas reserves. To carry out such surveys, ships tow multiple airgun arrays that emit thousands of high-decibel explosive impulses to map the seafloor. The auditory assault from seismic surveys has been found to damage or kill fish eggs and larvae and to impair the hearing and health of fish and marine mammals, making them vulnerable to predators and leaving them unable to locate prey or mates or communicate with each other. These disturbances can disrupt and displace important migratory patterns, pushing marine life away from suitable habitats like nurseries and foraging, mating, spawning, and migratory corridors."

A January 2019 article in the New York Times quoted Douglas Nowacek, a professor of marine conservation technology at Duke University, as stating that air guns "fire approximately every 10 seconds around the clock for months at a time... They have been detected 4,000 kilometers away. These are huge, huge impacts.”

The article further indicated that “As part of the Trump administration’s plans to allow offshore drilling for gas and oil exploration, five companies are in the process of seeking permits to carry out seismic mapping with the air guns all along the Eastern Seaboard, from Central Florida to the Northeast, for the first time in three decades.”

A coalition of environmental groups has filed suit asserting that allowing the seismic blasts would violate a variety of laws, including the U.S. Endangered Species Act.

NGOs and Marine Protected Areas

The Pew Charitable Trusts, The Natural Resources Defense Council, Ocean Unite, and Greenpeace are among the NGOs that have endorsed protecting “at least 30% of the planet’s key coastal and marine areas by 2030, through effectively and equitably managed, ecologically representative and well-connected systems of fully or highly protected marine protected areas (MPAs).”

In April 2019, Greenpeace issued a 96-page report explaining the rationale for such action and recommending steps for implementation: *30x30: A Blueprint for Ocean Protection: How we can protect 30% of our oceans by 2030*.

It stated that “there is currently no comprehensive global framework to protect marine biodiversity in international waters, and the few high seas MPAs that do exist have so far been achieved through regional seas conventions. However, these agreements differ greatly in scope whereby the rules and standards they apply are not uniform… It should also be noted that the regional seas conventions only cover a small proportion of the high seas and there is no mechanism in place for creating, let alone effectively managing, MPAs in most ABNJ.”

Greenpeace’s suggested methodology for designing the network relies on publicly available data on fishing, aims to minimize economic impacts, and would only displace around 20-30% of existing fishing effort.

Considerably more expansive bans on high seas fishing have been contemplated by others who have described potential benefits as a result, anticipating that the absence of fishing in the high seas would result in increasingly large populations of fish in EEZs. In March 2014, marine biologist Crow White and economist Christopher Costello published *Close the High Seas to Fishing?* in PLOS Biology and concluded that a comprehensive ban "both induces cooperation among countries in the exploitation of migratory stocks and provides a refuge sufficiently large to recover and maintain these stocks at levels close to those that would maximize fisheries returns. We find that completely closing the HS to fishing would simultaneously give rise to large gains in fisheries profit (>100%), fisheries yields (>30%), and fish stock conservation (>150%)... a complete closure of the HS still returns larger fishery and conservation outcomes than does a HS open to fishing."

Currently, much of high seas fishing is conducted by industrialized fleets from relatively few countries. The White/Costello analysis suggests that “the handful of countries whose current fishing fleets specialize in fishing the HS (e.g., Japan, China, and Spain may be harmed by the closure. On the other hand, these countries' HS losses may be offset by enhanced fishing opportunities in their EEZs as stocks rebuild. Developing countries whose stocks are depleted by HS over-exploitation but who have not invested in HS fleets may benefit most from a HS closure.”

In a September 2018 interview with Yale e360 magazine, Daniel Pauly, a professor at the University of British Columbia and principal investigator at the fisheries research group, the Sea Around Us, explained his advocacy for a global ban on high seas fishing, including asserting:

- “Basically, we’ve destroyed all the protections that fish populations once enjoyed. Depth was a protection, cold was a protection, ice was a protection because we couldn’t fish in those areas. We can now go everywhere the fish once sheltered. Moreover, we’re destroying whole ecosystems with our destructive practices. Trawlers transform a pristine ecosystem — a diverse habitat of soft reef with corals, sponges, and other organisms — into sterile mud flats.”
- “Because the fish are so widely scattered and hard to find, they can only be fished with massive subsidies from the country that they are based in. So for example, Spain can fish in the western and central Atlantic because their fleets are heavily subsidized. Japan fishes all over the tropics and that wouldn’t work without subsidies. The Chinese

fleet is a bottom-trawling fleet, it could do that only with massive subsidies. The same for Korea, the same for Taiwan."

- "If the catch were not being made by these big foreign fleets, it would be made by the coastal countries [that currently reap little benefit] — for example, East African and West African countries, Southeast Asian countries, and the Caribbean."

Among the NGOs active in this issue area is **Global Ocean Forum (GOF) (**Newark, DE, USA). The Global Ocean Forum tracks progress (or its absence) on major ocean-related goals, with a particular focus on integrated, ecosystem-based management). As an international NGO, it has created a network of ocean policy leaders from 110 countries. It fosters dialogue and builds capacity related to the issue of areas beyond national jurisdiction (ABNJ) and is actively involved in the Intergovernmental Conference on an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ).

The **International Programme on the State of the Ocean (IPSO) (**Lindville, UK) is an NGO aiming "to enable a greater scientific understanding of the services the ocean provides to humankind and the impact of the main human stressors upon it, enabling solutions to be explored and greater communication with decision-makers and the public. To that end, the initiative brings together science, communications, policy and legal disciplines."

IPSO convenes regular ˜State of the Ocean" workshops at Oxford University that "bring together scientists from different marine disciplines and areas of expertise (from pollution and extraction to acidification and hypoxia) to consider how much we understand about the current state of the ocean and the measures necessary to protect it from wide-scale collapse."

The **Global Ocean Biodiversity Initiative (GOBI) (**Romsey, UK) is an international partnership of organisations that contributes expertise, knowledge and data to support the Convention on Biological Diversity's efforts to identify ecologically and biologically significant marine areas (EBSAs), seeking to reduce the rate of biodiversity loss while supporting establishment of networks of marine protected areas in national and international waters.

The **World Ocean Council (WOC) (**Honolulu, HI USA) is an NGO, developed by and for the private sector, that "believes that responsible and coordinated Ocean Business Community efforts are essential to a healthy and productive global ocean and its sustainable use, development and stewardship by a responsible Ocean Business Community." It "brings together leaders from the various ocean industries, including shipping, oil and gas, fisheries, aquaculture, tourism, renewable energy (wind, wave, tidal), ports, dredging, cables, as well as the maritime legal, financial and insurance communities, and others to collaborate on responsible use of the seas" and to ensure that "the Ocean Business Community's role in ocean sustainable development is understood by all relevant stakeholders (decision makers, policy makers, intergovernmental bodies etc.)". It asserts that the WOC network now includes 35,000+ ocean industry and media stakeholders around the world.

Its 2016 paper, *Ocean Industries and Marine Planning,* expresses ambivalence about marine planning generally, stating: "At this time, the potential values of marine planning to industry are speculative for several reasons. First, marine planning can take years (or decades) to be

implemented and evaluated. There are few examples of marine planning efforts that have made the transition to implementation and fewer still that have been sustained long enough to generate social, economic and environmental impacts at a significant scale. Evidence of benefits may increase over time as plans mature and plan implementation is evaluated. Second, implementation differs across industries. What might be a benefit to a traditional industry that has been operating for decades in the ocean may be a hindrance to the emergence of a new industry."

IUCN: International Union for Conservation of Nature

Gland, Switzerland

The 1300 members of the International Union for Conservation of Nature (IUCN) include both government and civil society organisations. It has six expert commissions dedicated to species survival, environmental law, protected areas, social and economic policy, ecosystem management, and education and communication.

Member organisations meet every four years at the IUCN World Conservation Congress to set priorities and agree on the Union's work programme. IUCN congresses have produced several key international environmental agreements including the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species (CITES), the World Heritage Convention, and the Ramsar Convention on wetlands.

The most recent Congress, in 2016 had a strong ocean focus and over a dozen resolutions were adopted related to oceans and marine biodiversity. Some addressed whaling, coral reef destruction, unsustainable fishing, marine litter, mining waste, marine connectivity, and the relationship between oceans and climate change. And a variety dealt with marine protected areas, including in areas beyond national jurisdiction. A subsequent Congress was postponed from June 2020 to September 3-11, 2021 in Marseille.

IUCN has developed a fact sheet summarizing resolutions addressing the design of an instrument on marine biodiversity in areas beyond national jurisdiction. Resolution WCC-2016-Res-047-EN, for example, included a call for the rapid identification, designation and effective management of an ecologically representative and well-connected system of marine protected areas, including reserves, in areas beyond national jurisdiction.

And Resolution WCC-2016-Res-050-EN encourages States to " to designate and implement at least 30% of each marine habitat in a network of highly protected MPAs and other effective area-based conservation measures, with the ultimate aim of creating a fully sustainable ocean, at least 30% of which has no extractive activities, subject to the rights of indigenous peoples and local communities"

In October 2018, IUCN held a workshop at its headquarters in Switzerland, on "Area Based Management Tools, including Marine Protected Areas in Areas Beyond National Jurisdiction" and has now issued a report outlining the results.

Among the key "reflections" reported was: "A strong central governing body is needed to play a major role in establishing and implementing MPAs globally, as well as coordinating,

reviewing and ensuring overall progress towards fostering conservation and sustainable use of BBNJ. Existing bodies will have an important role to play in fostering in-situ conservation of BBNJ, including through the adoption of sectoral conservation measures and regional MPAs, as well as by implementing complementary measures to support global MPAs and cross-sectoral MSP processes."

Food and Agriculture Organization of the United Nations (FAO)

Rome, Italy

The FAO is a specialized agency of the United Nations that coordinates international work to end hunger. It provides assistance to developing nations to enhance agriculture, forestry and fisheries and aquaculture practices with the goal of ensuring food security for all.

With headquarters in Rome, Italy, and a budget exceeding 2.5 billion USD, the FAO includes eight departments: Agriculture and Consumer Protection, Climate, Biodiversity, Land and Water Department, Economic and Social Development, Fisheries and Aquaculture, Forestry, Corporate Services and Technical Cooperation and Programme Management. FAO operates a Committee on Fisheries (COFI), which has sub-committees on Fish Trade and on Aquaculture.

In respect to fisheries, FAO works with partners to:

- Implement the Code of Conduct for Responsible Fisheries and the Ecosystem Approach to Fisheries (EAF).
- Compile and publish the global capture production database, including fleet, fishers and trade-related data.
- Reduce the negative impacts of fishing on the environment
- Implement the Port State and Flag State Measures Agreements to prevent, deter and eliminate illegal, unreported and unregulated fishing.
- Support Member countries in developing and implementing international guidelines relating to fisheries operations including bycatch management and reduction of discards; eco-labelling and traceability; reduction of fish loss and waste; and improve supply chain efficiency.
- Improve understanding of the socio-economics of fisheries including issues related to decent work conditions and equitable revenue distribution
- In collaboration with intergovernmental organizations (e.g. CITES, CMS, IUCN and NGOs), implementing the International Plans of Action (IPOA) for:
    - Reducing Incidental Catch of Seabirds in Longline Fisheries;
    - Conservation and Management of Sharks;
    - Management of Fishing Capacity; and
    - Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing.
- Support the development of small-scale and inland fisheries

FAO compiles and publishes statistics regarding global catch, stock status and bio-ecological characteristics of commercially exploited aquatic species, and every two years, publishes The State of World Fisheries and Aquaculture (SOFIA).

In 2005, FAO published a document, *Ethical Issues in Fisheries,* which addressed issues including: “poverty; the right to food; and overfishing and ecosystem degradation. These sector-specific issues include a number of subsidiary ones, e.g. the equity of fish distribution; the real or perceived dangers of genetic modification; and the catching and discarding of unwanted species”

It acknowledged in its introduction that “Fisheries policy and management have mainly been considered from ecological, technological and socio-economic standpoints. Some of the key issues related to human, scientific or environmental ethics have been addressed implicitly from these standpoints. In many cases, however, they have been largely ignored, e.g. in the slowly developing field of animal welfare.”

And on page 11: “It should be noted that ethical issues related to the ecosystem are considered here mainly in relation to its sustainable use by present and future generations and not in relation to any intrinsic value of the ecosystem. This study does not, for example, consider in any way issues that might arise from the ethics of animal welfare.”

A footnote stated: “Discussion on animal welfare is fairly developed with respect to domestic pet animals (e.g. dogs and cats) and is slowly emerging in relation to animal farming and slaughtering, as well as wild animal conservation (e.g. in reserves, parks, zoos). It is beginning to be considered in relation to farmed fish and experimental protocols (e.g. fish tagging), but relevant discussion is sparse for capture fisheries. Animal welfare, which will probably play a larger role in ethical discussion in the future, is not considered further in the study. “

In February 2019, commenting on FAO’s 2018 State of World Fisheries and Aquaculture (SOFIA) report, Daniel Pauly and Dirk Zeller of The Sea Around Us wrote in Marine Policy: “Further, we congratulate FAO on explicitly addressing in SOFIA 2018 two major challenges in global marine fisheries, namely the effects of climate change and the problems related to subsidies for the enormous Chinese fishing fleets. We applaud FAO for this different, more open tone in SOFIA 2018, which even includes animal welfare consideration, and we hope that it signals a new period of increased FAO engagement with Civil Society and academia, to address the important fisheries and sustainability challenges facing our world.”

The references in SOFIA 2018 to fish welfare were glancing, e.g., a reference to EU animal welfare requirements in transport, an allusion to national aquatic strategies potentially benefiting health and welfare of aquatic animals, and a mention of target 2 of the General Fisheries Commission for the Mediterranean: “Enhance interactions between aquaculture and the environment while ensuring animal health and welfare”

Some of FAO’s many publications providing extensive analyses of key questions in fisheries and aquaculture have been:

- Worldwide review of bottom fisheries in the high seas (2009)
- International Guidelines for the Management of Deep-sea Fisheries in the High Seas (2008).

- Deep-sea Fisheries in the High Seas: Ensuring sustainable use of marine resources and the protection of vulnerable marine ecosystems (2009)

FAO hosts the secretariat for the **Committee on World Food Security (CFS)**, which coordinates a global approach to food security. CFS includes a High-Level Panel of Experts (HLPE) on Food Security and Nutrition, and holds an annual plenary in October. In addition to FAO, the Secretariat is also supported by the International Fund for Agricultural Development (IFAD), and World Food Programme (WFP), which are also based in Rome. Non-governmental actors are represented through the Civil Society Mechanism (CSM), and the Private Sector Mechanism (PSM).

The CFS reports to the UN General Assembly through the Economic and Social Council (ECOSOC), and provides contributions to the High Level Political Forum of the Sustainable Development Agenda.

Report #7 by CFS' High Level Panel of Experts was *Sustainable fisheries and aquaculture for food security and nutrition* (2014)

That 119-page report, which does not necessarily reflect the official views of the Committee, stated:
"It is now widely agreed that the foreseen future increase in demand for fish will have to be satisfied through aquaculture production."
and
"Aquaculture development came also with a range of challenges and externalities - including some affecting food security, but aquaculture experts are now more confident that the era of severe environmental problems has passed and that aquaculture is on the road of being more environmentally sustainable."

Its many recommendations included:
"In Africa, small-scale, subsistence aquaculture has failed to deliver the anticipated reduction of poverty and food insecurity, and interest has now shifted towards slightly larger (i.e. medium-scale), more commercial-oriented enterprises, with the hope that this new model will be more successful at delivering food security outcomes. In Asia, however, the debate is still open. While some scholars claim that medium-scale enterprises are more effective at addressing poverty reduction and food security, the fact remains that 70 - 80 percent of aquaculture production has come so far from small-scale farming."

"1. Fish deserves a central position in food security and nutrition strategies
States should
1a) Make fish an integral element in inter-sectoral national food security and nutrition policies and programmes with special regard to promoting small-scale production and local arrangements (such as procurement through local markets, e.g. for school meals) and other policy tools, including nutrition education.
1b) Include fish in their nutritional programmes and interventions aiming at tackling micronutrient deficiencies especially among children and women, in the respect of cultural specificities, promoting local procurement, and taking into account costs and benefits.
1c) Strengthen international assistance and cooperation to build the capacity of developing

countries to negotiate better terms in fishing agreements to protect the food security and nutrition of their populations.
1d) Eliminate harmful subsidies that encourage over-fishing, to make progress toward halting the current decline in global fish stocks. Revenues available to states from foregone subsidies could be redirected towards public good investments that support food security and nutrition in relation to sustainable fisheries (such as infrastructure and capacity development), or to improve the livelihoods and economic possibilities of fishing community residents."

Fish INFONetwork is a fish marketing and information services coordinated by FAO GLOBEFISH in Rome to develop the fisheries and aquaculture sector. It provides services to both private industry and governments, issuing publications and organizing international conferences, events, workshops and training seminars on seafood commodities and developing trends. Its members are: EUROFISH (Eastern and Central Europe), INFOFISH (Asia and the Pacific), INFOPECHE (West Africa), INFOSAMAK (Arab countries), INFOPESCA (Latin America) and INFOYOU (China).

The FAO also coordinates The Global sustainable fisheries management and biodiversity conservation in the Areas Beyond National Jurisdiction (ABNJ) Program – commonly referred to as the Common Oceans ABNJ Program . That's with funding from the Global Environment Facility and in close collaboration with UNEP, the world Bank and others. It aims to:

- move towards the ecosystem approach and rights-based systems and away from the "race to fish";
- increase our ability to protect fragile ecosystems;
- foster international and cross-sectoral coordination and sharing of information.

FAO is working closely with the World Organization for Animal Health (OIE) and World Health Organization in a tripartite response to the global threat of antimicrobial resistance (AMR).

The World Organisation for Animal Health (OIE)

Paris, France
The OIE is the accepted global standard setting body for animal health and welfare. It has issued:

- Terrestrial Animal Health Code
- Manual of Diagnostic Tests and Vaccines for Terrestrial Animals
- Aquatic Animal Health Code
- Manual of Diagnostic Tests for Aquatic Animals

OIE's Aquatic Animal Health Code (2018) includes Section 7 regarding "Welfare of Farmed Fish" which consists of:
Chapter 7.1. Introduction to recommendations for the welfare of farmed fish
Chapter 7.2. Welfare of farmed fish during transport
Chapter 7.3. Welfare aspects of stunning and killing of farmed fish for human consumption
Chapter 7.4. Killing of farmed fish for disease control purposes

In respect to Chapter 7.3 and its focus on farmed fish slaughter practices, compliance is highly variable. In Europe, a leadership role in encouraging further adherence to OIE

standards is being played by the Aquaculture Advisory Council (AAC) which was established in 2016 in the framework of the European Union's Common Fisheries Policy. Based in Brussels, the AAC receives EU financial assistance and its governance includes industry representatives from finfish and shellfish aquaculture as well as other stakeholders, such as environmental and animal protection organizations. Its role is to provide recommendations and advice related to sustainable development of the aquaculture sector. In 2017, the AAC adopted the position paper Farmed Fish Welfare During Slaughter in the European Union and in July 2019 followed up with Fish Welfare at Slaughter Recommendations that stress the need for effective stunning techniques for fish being slaughtered.

It is unclear when transport and slaughter standards will be expanded to include attention to crustaceans or when, for example, finfish and other marine animal welfare will be the focus of standards regarding breeding and husbandry practices in aquaculture production systems. As of April 2019, OIE stated that: “additional work is currently in progress on standards for pig production systems and the slaughter and killing of farmed reptiles for their skins and meat.”

Aquaculture is expanding far faster than human population growth world-wide and is being promoted and supported by development organizations, Regional Economic Communities and national governments. Many of these are OIE collaborating partners and members, and could benefit significantly from OIE guidance on the breeding, husbandry and housing of farmed fish.

There is already a coalition representing non-governmental animal welfare organizations from all over the world at the OIE, the International Coalition for Animal Welfare (ICFAW), and its membership is growing. ICFAW now holds a Memorandum of Understanding with the OIE, strengthening the relationship between the two organizations.

The OIE is hosting Animal Welfare Forums to address animal welfare issues and ICFAW is providing feedback to the OIE to make these Forums more effective.

The OIE Global AW Strategy

In 2017 the OIE adopted a Global Animal Welfare Strategy with these planned activities:

1) Establishment of a forum that will bring together members of the animal welfare research community, the global animal welfare movement and the global animal-source food sector
2) Development and implementation of science-based animal welfare standards
3) Encouraging and supporting the ongoing development, evolution and implementation of regional animal welfare strategies (RAWS)
4) Strengthening of National Veterinary Services
5) Broadening the horizons and strengthening relationships between animal welfare science and other areas of sciences such as environmental and economic science.

Regional AW Strategies have now been developed for all regions. And there are AW Platforms for Europe and Africa that will provide frameworks for the promotion of AW across whole regions.

Compliance with OIE standards including animal welfare provisions could be incorporated in trade agreements. And a global monitoring and evaluation framework for the OIE is being considered, which would provide a mechanism for regular reporting of animal welfare progress by member countries.

Each member country is expected to have a named OIE delegate and may also have a variety of individuals with relevant expertise serving as “focal points” in respect to each of these particular areas of OIE’s work.

- Animal Disease Notification
- Animal Production Food Safety
- Animal Welfare
- Aquatic Animals
- Communication
- Veterinary Laboratories
- Veterinary Products
- Wildlife

A major aspect of OIE’s Initiative on Animal Welfare is the convening of global conferences on animal welfare, involving national OIE Delegates and animal welfare focal points as well as representatives of industry and civil society. The recommendations adopted at such conferences are considered by the World Assembly of Delegates at the annual OIE General Session, potentially becoming a basis for the development of new standards and guidelines.

At the first of these conferences (Paris, 2004), the main objective was to raise awareness of OIE’s new mandate to address animal welfare and to prepare the way for the adoption of animal welfare standards. (The following year, the OIE adopted four standards covering animal transport and livestock slaughter.) The second global conference (Cairo, 2008) focused on tools and technical support needed by Member countries to help them to implement the animal welfare standards. The third (Kuala Lumpur, 2012) introduced the concept of Regional Animal Welfare Strategies. And at the fourth (Guadalajara, Mexico, 2016), the discussions of the 430 participants representing more than 100 countries included the first review of the draft Global Animal Welfare Strategy, which recommended establishment of a new animal welfare forum designed to enhance engagement among technical experts and OIE stakeholders.

OIE publications include:

- A brochure: *Benefits of aquatic animals are infinite: Keep them healthy*
- An infographic regarding OIE's World Animal Health Information System, which states that 1/3 of Member Countries do not yet report the aquatic health information
- A 72-page OIE bulletin (2012) on the health of aquatic animals and what the OIE is doing to prevent and control disease. It also focuses on the challenges of antimicrobial resistance in aquaculture.

OIE has also been holding quadrennial global conferences on aquatic animal health:

- Panama, 2011 (presentations),
- Vietnam, 2015 (recommendations)(presentations) and

- Chile, 2019 (recommendations), (presentations).

The 2015 conference included a presentation by Linda Keeling: *Fish welfare - moving towards animal-based indicators* whose abstract stated: “The use of fish-based indicators provides a basis for benchmarking fish welfare at a facility over time and measuring the effect of a specific intervention. Monitoring fish welfare in this way also facilitates comparisons between sites that differ in terms of facilities and management. This is especially important in aquaculture considering the range of species and in view of the trend for animal welfare certification schemes. Some fish farmers are already using some fish-based welfare indicators, but often without standardisation. To improve the welfare of fish in the future, it is important to develop and implement fish-based welfare indicators that satisfy requirements for repeatability and reliability.”

At the April 2019 conference, keynote speakers were Dr. George Chamberlain, president of the Global Aquaculture Alliance and a principal in a shrimp farm with breeding facilities in Hawaii, and Dr. Randall Brummett who has been endeavoring to develop a portfolio of investments in sustainable aquaculture and fisheries at the World Bank. Both emphasized the potential for aquaculture to prolong its rapid growth (Brummett suggesting that it may continue to grow at 6% per year for the next two decades), while highlighting continuing risks posed by spread of diseases. Brummett outlined risks to the sector’s growth related to sustainability:

- Massive disease outbreaks
- Declines in water quality
- Loss of biodiversity (wild genes)
- Reduced efficiency due to stress, inbreeding
- Increasing operation costs (medicines)
- Lowered market appeal
- Anti-aquaculture activism

Chamberlain’s emphasis on the potential for industry growth particularly highlighted genetic alterations resulting from breeding. He said that "the rockstar in animal breeding is the chicken," with chickens growing four times faster now than they did in the 1940’s. He then pointed to salmon, shrimp and tilapia whose increased rate of growth was each approaching or exceeding that of chickens although due to breeding programs that started more recently. “So why is it that aquaculture species have such a sharp trajectory,” Chamberlain said, “and they're almost overtaking chicken after so few years. The geneticists say it's because of the short life cycle, it's because of the tremendous number of offspring per spawn, and the fact that they've only recently come from the wild so there's tremendous genetic variabilities still left. What this translates to is the opportunity to have 10 or even 15% improvement per generation like compounding interest. And it's not just growth, it's disease resistance, it's reproductive performance. It's tolerance of soybean meal in the diet. So many factors and we haven't reached consumer traits that might be important like coloration or thickness of their shell or whatever factors might be important.”

Chamberlain’s presentation started at 2:20:06 and Brummett’s at 2:54:50 in the online video of the first day of the conference.

Marine Fisheries Certification and Eco-labels

Marine Stewardship Council (MSC)

London, UK

The MSC asserts that it is “the only wild-capture fisheries certification and ecolabelling program that meets best practice requirements set by both the United Nations Food and Agriculture Organization (UNFAO) and ISEAL, the global membership association for sustainability standards. In March 2017, the MSC became the first global seafood certification program to be recognised for rigour and credibility by the Global Sustainable Seafood Initiative (GSSI).” And MSC also claims that “All along the supply chain, from ocean to plate, MSC certified fish and seafood is separated from non-certified. It is clearly labelled so it can be traced to a certified sustainable fishery”. Fisheries seeking certification pay MSC to have their practices assessed.

MSC promotes what it regards as "sustainable fishing", i.e.,
1) at a level that ensures it can continue indefinitely and the fish population can remain productive and healthy
2) managed carefully so that other species and habitats within the ecosystem remain healthy
3) in compliance with relevant laws and able to adapt to changing environmental circumstances

Monterey Bay Aquarium: Seafood Watch Program

Monterey, CA USA

Seafood Watch issues a guide focused largely on the North American market, suggesting what seafood is a green "Best Choice," yellow "Good Alternative," or a red "Avoid." The "Avoid" category is intended to identify seafood that is overfished or fished or farmed in ways that harm other marine life or the environment. The key issues Seafood Watch examines when evaluating the sustainability of fisheries are:

- Impacts of the fishery on the species under assessment
- Impacts on other capture species
- Effectiveness of management
- Impacts on the habitat and ecosystem

Friend of the Sea

Milano, Italy

Founded by Paolo Bray, International Director of the Earth Island Institute’s Dolphin-Safe Project, Friend of the Sea offers certifications in Fisheries, Aquaculture, Fishmeal and Omega 3 Fish Oil. It asserts that it is the only international scheme that can certify products from both fisheries and aquaculture with the same trademark. Its charge for certification depends on the complexity and it also charges yearly royalties for authorised use of the Friend of the Sea logo on certified products. Friend of the Sea criteria for sustainable fisheries require:

- non-overexploited target stock according to FAO, Regional Fishery Bodies and National Fisheries Authorities;
- no significant impact on the seabed;
- selective fishing gear (max 8 percent discard);
- no bycatch listed as ‘vulnerable’ or worse in the IUCN Redlist;

- compliance with legal requirements (including TACs, no IUU, mesh size, minimum size, etc.);
- waste and energy management;
- social accountability
- for tuna, use of non-entangling Fish Aggregation Devices (FADs)

Aquaculture Certification and Eco-labels

In 2007, the Asia-Pacific Fishery Commission of FAO published the report, *A qualitative assessment of standards and certification schemes applicable to aquaculture in the Asia–Pacific region*. The report outlined a wide variety of certification efforts developed, sponsored or supported by producers, governments, intergovernmental organizations, NGOs, consumers and/or retailers and traders.

Subsequently, the 2011 edition of FAO's *Technical Guidelines on Aquaculture Certification*, provided guidance for the development and implementation of credible aquaculture certification programs, stating:

> 4. […]The application of certification in aquaculture is now viewed as a potential market-based tool for minimising potential negative impacts and increasing societal and consumer benefits and confidence in the process of aquaculture production and marketing.
> 5. Although aquatic animal health and food safety issues of aquaculture have been subjected to certification and international compliance for many years, aspects of animal welfare, environmental issues and socio-economic aspects have not been subjected to compliance or certification.

The FAO guidelines focus on standards, accreditation and certification while considering: a) animal health and welfare, b) food safety, c) environmental integrity and d) socio-economic aspects associated with aquaculture and, internationally, they helped develop acceptance of standards considered to best comply with the FAO guidelines.

Aquaculture Stewardship Council (ASC)

Utrecht, The Netherlands

The Aquaculture Stewardship Council (ASC), co-founded in 2010 by WWF and the Netherlands-based Sustainable Trade Initiative (IDH), has aquaculture standards for abalone, bivalves, freshwater trout, pangasius, salmon, seriola, cobia, shrimp, and tilapia. Between 2004 and 2015, WWF initiated and coordinated the development of species-specific Aquaculture Dialogues aiming to reduce the environmental and social impacts of aquaculture worldwide. With input from over 2,000 representatives of the global aquaculture industry, retail and foodservice sector, NGOs, government and scientific community, the eight standards were developed and provided to ASC. Animal welfare was not explicitly addressed in the standards but ASC believes the standards are likely to nevertheless have an impact on animal welfare through, for example, minimum survival performance standards, water quality standards and proper siting of production facilities. ASC welcomes discussion regarding how animal welfare concerns can best be addressed as standards are revised and expanded.

Global Aquaculture Alliance/Best Aquaculture Practices (BAP)
Portsmouth, NH USA
The Global Aquaculture Alliance is an international, non-profit trade association dedicated to advancing environmentally and socially responsible aquaculture. Its **Best Aquaculture Practices (BAP)** certification system "verifies environmentally and socially responsible processes under which farmed shrimp, salmon, tilapia, Pangasius, mussels and other finfish and crustacean species are produced." According to its FAQ, "More than 700 BAP-certified facilities can be found in Asia, Latin America and other parts of the world. The comprehensive BAP standards developed under the Global Aquaculture Alliance's Standards Oversight Committee go well beyond environmental sustainability to encompass food safety, social responsibility, animal welfare and traceability." Paolo Bray of Friend of the Sea in March, 2018 asserted that the animal welfare component is most comprehensively covered in BAP's "salmon standard, but it is less well covered in the general Finfish and Crustacean Farms standard, which is applicable to all other species."

GlobalG.A.P.
Cologne, Germany
GlobalG.A.P.'s mission involves "globally connecting farmers and brand owners in the production and marketing of safe food to provide reassurance for consumers" G.A.P. stands for "Good Agricultural Practice". The organization's "roots began in 1997 as EUREPGAP, an initiative by retailers belonging to the Euro-Retailer Produce Working Group. British retailers working together with supermarkets in continental Europe become aware of consumers' growing concerns regarding product safety, environmental impact and the health, safety and welfare of workers and animals". "To reflect both its global reach and its goal of becoming the leading international G.A.P. standard, EUREPGAP changed its name to GLOBALG.A.P. in 2007" and has certification programs in more than 100 countries. Its Aquacultural Standards cover food safety, environmental, social and animal welfare requirements for feed, hatchery and farming operations. GLOBALG.A.P operates as a business to business program with a consumer facing traceability code. It asserts that 35 countries have adopted GLOBALG.A.P. Aquaculture Certification, covering 30 species from the finfish, crustaceans and molluscs groups. The 2015 5th version of their standards added "detailed criteria relating to animal welfare that are specific to aquaculture activities."

GlobalG.A.P., ASC and the Global Aquaculture Alliance have cooperated closely towards achieving efficiencies across the three programmes and developing combined audit check lists.

Friend of the Sea
Milano, Italy
Friend of the Sea's aquaculture standards have, as principal criteria:

- no impact on critical habitat (e.g. mangroves, wetlands, etc.);
- compliance with water quality parameters;
- reduction of escapes to negligible levels;
- no use of harmful antifouling nor growth hormones;
- compliance with social accountability;
- reduction of carbon footprint.

Others

Also noteworthy, RSPCA Assured (previously Freedom Food), which is the RSPCA's ethical food label dedicated to farm animal welfare has two finfish aquaculture standards, covering Atlantic salmon (Salmo salar) and rainbow trout (Oncorhynchus mykiss).

The International Federation of Organic Agriculture Movements (IFOAM), started in the early 1970's and now commonly known as IFOAM – Organics International, represents close to 800 affiliates in 117 countries. IFOAM operates an Aquaculture Forum, has an EU Aquaculture Expert Group and makes detailed contributions to the EU's OrAqua Recommendations for a future European regulation on organic aquaculture while maintaining its own, more general, norms and standards, which include focus on aquatic animal health and welfare (see pp 53-57). The EU Organic Aquaculture regulation covers animal welfare more extensively than most standards.

Label Rouge (Red Label) is intended as a sign of quality assurance in France. Label Rouge-certified aquaculture products include shrimp from Madagascar, salmon products from Scotland, Norway and Ireland, farmed bass from the Mediterranean, as well as trout, turbot and maigre (Argyrosomus regius). Red label standards have typically emphasized animal welfare.

In 2017, The Open Philanthropy Project initiated grants for:

- the Aquaculture Stewardship Council to develop a fish welfare standard that "is applicable to all eligible ASC-certified species and recognized globally."
- the Global Aquaculture Alliance (GAA) via the Responsible Aquaculture Foundation to develop best practices and proposed animal welfare standards for three farmed fish species. "GAA will seek to identify welfare best practices for salmonids, tilapia, and channel catfish by reviewing existing research, surveying commercial practices, and conducting lab and field trials for validation. If best practices are successfully identified, GAA will share these with industry leaders at its annual meeting, and propose them for inclusion in the Best Aquaculture Practices (BAP) Standards, a large and influential aquaculture certification program."
- Global Animal Partnership (GAP) to develop welfare standards for farmed fish species. "GAP will seek to develop standards for 4-6 farmed fish species (beginning with salmon) by establishing a partnership with an existing aquaculture certification program and developing a multi-step framework for farmed fish based on land animal models. GAP also intends to develop a strategy for raising consumer awareness of farmed fish welfare, and to run a promotional campaign for the launch of their initial salmon certification program."
- fair-fish international association (FFI) for "a farmed fish welfare assessment and standards project. FFI's research team, FishEthoBase, will work jointly with fish welfare certifier Friend of the Sea (FOS) to assess fish welfare at approximately 50% of all FOS-certified farms. Findings from these assessments will then be used to create farm-specific improvement recommendations and to develop animal welfare criteria for possible inclusion in FOS standards. Additionally, FFI plans to share its findings through formal presentations at academic and industry conferences."

In the March 2018 issue of World Aquaculture Paolo Bray, Founder and Director of Friend of the Sea, which was co-recipient of one of those grants, wrote: “The role of seafood certification programs is not only one of providing consumers with an ecolabel to make a more environmentally aware choice. They have the potential to drive major changes in the industry and lead shipowners, fish producers and processing companies to introduce gradually fish welfare rules and procedures in their company policies. The development of such certification schemes and their harmonization at an international level, with technological improvements in the industry, will contribute to reduce environmental impact, protect marine habitats, and improve welfare of farmed and wild-caught fish worldwide.”

In Metagoverning Aquaculture Standards: A Comparison of the GSSI, the ASEAN GAP, and the ISEAL (Dec, 2017), Samerwong, Bush and Oosterveer compared three “metagovernance arrangements” that aim to provide quality assurance for eco-certification standards in aquaculture. Their findings indicated that the three systems differed “with respect to their goals and approaches and do not seem to directly reduce confusion”.

With more than 29 eco-certification standards in operation for aquaculture, variously developed by NGOs, governments or corporate entities, the authors addressed the question as to whether the proliferation encourages ambition to achieve higher goals or whether standards may instead “put accessibility by producers above measurably improved production practice.” In particular, they examined:

1) The Global Sustainable Seafood Initiative (GSSI), which was started in 2016 funded by the German development agency GIZ and a consortium of retailers, aims to reduce duplication and increase comparability between certification schemes. “The review process for standards that apply for GSSI recognition is then carried out first by experts before public consultation and before being sent to a steering board for final review.”

2) The International Social and Environmental Accreditation and Labelling Alliance (ISEAL), was created in 2002 by “a group of sustainability standard-setting organizations including the Forest Stewardship Council, the International Federation of Organic Agriculture Movements, Fairtrade International, and Marine Stewardship Council.”

3) the Association of Southeast Asian Nations Good Aquaculture Practices for shrimp (ASEAN Shrimp GAP) was started in 2011 as an intergovernmental initiative of 10 ASEAN member countries in an effort to align and strengthen national standards and improve credibility in export markets. It is thought that that process may lead to a single uniform standard or, instead, mutual recognition of existing, differing national standards.

In November 2017, Hakai Magazine published an article by Raina Deslisle *The Ecolabel Fable -- Buyer beware: sustainable seafood programs can’t guarantee ocean-friendly choices*. In it, she expressed the concern that competition in the ecolabel market has been “driving down standards as programs seek to capture more market share. Ecolabels were supposed to make it easier to eat sustainably, but now consumers have to sort through a cornucopia of claims and figure out whether or not the information is accurate.”

Deslisle examined local use in Vancouver of an Ocean Wise label that substantially relies on SeaFood Watch analyses, and she also drew in large part on the 2017 *What's Behind the Label?* report released by SeaChoice that reviewed practices of MSC and ASC in Canadian fisheries and aquaculture systems and alleged a variety of deficiencies. That SeaChoice publication was accompanied by separate technical reports regarding MSC and ASC certifications. MSC issued a response and ASC did also.

In Eco-certification of Farmed Seafood: Will it Make a Difference? (2013), M Jonell wrote: "The potential of eco-certification to reduce the negative environmental impacts of aquaculture at scale presently appears uncertain as: (a) certification schemes currently focus on species predominantly consumed in the EU and US, with limited coverage of Asian markets; (b) the share of certified products in the market as currently projected is too low; (c) there is an inequitable and non-uniform applicability of certification across the sector; (d) mechanisms or incentives for improvement among the worst performers are lacking; and (e) there is incomplete coverage of environmental impacts, with biophysical sustainability and ecosystem perspectives generally lacking."

Among the environmental impacts of aquaculture that she cited were:

- Biodiversity loss
- salinization of soil and fresh water
- overfishing of forage fish for fish meal and fish oil
- impacts orginating from crop production for feed
- leakage of nutrients, pesticides, disinfectants, antibiotics
- escapes of non-native species
- spread of diseases and parasites to wild populations
- energy consumption throughout the lifecycle

A 2009 paper by Thrane et al, *Eco-labelling of wild-caught seafood products* focused on life cycle analyses of fishing finding that "energy consumption and emissions of anti-fouling agents at the fishing or harvesting stage contribute with significant impacts that are not being addressed by international labelling initiatives for wild-caught seafood. LCA studies show that significant environmental impacts are related to the life cycle stages after landing. This includes fish processing, transport, cooling and packaging (especially for highly processed seafood products). Hence, another challenge would be to include criteria related to the post-landing consumption of energy, certain materials and chemicals, waste handling and wastewater emissions."

International Organization for Standardization (ISO)

Geneva, Switzerland

Description: ISO is an independent, non-governmental international organization with a membership of 165 national standards bodies.
Summary: Through its members, ISO brings together experts to share knowledge and develop voluntary, consensus-based, market-relevant International standards that support innovation and address global challenges. It has been developing a variety of standards related to ISO/TC 234 - Fisheries and aquaculture.

These include:

- **ISO 12877:2011:** Traceability of finfish products -- Specification on the information to be recorded in farmed finfish distribution chains. (As background, see: New ISO standard on traceability of fish products will help improve food safety)
- **ISO 12878:2012:** Environmental monitoring of the impacts from marine finfish farms on soft bottom
- **ISO 16488:2015:** Marine finfish farms -- Open net cage -- Design and operation
- **ISO 16541:2015:** Methods for sea lice surveillance on marine finfish farms
- **ISO 16741:2015:** Traceability of crustacean products -- Specifications on the information to be recorded in farmed crustacean distribution chains
  ISO 18537:2015: Traceability of crustacean products -- Specifications on the information to be recorded in captured crustacean distribution chains
- **ISO/NP 22948**: Carbon footprint for seafood -- Product category rules (CFP-PCR) for finfish

Additional United Nations Bodies and Events

UN Ocean Conferences, 2017 and 2020

In June 2017, in New York City, there was a high-level United Nations Conference to Support the Implementation of Sustainable Development Goal 14. It included adoption of an intergovernmentally agreed declaration: "Our Ocean, Our Future: Call for Action."

A second UN Ocean Conference, also aimed at supporting implementation of SDG 14, was scheduled to be held in Lisbon from June 2-6, 2020 with the theme: “Scaling up ocean action based on science and innovation for the implementation of Goal 14: stocktaking, partnerships and solutions.” However, due to the COVID-19 pandemic, it was repeatedly postponed and, in February, it was decided that it could not be held at all in 2021.

Communities of Ocean Action (COA)

Following the 2017 UN Ocean Conference, nine Communities of Ocean Action (COA) were formed aiming to highlight and promote voluntary commitments announced in the context of the Conference and thereafter, each with one of these focus areas:

1. Coral reefs
2. Implementation of international law as reflected in United Nations Convention on the Law of the Sea
3. Mangroves
4. Marine and coastal ecosystems management
5. Marine pollution
6. Ocean acidification
7. Scientific knowledge, research capacity development and transfer of marine technology
8. Sustainable blue economy
9. Sustainable fisheries

The COAs each maintain a Registry of Voluntary Commitments that remains open for stakeholders to register their ocean action in support of SDG 14 and to share updates on implementation on an ongoing basis. Members of each COA can share expertise, knowledge, and best practices and participate in a Knowledge Forum.

UN Sustainable Development Group (UNSDG)

New York, NY
"The United Nations Sustainable Development Group (UNSDG) unites the 34 UN funds, programmes, specialized agencies, departments, and offices that play a role in sustainable development." Its Regional teams assist UN Resident Coordinators and UN country teams to implement the UNDG strategic priorities by identifying the "national policies, programmes and capacity development gaps and challenges, to which the UN system can best contribute."

United Nations Conference on Trade and Development (UNCTAD)

Geneva, Switzerland
UNCTAD aims to help countries to use trade, investment, finance, and technology to promote inclusive and sustainable development, and promotes partnerships between governments, the private sector and civil society.

It encourages *Learning to scale fisheries for better livelihoods* stating that its fisheries diversification training programme is having a tremendous ripple effect and that it has created a multi-sector task force of key ministries, the private sector and civil society to develop a model for developing aquaculture. An UNCTAD staffer is quoted as stating, "We have already seen tangible impacts, with concrete changes in domestic legislation, institutions and policies in some of the participating countries, The policy and legislative changes are one development in what we anticipate will be a slew of knock-on impacts that will re-shape fisheries and aquaculture in economies that need it the most."

"UNCTAD has been preparing a curriculum on fisheries development in partnership with the:
* International Organization for Standardization (ISO)
* Marine Stewardship Council (MSC)
* International Maritime Organization (IMO)
* Royal Tropical Institute of the Netherlands (KIT)
* academic partners of Nha Trang University, Viet Nam.
* Fishery Research Center of Mauritius
* Environment for Development (EfD) Initiative at the University of Gothenburg"

And UNCTAD has published, Building the Capacities of Least Developed Countries to Upgrade and Diversify Fish Exports: Training Manual

UN High-Level Political Forum on Sustainable Development (HLPF)

New York City, USA
The HLPF is the main United Nations platform on sustainable development and it has a central role in the follow-up and review of the 2030 Agenda for Sustainable Development the Sustainable Development Goals (SDGs) at the global level. It meets each year under the

auspices of ECOSOC and every four years at the level of Heads of State and Government under the auspices of the General Assembly.

"The establishment of the United Nations High-level Political Forum on Sustainable Development (HLPF) was mandated in 2012 by the outcome document of the United Nations Conference on Sustainable Development (Rio+20), "The Future We Want".

A coalition of NGOs has been formed known as the Animal Issues Thematic Cluster (AITC) that engages in HLPF activities while aiming to ensure that the care, protection, and conservation of animals is included in the sustainable development agenda.

UN Intergovernmental Oceanographic Commission (IOC)

Paris, France

The Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) is the organization for marine science within the UN system. It coordinates programmes in research, services and capacity-building, in order to learn more about the nature and resources of the ocean and coastal areas and to apply that knowledge to promote sustainable development, protect the marine environment, and enhance decision-making processes of Member States.

It has subdivisions:

- IOC CARIBE for the Caribbean and Adjacent Regions
- IOC WESTPAC for the Western Pacific
- IOC AFRICA for Africa and the Adjacent Island States

Publications include:

- The Ocean is Losing its Breath: Declining Oxygen in the World's Ocean and Coastal Waters
- The Science we need for the ocean we want: the United Nations Decade of Ocean Science for Sustainable Development (2021-2030)

The United Nations Institute for Training and Research (UNITAR)

Geneva, Switzerland

“The United Nations Institute for Training and Research (UNITAR) provides innovative learning solutions to individuals, organizations and institutions to enhance global decision-making and support country-level action for shaping a better future.

"UNITAR was created in 1963 to train and equip young diplomats from newly-independent UN Member States with the knowledge and skills needed to navigate through the diplomatic environment.

"Over the years, UNITAR has acquired unique expertise and experience in designing and delivering a variety of training activities. We have become a leading institute in the provision of customized and creative learning solutions to institutions and individuals from both public and private sectors.

"With a strategy fully focused on achieving the Sustainable Development Goals (SDGs), UNITAR supports Governments to implement the 2030 Agenda."

UN Educational, Scientific and Cultural Organization (UNESCO)

Paris, France
Description: The remit of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) is the coordination of international cooperation in education, science, culture and communication.
Summary: UNESCO's global priorities are Africa and Gender Equality. Its overarching objectives are achieved through a medium-term strategy and are a culture of peace and sustainable development.
Organization Type: UN Specialized Agency
Issue Areas: UNESCO's themes include education, learning to live together and One Planet, One Ocean.

Fish Activity: "UNESCO's Intergovernmental Oceanographic Commission (IOC-UNESCO) strives to promote intergovernmental cooperation in order to generate knowledge about the nature and resources of the ocean and coastal areas and to apply that knowledge to management, sustainable development, marine environment protection, and decision-making processes within its Member States. The Commission also seeks to improve society's relationship with the ocean through the development and dissemination of scientific knowledge and by educating the general public on how to respond effectively to the unprecedented environmental changes and human activities now impacting the world's ocean."

UN International Labor Organization (ILO)

Geneva, Switzerland
"The only tripartite U.N. agency, since 1919 the ILO brings together governments, employers and workers of 187 member States to set labour standards, develop policies and devise programmes promoting decent work for all women and men."

"The unique tripartite structure of the ILO gives an equal voice to workers, employers and governments to ensure that the views of the social partners are closely reflected in labour standards and in shaping policies and programmes."

In respect to fishing, ILO states:
"Fishing is one of the most challenging and hazardous occupations. ILO is working to ensure decent work for all fishers. The ILO's international labour standard concerned specifically with work on board fishing vessels is the Work in Fishing Convention, 2007 (No. 188). This Convention demonstrates the renewed commitment by the ILO to ensure decent work in fishing. It aims to ensure decent conditions of work with regard to minimum requirements for work on board; conditions of service; accommodation and food; occupational safety and health protection; medical care and social security. A major effort is underway in the ILO to achieve widespread ratification and implementation of the Convention. Convention No. 188 is

a valuable tool for addressing issues concerning migrant fisher and eliminating forced labour and child labour in the fishing sector."

United Nations Industrial Development Organization (UNIDO)

Vienna, Austria

A UN Specialized Agency, the mission of UNIDO is to: “to promote and accelerate inclusive and sustainable industrial development (ISID) in Member States. While it does not emphasize fisheries or aquaculture as a major focus area, these are some examples of fish related projects supported by UNIDO:

- UNIDO strengthens support for the management and development of Ethiopia's fisheries and aquaculture
- Empowering women in Djibouti through dry fish-processing training
- Good Fish | UNIDO
- SMART-Fish Indonesia – UNIDO (focus on seaweed as well as on Pangasius, and pole and line caught Tuna)
- Foresight study on the productive chain of the fishery industry in the region of the South American Pacific coast
- UNIDO to further strengthen fishery value chains in Latin America

International Finance Institutions

There is great variation in the degree to which international financial institutions have been providing financial assistance to marine fishery and aquaculture projects. Material below about many of those institutions provides synopses of a variety of projects that have received support. Noteworthy are the guidelines that many of them have in place to guide their decision-making. These, for example, are among those worth examining.

- Operational guidelines regarding capture fisheries and aquaculture of the West African Development Bank (BOAD)
- Guidelines on ASEAN Good Aquaculture Practices (ASEAN GAqP) for Food Fish
- Environmental and Social Guideline: Aquaculture Guidelines of the European Bank for Reconstruction and Development (EBRD)
- Environmental and Social Guideline: Commercial Fishing of the European Bank for Reconstruction and Development (EBRD)

A few international financial institutions are additionally highlighted that have not supported fishing or aquaculture and whose interests may potentially make them relatively sympathetic to The Good Food Institute’s sustainable seafood initiative as outlined in its 2019 document: *An Ocean of Opportunity: Plant-based and clean seafood for sustainable oceans without sacrifice*.

Global Environment Facility (GEF)

Washington, DC, USA

The Global Environment Facility (GEF) is an international institution dedicated to investing in the joint management, care and restoration of our planet. It is a partnership of 18 agencies,

including United Nations agencies, multilateral development banks, national entities and international NGOs, working with 183 countries to address environmental issues.

Eighteen institutions act as GEF Agencies. Those are:
Asian Development Bank (ADB); African Development Bank (AfDB); European Bank for Reconstruction and Development (EBRD); Food and Agriculture Organizaton of the United Nations (FAO); Inter-American Development Bank (IADB); International Fund for Agricultural Development (IFAD); United Nations Development Programme (UNDP)'s; United Nations Environment Programme (UNEP); United Nations Industrial Development Organization (UNIDO); The World Bank Group (WBG); Conservation International (CI); Development Bank of Latin America (CAF); Development Bank of Southern Africa (DBSA); Brazilian Biodiversity Fund (FUNBIO); International Union for Conservation of Nature (IUCN); West African Development Bank(BOAD); Foreign Economic Cooperation Office, Ministry of Environmental Protection of China (FECO) and World Wildlife Fund (WWF-US).

Since its establishment, the GEF has provided over US$14 billion in grants and mobilized in excess of $70 billion in additional financing for more than 4,000 projects. Its focus includes biodiversity, climate change, fisheries, food security (including sustainable food systems) and the illegal wildlife trade.

International Fund for Agricultural Development (IFAD)

Rome, Italy
IFAD is a specialized agency of the United Nations and an international finance institution that focuses on supporting food production projects in developing countries together with smallholder farmers, pastoralists, artisanal fishers and other rural people. Its mission is to enable poor, rural people to overcome poverty. It provides low-interest loans and grants to developing countries and mobilizes cofinancing from Member States, developing countries and project participants themselves. In 2017, it approved a programme of loans and grants of US$1.3 billion about 50% of which would be deployed in Africa.

IFAD works with civil society, including NGO partnerships, and has developed a strategic framework for 2016-2025.

IFAD's Independent Office of Evaluation in December, 2018 issued a report synthesizing its evaluation of *IFAD's support to livelihoods involving aquatic resources from small-scale fisheries, small-scale aquaculture and coastal zones*. Some extracts below:

"The report found that IFAD financial resources allocated to aquatic resources have been relatively stable, at 8.4 per cent of the Fund's portfolio over 38 years. However, frequently the aquatic resources components were 'added on' to broader rural and agricultural development projects, and tended to be neglected during implementation. A related factor was the lack of in-house technical expertise on aquatic resources until 2015, which limited IFAD's organizational capacity to identify lessons and generate knowledge from its own experience. "

“IFAD achieved notable successes in some countries, in particular where it engaged in fisheries or aquaculture over several years. In the aquaculture subsector, IFAD supported a string of projects in Bangladesh, where it introduced innovative approaches to aquatic resources management. In the marine fisheries subsector IFAD’s interventions tended to be more effective, for example in Mozambique, partly because the focus was exclusively on fishing communities. In general, project designs and approaches were such that did not reach out directly to the poorest households and there was no evidence available that ‘trickledown’ approaches benefited the most vulnerable within IFAD’s traditional target groups. Considering that worldwide, approximately 50 per cent of those engaged in fisheries are women, IFAD’s projects often missed the opportunity to address gender inequalities and to empower participating rural women.”

“In-house staff resources facilitate collaboration. Collaboration between IFAD and some of its partners has increased since IFAD has had a full-time staff member dedicated to aquaculture and fisheries. There is room to improve the existing partnerships with organizations that have a high comparative advantage with respect to technical issues, such as the Food and Agriculture Organization of the United Nations (FAO) and WorldFish, through more systematic and timely planning in the early stages of project conceptualization.”

“In addition, roads and markets were built and in general people largely benefited from the roads. The use of ice for better conservation of fish on board and on land spread slowly, partly as a result of IFAD supported projects; over time, challenges to the production and distribution of ice decreased. Less evidence is available in terms of results from improved processing and marketing and in improving access for fishers and fishmongers to suitable rural financial services.”

“While there are cases where project benefits did accrue to the poorest of the poor, for instance among beel fishers in Bangladesh and certain groups of marine capture fishers in Mozambique… Available evidence indicates that the poorest households have frequently not been the primary beneficiaries, and that IFAD interventions have frequently tended to favour those whose pre-existing assets and entitlements allow them to take advantage of IFAD’s investments. Evaluations suggests that there is no guarantee that “trickle-down mechanisms” from value chain development approaches will necessarily benefit the poor unless these are embedded in explicit and careful frameworks that include measures for reaching out to the poorer segments of the population… Furthermore, more attention should be given to emerging issues such as Safety at Sea and the Decent Work Agenda, which have direct relevance for the livelihoods of all poor people.”

The Report’s recommendations included that IFAD
1) should maintain a sustained engagement in aquatic resources-relevant interventions to benefit both producers and consumers of aquatic products because of the importance of these resources to the livelihoods of large numbers of IFAD’s primary target population.
2) should develop more partnerships with those organizations that have specific technical expertise in the aquatic resources sector
3). should preferably address aquatic resources management through projects mostly or fully focused on the aquatic sector/subsectors.

4) should better address and integrate various social development issues, including gender equality, inclusion of youth, decent work aspects, rights and obligations of beneficiaries and other stakeholders defined in legal terms
5) should more consistently address and integrate the environmental sustainability of the resource base and the need to enhance the resilience to climate change of those among its target population whose livelihoods depend on aquatic resources. In this respect, the recent and ongoing initiatives that introduced alternative livelihoods for fishing communities should be a source of lessons learned for the entire Fund.

Management in its response, generally agreed with the analysis, while indicating that post-2009 it had improved its procedures including providing more attention to climate, environment, and aquatic ecosystem issues.

World Bank Group

Washington, DC, USA
The World Bank Group is a global partnership of five institutions working for sustainable solutions that reduce poverty and build shared prosperity in developing countries. It consists of five organizations:
1) The International Bank for Reconstruction and Development (IBRD) provides loans, guarantees, risk management products, and advisory services to middle-income and creditworthy low-income countries, as well as by coordinating responses to regional and global challenges.
2) The International Development Association provides interest-free loans and grants to governments of the poorest countries.
3) The Multilateral Investment Guarantee Agency (MIGA) promotes foreign direct investment into developing countries to support economic growth, reduce poverty, and improve people's lives. It offers guarantees)to investors and lenders.
4) The International Centre for Settlement of Investment Disputes (ICSID) provides international facilities for conciliation and arbitration of investment disputes.
5) The International Finance Corporation (IFC) is the largest global development institution focused exclusively on the private sector. It helps developing countries by financing investment, mobilizing capital in international financial markets, and providing advisory services to businesses and governments.

The IFC has published Good Practice Notes on Animal Welfare in Livestock Operations in 2006 and 2014, asserting that its approach to animal welfare "must balance economic, environmental, and social objectives, while being mindful of clients' objectives and the market environment in which they operate."

The World Bank has Environmental and Social Safeguards (ESS), which include animal husbandry and make reference to the above IFC Good Practice Notes in relation to large-scale commercial farming. The ESS refers to Good International Industry Practice (GIIP). And the Bank is now working to develop Animal Welfare Good Practices in Agriculture Development. This will be a long-term project, covering various species of farm animals, transport, slaughter and working equines. The Steering Group for the project consists of the World Bank, FAO, OIE, the World Federation for Animals, and Wageningen University.

In 2018, announcing an initiative to raise $3 billion US dollars in new sustainable development bonds, the World Bank stated that it "works with countries to promote strong governance of marine and coastal resources to support sustainable fisheries and aquaculture, make coastlines more resilient, establish coastal and marine protected areas, and reduce pollution. This 'Blue Economy' approach supports economic growth, social inclusion and the preservation or improvement of livelihoods while at the same time ensuring the environmental sustainability of oceans and coastal areas. The World Bank's active Blue Economy portfolio is worth US $3.7 billion."

As an example of a project receiving World Bank support, a $40 million USD loan was provided to the Peruvian National Program for Innovation in Fisheries and Aquaculture for a project with four components: "promotion of innovation in the fishing sub-sector; promotion of innovation in the aquafarming sub-sector; strengthening of the National System for the Innovation of Fishing and Aquafarming, as well as of institutions and policies to improve governance of fishery and aquafarming systems; and, strengthening of the institutional and organizational capacity of the Ministry of Production's Vice-ministry for Fishing and Aquaculture necessary to successfully implement the project."

The Global Program on Fisheries, known as PROFISH, was established at the World Bank with the stated goal of engaging the Bank in improving environmental sustainability, human well-being, and economic performance in the world's fisheries and aquaculture, with a focus on the welfare of the poor in fisheries and fish farming communities in the developing world.

According to its web site, PROFISH has received financial and in-kind support from the UK, Iceland, France, New Zealand, Norway and Finland (through TFESSD), Japan, USA, FAO and the World Bank. The growing partnership includes regional economic organizations representing developing countries, including the African Union and the ASEAN Secretariat. Other PROFISH partners include FAO, IUCN, WorldFish, IFPRI, OECD, USAID, NOAA/NFMS, NEPAD, Strategic Partnership for Fisheries in Africa, Rare, CI, WWF, EDF, ICFA/ALLFISH, GAA and ISSF.

PROFISH played a lead role in coordinating the Blue Ribbon Panel to the Global Partnership for Oceans and its report Indispensable Ocean and its own publications include:

- PROFISH Strategic Vision for Fisheries and Aquaculture (2011)
- PROFISH: Reforming Fisheries and Aquaculture for Global Benefits Evaluation Report (2009)
- Sunken Billions Revisited: Progress and Challenges in Global Marine Fisheries (2017)
- Fish to 2030: Prospects for Fisheries and Aquaculture (2013)
- Sunken Billions: The Economics Justification for Fisheries Reform (2009)
- Rising to Depletion? Towards a Dialogue on the State of National Marine Fisheries (2009)
- Reducing Disease Risk in Aquaculture (2014)
- Climate Change Adaptation in Fisheries and Aquaculture: Compilation of Initial Examples (2014)

Continental Unions and Regional Economic Communities

African Union

Addis Ababa, Ethiopia
The African Union (AU) is a continental union consisting of all 55 countries on the African continent.

The African Union Interafrican Bureau for Animal Resources (AU-IBAR), which is a specialized technical office of the African Union Commission, has taken leadership for the development of animal welfare across Africa. AU-IBAR has worked with its partners to develop an Animal Welfare Strategy for Africa (AWSA) and a four-year action plan. The AWSA and the implementation mechanism, the African Platform for Animal Welfare (APAW), were validated in July 2017 at African Union Commission Headquarters in Addis Ababa, Ethiopia.

Now that the continental Regional Animal Welfare Strategy has been validated, there will be opportunities for animal protection technical assistance and implementation support at all levels (continental, REC, and country). A number of APOs have been included on the African Platform for Animal Welfare.

AU-IBAR is encouraging the development of further Regional Animal Welfare Strategies (RAWS) at REC level, with an initial focus on support for the development of strategies for the Economic Community of Central African States (ECCAS) and the Economic Community of West African States (ECOWAS). This will provide further opportunities for advocacy and implementation support at REC level in Africa.

The New Partnership for Africa's Development (NEPAD) is a program of the African Union (AU) whose objective is to enhance Africa's growth, development and participation in the global economy. NEPAD is responsible for providing technical expertise and support for agriculture across Africa, but currently has very little focus on animal welfare and some representatives may view it primarily as a trade barrier.

AU-IBAR has been establishing "African Centres of Excellence in Fisheries and Aquaculture." As of 2018, short-listed institutions were in Nigeria, Malawi, Egypt and South Africa. And, with NEPAD, it has been implementing a Fisheries Governance Project specifying these desired outcomes:

- Result 1: Institutional capacity and regulatory frameworks for sustainable fisheries management improved.
- Result 2: Sustainable fisheries management in small-scale fisheries including inland water bodies enhanced.
- Result 3: Institutional capacity and regulatory framework for aquaculture development strengthened.
- Result 4: Advocacy, Lessons Learning for knowledge sharing and capacity for increased investments and fostering reforms in the fisheries sector enhanced.

It also has initiated "The Fish Trade Project: Improving Food and Security and reducing Poverty through Intra-Regional Fish trade in Sub-Saharan Africa" which is implemented by

AU-IBAR, NPCA and WorldFish and aims to improve food and nutritional security and reduce poverty in Africa. That project aims to accomplish these results:

1. Information on the structure, products and value of intra-regional fish trade in food security in Sub Saharan Africa generated and made available to stakeholders.
2. A set of recommendations on policies, certification procedures, standards and regulations, well embedded in national and regional fisheries, agricultural, trade and food security policy frameworks in sub-Saharan Africa.
3. Increased capacities for trade amongst private sector associations, in particular of women fish processors and traders and aquaculture producers, to make better use of expanding trade opportunities through competitive small and medium scale enterprises.
4. Adoption and implementation of appropriate policies, certification procedures, standards and regulations by key stakeholders participating in intra-regional trade in four selected trade corridors in Sub-Saharan Africa.

AU-IBAR's Bulletin of Animal Health and Production in Africa published a special 283-page issue in November 2018: Fish and Fisheries Product Trade and Marketing.

Asia Pacific Economic Cooperation (APEC) Ocean and Fisheries Working Group

Singapore

The working group aims to

1. facilitate trade and investment opportunities that promote the sustainable use of fisheries, aquaculture, and marine ecosystem resources;
2. Ensuring the conservation and sustainable use of marine resources as well as protection of marine ecosystems needed to support fisheries and aquaculture; and
3. Promote a common approach to preventing illegal fishing and related trade.

Projects in 2018 included:

- Assessing the Economic Value of Green Infrastructure in Coastal Ecosystems to Disaster Risk Reduction, Response and Coastal Resilience in the APEC region
- Developing a Best Practice Global Value Chain Framework on Fisheries Micro, Small, and Medium Enterprises (MSMEs)
- Capacity Building for Marine Debris Prevention and Management in the APEC Region Phase 2 -- Implementation of Advanced Marine Debris Management Policies
- Exchange of Experience to Add Value to Organic Waste from Small-Scale Fisheries and Aquaculture through its Reuse and Conversion into Innovative Products, which Contribute to Enhance Food Security
- Developing an Action Plan on Illegal, Unreported and Unregulated (IUU) Fishing in APEC
- Study on the Origin and Distribution of Microplastics in Typical Marine APEC Region

European Union
Brussels, Belgium

The Deep Sea Conservation Commission reports that the EU Parliament in January 2017 implemented a new EU regulation banning all bottom trawling below 800 meters in EU waters of the Northeast Atlantic, and an obligation to close deep-sea areas to bottom fishing to protect vulnerable marine ecosystems.

For an examination of fish welfare in the European Union, please see: Looking Beneath the Surface: Fish Welfare in European Aquaculture, Eurogroup for Animals (2018)

Appendix 1: Resources on welfare of marine animals

Some resources that address the welfare of marine animals are listed below in chronological order. While most have a focus on farmed fish, the Dutch 2018 Fish Welfare report is broader in scope, also covering recreational fishing, fish in research, etc. And the 2017 article by Hessler et al has a particularly thorough examination of the welfare of fish in wild capture circumstances.

- Recommendation Concerning Farmed Fish, Council of Europe, by the Standing Committee of the European Convention for the Protection of Animals Kept for Farming Purposes (adopted by the Committee Dec 2005)
- The Welfare of Crustaceans at Slaughter, HSUS, Stephanie Yue, Ph.D
- The Welfare of Farmed Fish, Compassion in World Farming (2009)
- Legislation to Protect the Welfare of Fish, Kelly Levenda (2013)
- Opinion on the Welfare of Farmed Fish, Farm Animal Welfare Council, London (Feb 2014)
- Opinion on the Welfare of Farmed Fish at the Time of Killing, Andrew Butterworth, Farm Animal Welfare Council (May 2014)
- Investor Briefing No. 23 Animal Welfare in Farmed Fish, a Business Benchmark on Farm Animal Welfare publication authored by Martin Cooke, MRCVS (March, 2016)
- Humane Harvesting of Fish, Humane Slaughter Association (2016)
- Cruelty to Human and Nonhuman Animals in the Wild-Caught Fishing Industry, Kathy Hessler, Becky Jenkins and Kelly Levenda, 2017
- Fish Welfare, Report Prepared for the Council on Animal Affairs, The Netherlands, 2018
- Looking Beneath the Surface: Fish Welfare in European Aquaculture, Eurogroup for Animals (2018)
- Farmed Fish Welfare Report, Animal Charity Evaluators (Last Updated: April, 2019)

Most recent updates to this draft document: March, 2021.
11/2019: Added reference to Because the Ocean's Ocean for Climate Report (p. 17)
11/2019: Added reference to the UN Ocean Conferences and Communities of Ocean Action (p. 48)
3/2021 Many changes, mostly updates re: events that had been scheduled, including many COVID-19 related postponements.

Appendix II: Fish-Related Activities of Regional Development Banks

African Development Bank (AfDB)

Abidjan, Côte d'Ivoire
In addition to 54 African countries the Bank has more than two dozen non-regional member countries represented.

Fish-Related Activity: According to IFAD, “The African Development Bank hosts the Fisheries Transparency Initiative (FiTI), a global initiative that complements and supports other national, regional and global efforts to achieve responsible fisheries governance, and increase transparency and participation in fisheries governance for the benefit of a more sustainable management of marine fisheries. AfDB also hosts the African Natural Resources Centre (ANRC), which intends to advise Regional Member Countries on carefully selected aspects of policy formulation and implementation concerning natural resources management including fisheries. In addition, AfDB has financed investment projects in countries such as Angola, Gabon, Madagascar, Uganda, and Sao Tome and Principe. At the regional level, it has supported the Maritime Communication Network on Lake Victoria and, with the South African Development Community, monitoring, control and surveillance of illegal fisheries."

An example of a major supported project:
The Aquaculture Enterprise Develoment Project in Zambia
The development goal is to develop a domestic aquaculture subsector which serves as viable and inclusive business opportunity through enhanced production and productivity to improve the livelihoods of men and women beneficiaries along the aquaculture value chain."
The project has three (3) components namely: a) Support to Aquaculture Entrepreneurs; b) Support to Growth Enabling Infrastructure and c) Project Management and Institutional Capacity Building. The total project cost is USD 50.89 million with an ADB loan of USD 45.4 million (89.2%) and GRZ contribution of USD 5.49 million (10.8%).
"The rationale for this intervention is premised on the fact that Zambia is endowed with abundant water resources, which support largely fresh water capture fisheries and in recent years, aquaculture. The potential of the major lakes of Tanganyika, Mweru-Luapula, Bangweulu, Kariba and Itezhi-tezhi (the latter two man-made) and major rivers of Zambezi, Kafue, Chambeshi and Luangwa as well as Lukanga swamps, which can readily support both capture and aquaculture fisheries development, have not been fully tapped.
"The Bank has also gathered experience supporting the Fisheries sector in quite a number of African countries including Rwanda, Malawi, Sierra Leone, Uganda etc."

FAO and the WorldFish Center have been identified as well placed to continue supporting the Government of Zambia and will be directly contracted for specific tasks: (WorldFish Center: genetic improvement of local species programme, FAO: Food safety activities, Aquatic Animal Health management, Training of commercial banks with respect to aquaculture and related risks, feed certification laboratory and capacity, national statistics and information).

Arab Bank for Economic Development in Africa (BADEA)

Khartoum, Sudan

The Arab Bank for Economic Development in Africa (BADEA) promotes "Afro-Arab cooperation through a variety of operational modalities and instruments guided by multi-years strategic plans."

BADEA's 2015-2019 five-year plan aimed to:

1. Support development in Sub-Saharan African countries through financing projects in both public and private sector,
2. Provide technical assistance to beneficiary countries in the field of Human and Institutional Capacity Development.
3. Encourage Arab exports to African countries.

According to the 2015-2019 five-year plan:

- Infrastructure sector should have an allocation between 40 -50% of the resources of the Plan;
- Agriculture and Rural development sector is to receive between 25-30% of the resources of the Plan;
- Human resources development and social sector are to receive between 20-25% of the resources of the Plan

Fish-Related Activity: According to the *2014 Annual Report*, two funded projects were:

1) Regional Training Workshop on Aquaculture

Objective: "The objective of the workshop is to strengthen the capacity of African cadres working in the field of fisheries and aquaculture to increase production and enhance the strategy for food security. The Arab Organization for Agricultural Development (AOAD) will execute the training session for the benefit of 20 English-Speaking African cadres. The training will be executed at the headquarters of the regional office of the AOAD, in Cairo (Egypt).

Training contents:

- Principles of aquaculture,
- Latest innovations in practices,
- Aquatic environment suitable for aquaculture,
- Fertilization of water and natural nutrition,
- Hatchery of fish and shellfish,
- Mechanisms and modern tools to stimulate aquaculture,
- Problems pertaining to aquaculture,
- Introduction of the latest technologies in the field of aquaculture,
- Control of fish diseases and practical training on treatment and nutrition,
- Field visit to Alexandria and Kafr Alshiekh (Egypt)."

2) Mozambique: Construction of Fisheries and Marine Polytechnic

Project Objectives: "The project aims to contribute to human resources development in the field of fisheries in line with the strategic and educational policy of the country. It also aims to

provide graduates with scientific skills and related technologies, which will enable them to meet the needs of the fisheries sector and marine services, thus contributing to the development of this sector to support the country's economy. The project is an important addition to the development of human resources in order to enable individuals and communities to set up private companies and engage in productive activities along the coast and in the inland areas… Project Financing Plan: BADEA contributes with $9.90 million to the project financing (about 90.00% of the total project cost), and The Government contributes with $1.10 million (about 10.00% of the total project cost).”

Arab Fund for Economic and Social Development (AFESD)

Kuwait City, Kuwait
The Arab Fund for Economic and Social Development (the Arab Fund), is an Arab regional financial institution with all Arab countries as members. Priority is given to financing joint Arab projects of particular importance and specifically to those projects that increase the interdependence of Arab countries.

"The emphasis on contributing to projects involving the interconnection of electrical power, transportation and communications. The Arab Fund also pays close attention to social development and reducing poverty by financing projects covering health care, education, drinking water, rural development, and social welfare."

Fish-Related Activity: In recent years there has been very little funding of fishery and aquaculture projects. A rare exception was a grant to the Republic of Yemen for "Agricultural and Fisheries Development in the Hadramout Coastal Area". that included, "Al-Shahar Fishing Harbour: This part consists of the following two major components: Civil Works and Equipment: It consists of all the civil works required for the construction of the fishing harbour including buildings, roads, water tanks and networks, sewers, a wastewater treatment plant and a fuel station. It also includes all electro-mechanical installations and equipment needed to store and freeze the produced fish at the harbour."

Asian Development Bank (ADB)

Mandaluyong City, Philippines

"The Asian Development Bank was conceived in the early 1960s as a financial institution that would be Asian in character and foster economic growth and cooperation in one of the poorest regions in the world."

ADB has grown to encompass 67 members, of which 48 are from within Asia and the Pacific and 19 outside.

Fish-Related Activity: According to IFAD, "The Asian Development Bank dedicated 1.2 per cent of its cumulative lending to the fisheries sector between 1968 and 2005. An evaluation of the corporate fisheries policy found that the sector had not performed well compared to the agriculture and natural resources sector. As of 2005, ADB had no in-house experts on fisheries and the evaluation in 2006 stated that ‘The limited internal expertise can affect the quality and performance of ADB's fisheries-related portfolio’. In the marine fisheries subsector,

reasons for project failure ranged from inappropriate project design, poor design of fishing vessels, inadequate fisheries resource/stock assessment during project preparation and lack of beneficiary participation. Similar factors were behind the low ratings of the aquaculture projects. Recommendations included:

- Developing strategic partnerships with international institutions with expertise in the fishery sector to compensate for the lack of internal expertise;
- Integrating fisheries into broader rural development approaches to promote sustainable livelihood opportunities, create alternative employment, safeguard the environment, protect biodiversity, and promote ecosystem-based management, conservation, and integrated coastal resource management;
- Reclassifying ADB's assistance to aquaculture and include it under agriculture sector development."

According to the Bank's 2005 publication *An Evaluation of Small-Scale Freshwater Rural Aquaculture Development for Poverty Reduction (2005).*

“The Policy on Fisheries of the Asian Development Bank (ADB) is anchored on (i) equity in balancing the interests of competing resource users, (ii) sustainability in conservation and use of fisheries and aquatic resources, and (iii) efficiency in the development and management of aquatic resources. For aquaculture, ADB's Policy on Fisheries emphasizes increasing production from existing aquaculture farms and coastal areas, and integration of aquaculture with existing crop and livestock farms. ADB also supports aquaculture development through research and development, dissemination of environmentally-friendly technologies, and provision of unsubsidized inputs and financial services, including microfinance.”

Asian Infrastructure Investment Bank (AIIB)

Beijing, China

The Asian Infrastructure Investment Bank (AIIB), the world's first multilateral development bank exclusively dedicated to infrastructure projects. AIIB' Mandate is: Sustainable economic development, wealth creation and improvement of infrastructure connectivity in Asia. Promotion of regional cooperation and partnership to address development challenges.

AIIB has both regional and non-regional member countries. Top shareholders are: China, India, Russia, Germany and Korea in that order.

Fish-Related Activity: According to AIIB’s Environmental and Social Framework (2016)
"The Bank will not knowingly finance Projects involving the following:
(xiii) Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats."

Black Sea Trade and Development Bank (BSTDB)

Thessaloniki, Greece

The Black Sea Trade and Development Bank (BSTDB) was established by Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Turkey and Ukraine. It started operations in June 1999 and supports economic development and regional cooperation in the Black Sea Region through trade and project finance lending, guarantees,

and equity participation in private enterprises and public entities in the member countries. BSTDB has published its Environmental and Social Policy (2014).

Fish-Related Activity: The Bank's Albania strategy document includes:
Some areas which the government of Albania has identified as potential for our financing are the following: The agribusiness sector is in need of adequate medium term financing to expand operations and to increase exports. Agribusiness is one of the economic activities recording one of the highest rates of growth in recent years. Food and fish processing has been one of the fastest growing subsectors of the Albanian food processing industry and is export intensive.
[…]
Fish processing is a strong industry developed within the last 15 years, with considerable export potential.

Nevertheless the Bank's project portfolio does not suggest that support for fisheries/aquaculture is a major element.

Caribbean Development Bank (CDB)

Bridgetown, Barbados
"The Caribbean Development Bank (CDB) was established for the purpose of contributing to the harmonious economic growth and development of the member countries in the Caribbean." It aims to help Borrowing Member Countries reduce inequality and halve the incidence of extreme poverty by the end of 2025. It “embraces the Millennium Development Goals” and is working to facilitate their attainment for the 14.5 million people living in its region.

The Bank is currently owned by 27 member countries: 22 members from the Region, divided into 19 borrowing member countries (BMCs) and three non-borrowing member countries; and five nonregional members. The voting power of each country is linked to its subscription to the Bank's capital stock. Regional members are required to hold not less than 60% of the shares, and non-regional members not more than 40% of the shares. Only regional members can borrow from CDB.

Fish-Related Activity: The Caribbean Technological Consultancy Services (CTCS) operates within CariCom and the 2012-2015 strategy paper for Monteserrat states: “Discussions with the Department of Agriculture have determined that CTCS assistance would be required in the areas of fishing, farming and agro-processing, particularly in respect of fish processing (filleting and packaging); long-line fishing; deployment of fish aggregating devices; aquaculture; greenhouse vegetable production; and in the development of cottage industries."

The Belize 2011-2015 country strategy paper included:
"The conversion of wetlands to coastal tourism and housing development, as well as intensified aquaculture and agriculture are also issues which reduce the level of beneficial ecosystem services such as coastal protection, aquifer recharge and the degradation of critical fish nursery habitats, and further exacerbates the vulnerability of large segments of the population to natural hazards such as hurricanes, flooding and coastal erosion."

Central American Bank for Economic Integration (CABEI)

Tegucigalpa, Honduras
"The Bank's objective shall be to promote the economic integration and the balanced economic and social development of the Central American region, which includes the founding countries and the non-founding regional countries, attending and aligning itself with the interests of all of its member countries...CABEI has become the financial arm for the integration and development of Central America, a unique institution, given its founding objectives and principles, as well as the ample scope of its operations."

Participants: Regional Founding Members: Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Cuba; Regional Non-founding Members: Panama, Dominican Republic, Belize; Non-regional Members: Mexico, Republic of China (Taiwan), Argentina, Colombia, Spain

CABEI Environmental and Social Policy of the CABEI (2016)

Fish-Related Activity: CABEI funds drive major project in the Dominican Republic:
"The project consists of the construction of a multipurpose dam on the Yaque del Sur riverbed in order to control floods, provide for drinking water, as well as water for agricultural irrigation and the development of aquaculture and tourism activities."

CABEI promotes sustainable development in the region
The CABEI Institutional Strategy sets out six focus areas, including Rural Development and the Environment. Through this focus area, CABEI continues to "direct actions related to agricultural, forestry, aquaculture and livestock activities in order to achieve agricultural and rural development for every member country under a framework of sustainable natural resource and environmental management."

"CABEI has a strategic management instrument that seeks to promote programs, projects and initiatives that foster rural development and the environment by offering financial instruments that meet the different needs of the sector in the Bank's beneficiary countries. The instrument proposes six fields of action: i-Productivity and environmental sustainability of agriculture, livestock, forestry and aquaculture; ii-food security and nutrition; iii-rural productive development; iv-promotion of adaptation and mitigation practices in the face of climate change; v-integrated risk management for natural disasters and vi-afforestation and conservation of the environment, natural resources and environmental services, including integrated risk management of water sources."

According to a 2012 news release, "As the region's development bank, whose objective is to improve the quality of life of Central Americans, CABEI has backed the following projects in Nicaragua: Products in Value Chains and Market Access (PROCAVAL1), a Development Program for Agricultural, Aquaculture and Forestry Production Systems…"

Development Bank of Latin America (CAF)

Caracas, Venezuela
CAF is a development bank owned by 19 countries - 17 of Latin America and the Caribbean, Spain and Portugal- as well as 13 private banks in the region. CAF "promotes a sustainable development model through credit operations, non-reimbursable resources, and support in the technical and financial structuring of projects in the public and private sectors of Latin America." With headquarters in Caracas, Venezuela, CAF has offices in Buenos Aires, La Paz, Brasilia, Bogota, Quito, Madrid, Mexico D.F, Panama City, Asuncion, Lima, Montevideo and Port of Spain.

CAF has an Environmental and Social Safeguards for CAF/GEF Projects Manual (2015).

Fish-Related Activity: Joint support with Swisscontact for 41 trout breeding and export microenterprises in Puno, Peru. (Puno, September 1, 2010). A total of 41 microenterprises engaged in the first phase of the project "Model for competitiveness of trout in the Puno region," an initiative promoted jointly by CAF, Swisscontact and Piscifactoras Los Andes (Piscis) in Peru to “provide technical support and build the capacities of small-scale breeders of the species in the localities of Pomata, Santa Lucia and Moho and Huancan on the shores of Titicaca and Lagunillas lakes.”

As of 2016, More than 600 members of the 53 associations of independent fishermen of Southern Peru reportedly benefited from a ”project to restock, and establish a responsible and sustainable management of the water resources, while It should be noted that this project has had a high level of innovation in Peruvian aquaculture, as it implemented the first hanging system for the cultivation of red algae in Peru, the first artisanal cage managed by fishermen, the first import experience, and restocking of sea urchins.”

Development Bank of the Central African States (BDEAC)

Brazzaville, Congo
Multilateral development bank that is charged with financing the development of the member states of Economic and Monetary Community of Central Africa.

East African Development Bank (EADB)

Kampala, Uganda
EADB was established in 1967 with the remit to provide financial and other support to its member countries, which currently are Kenya, Tanzania, Rwanda and Uganda. Burundi has applied to become a member state. Focus areas include: Climate Change, Food Security, Infrastructure, Regional Integration, and Skills Development.. "The EADB's loan portfolio is spread widely, but more than 60% of its lending is to projects in health and education, hotels and tourism, construction and building, electricity and water, and agriculture."

"...All East African Countries are dependent on climate-sensitive economic sectors, such as agriculture, for output and income generation. Further, due to their low level of development, they are less resilient to negative effects of climate change… Therefore, it is important that all development actors within the East African region promote a drive to a low carbon economy or green growth through promotion of actions for adaptation and /or mitigation of climate

change. This will require promotion of climate friendly products, markets, technologies, investments, and consumption behaviour."

Member countries are Kenya, Tanzania, Rwanda and Uganda. Burundi has applied to become a member state.

Fish-Related Activity:
EADB has a biodiversity investment fund and states: “Our target sectors are:

- Organic Agriculture
- Tourism
- Aquaculture and Fisheries
- Forestry, including non-timber forest products (e.g. honey, bamboo, shea nuts)
- Renewable Energy
- Wildlife-based Enterprises”

“The primary focus is to provide attractive commercial financing to projects that promote the conservation and sustainable use of biodiversity.”

Eastern and Southern African Trade and Development Bank (TDB)

Bujumbura, Burundi
The Eastern and Southern African Trade and Development Bank (TDB), formerly the PTA Bank, is a multilateral, treaty-based development financial institution. "The Bank's mandate is to finance and foster trade, regional economic integration and sustainable development, through trade finance, project and infrastructure finance, asset management and business advisory services.” 2017 Annual Report.

The Bank has about 20 African countries as regional members, JSC Development Bank of the Republic of Belarus and the People's Bank of China as Non-Regional Members, as well as a variety of institutional members.

Fish-Related Activity: “For TDB, Madagascar showcases tremendous investment opportunities in agriculture, tourism, fisheries industries, transport and civil engineering, energy and manufacturing."

Economic Cooperation Organization Trade and Development Bank (ETDB) (ECO trade and Development Bank)

Sisli, Istanbul, Turkey
The Economic Cooperation Organization Trade and Development Bank is a Multilateral Development Bank (MDB) established by Iran, Pakistan and Turkey, which are the founding members of the ECO.

Main focus areas are: 1) Transportation 2) Energy 3) Manufacturing 4) Infrastructure 5) Agriculture.

ETDB work is guided by an Environmental Policy (2007)

Agriculture, natural resources, and rural development together constitute less than 3% of the loan portfolio. Neither fish nor aquaculture are mentioned in the 2017 annual report.

Members: Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, Turkey, Turkmenistan, Uzbekistan

Fish-Related Activity: Goods that are on the Bank's Financing Environmental Exclusion List:

- Wildlife products regulated under the CITES Convention;
- Genetically modified organisms to be released into the natural environment
- Manufacture, distribution or use of banned pesticides and herbicides;
- Unsustainable fishing practices;

[...]

According to the Bank's Turkey, Country Partnership Strategy – 2015-16, "The Bank's activities will remain focused on operations aimed to support realizing country's full agricultural potential. In this regard, particularly, the Bank would support investments in modernizing agrifood processing as well as branding, meat and dairy production, packing, certification, establishment of food safety laboratories, fertilizers, storage, organic farming, aquaculture production, seed production, R&D and human resources to boost production, competitiveness and exports."

Areas of Intervention include: "Rural development and environment (irrigation, flood control, rural water supply, agriculture, livestock, fisheries, ecosystem protection, renewable energy, capacity building)"

ECOWAS Bank for Investment and Development (EBID)

Lomé, Togo

The ECOWAS Bank for Investment and Development (EBID) is the financial arm of the Economic Community of West African States (ECOWAS) comprising fifteen (15) Member States: Benin, Burkina Faso, Cape Verde, cote d'ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.
The vision of the Bank is to be the leading regional investment and development financial institution in West Africa and an effective instrument for poverty reduction, wealth creation and job promotion for the well-being of the people of the region.

Its many focus areas include: Rural development and environment (irrigation, flood control, rural water supply, agriculture, livestock, fisheries, ecosystem protection, renewable energy, capacity building)

Eurasian Development Bank (EDB)

Almaty, Kazakhstan

The Eurasian Development Bank is an international financial institution, conceived by the Presidents of the Russian Federation and the Republic of Kazakhstan, and established to promote economic growth in its member states, extend trade and economic ties among them, and support integration in Eurasia through investment. It was.

The Republic of Armenia and the Republic of Tajikistan became full members of the Bank in 2009, the Republic of Belarus in 2010, and the Kyrgyz Republic in 2011.

Fish-Related Activity: While there were discussions in 2012 about supporting Armenian fish breeding of sturgeon, it is not clear that much of any current support is going to fisheries/aquaculture.

European Bank for Reconstruction and Development (EBRD)

London, UK
Major sectors of investment include water supply, wastewater treatment systems, public transport and sustainable energy.

The European Bank for Reconstruction and Development (EBRD) opened in 1991 and has invested in more than 5,200 projects. It is currently active in nearly 40 countries from central Europe to central Asia and the southern and eastern Mediterranean, plus the West Bank and Gaza.

“Safeguarding the environment and a commitment to sustainable energy have also always been central to the EBRD's activity. EBRD's Green Economy Transition approach has made climate finance a central focus, one that as of 2018 accounted for 36 per cent of its total annual investment.”

EBRD (2014) Environmental and Social Policy:

Fish-Related Activity:

- Environmental and Social Guideline: Aquaculture Guidelines
- Environmental and Social Guideline: Commercial Fishing

EBRD Environmental and Social Risk Categorisation List (Revised 2009)
"This checklist is designed to provide credit officers within Financial Institutions (FIs) with a guide to the typical level of inherent environmental and social risk related to a particular business activity, to assist credit officers in judging the appropriate level of environmental and social investigation that should be carried out." (Fishing and aquaculture are rated)

European Investment Bank (EIB)

Kirchberg, Luxembourg
The European Investment Bank, the lending arm of the European Union, is the world's largest multilateral lender and the largest provider of climate finance. The EIB Group has two parts: the European Investment Bank and the European Investment Fund. The EIF specialises in finance for small businesses and mid-caps.

The European Investment Bank focuses on four areas:

- Innovation and skills
- Small businesses
- Infrastructure
- Climate and environment

“As the EU bank, the European Investment Bank (EIB) supports the transition to a low-carbon, environment-friendly and climate-resilient economy. In our climate strategy, published in 2015, we commit to ensuring that at least 25% of all EIB lending supports climate-related investment. For loans in developing countries, this figure will rise to 35% by 2020. Over the next five years we will provide around EUR 100bn for climate-related projects as we help turn the ambitious agreement approved at the COP21 climate conference in Paris into reality

“In 2015, we continued our collaboration with the other MDBs on the publication of the joint annual Climate Finance report and worked with the group on the harmonisation of principles for tracking finance for both climate mitigation and adaptation.”

“We have developed carbon footprint methodologies to measure absolute greenhouse gas emissions generated by the projects we finance across all sectors and to compare these emissions with the likely alternative to these projects -- estimating relative or net emissions. We are also committed to minimising our internal carbon footprint as one of our corporate responsibility objectives, and, having made significant reductions, we now compensate for our residual emissions on an annual basis.”

Fish-Related Activity: “Our lending activities cover the whole agri-food and fishery value chain, ranging from input and equipment supply to wholesale and retail networks. The agriculture and fisheries sectors with their upstream and downstream industries are the key contributors to economic growth in the world's rural and coastal regions.”

“Intermediated loans: Thanks to this lending product, we are able to finance SMEs and microenterprises active in agriculture and fisheries.”

EU Bank supports development of Ukraine's economy through a EUR 400m loan to strengthen the country's agri-food sector… “The cereals, oil seeds and aquaculture and fisheries value chains are being targeted by the loan, having been identified as those best placed to satisfy domestic demand for quality produce and increase the competitiveness of the sector and its exports to the EU and global markets.”

“We support, for example, small island developing states. Ocean acidification already is causing significant problems to coral reefs and fishing in small island states, where many people depend on the ocean for food and economic development.

Declaring war on plastic to save our oceans: the world's major climate financiers EIB, KfW and AFD launch a 2-billion euros initiative

“Ahead of the IMF/World Bank Group meetings, KfW Group on behalf of the German Federal Government, the European Investment Bank (EIB) and the Agence française de Developpement (AFD) launched the Clean Oceans Initiative to support the development and implementation of sustainable projects that will reduce pollution in the world's oceans over the next five years. This partnership will provide EUR 2-billion long-term financing for projects aiming at reducing marine litter, especially plastics, as well as untreated wastewater discharge, with a view to crowding-in private sector investment. [...] The Clean Oceans

Initiative is global in nature but will focus particularly on operations in riverine and coastal areas in developing countries in Asia, Africa and the Middle East, since ninety percent of plastic waste enters the oceans through 10 major river systems located in Africa and Asia, where access to regular waste collection and controlled waste disposal often lacks. [...] An estimated 8 million tons of plastic waste and microplastics, is discharged into the world's oceans every year, threatening marine ecosystems, people and communities that depend on clean oceans. If we continue along this path, it is estimated that by 2050 there will be more plastics than fish in the oceans by weight."
http://www.eib.org/en/infocentre/press/releases/all/2018/2018-248-declaring-war-on-plastic-to-save-our-oceans-the-worlds-major-climate-financiers-eib-kfw-and-afd-launch-a-2-billion-euros-initiative.htm

"I am pleased to announce that in September the EIB Board of Directors approved a 20 million dollar investment in the Sustainable Ocean Fund" stated an EIB Vice-President in 2017. "This fund is a pioneering investment vehicle that will provide money for marine and coastal enterprises that are helping with conservation, improved livelihoods and better economic returns. The EIB has worked with the fund manager over a prolonged period to develop and strengthen the proposal, and will act as a cornerstone investor to attract other investors to this innovative fund that will help fisheries rehabilitation, sustainable aquaculture and other areas of the blue economy."

"The financing will help local communities use more environmentally and socially sustainable practices, while also improving the economic potential of their activities. This fund will be a test case to prove that it is good business to invest in fisheries rehabilitation and sustainable seafood, and we are proud to be part of this."

"To move this important work forward and create an environment that increases financing, we have teamed up with the European Commission, WWF and the Prince of Wales's International Sustainability Unit to agree to a set of voluntary principles for financing a sustainable blue economy."

An article, *When it's good for a loan to be fishy*, described support provided to an expansion of a fish-growing and processing facility in eastern Croatia.

EIB's publication *Agriculture and bioeconomy* alludes to "56000 loans worth EUR 6.4bn, to agriculture and fisheries through our partner banks from 2013 to 2017".

Inter-American Development Bank (IDB)

Washington, DC, USA
IDB's mandate is to "Contribute to the acceleration of the process of economic and social development of the regional developing member countries, individually and collectively."
Top shareholders: 1) United States 30% 2) Argentina 11.2% 3) Brazil 11.2% 4) Mexico 7.2% 5) Japan 5%

Geographic focus of operations: Brazil 18% Mexico 17.3% Argentina 14.2% Colombia 10.4% Ecuador 5.6% Other 34.5%

According to the 2017 annual report, Agriculture and Rural Development constituted 3% of its budget, Energy 11%, Environment and Natural Disasters 8%, transport 15%, water and sanitation 12%, Urban Development and Housing 3%.

To become a regional member, a country needs prior membership at the Organization of the American States. To become a non-regional member, a country needs to be a member of the IMF.

Fish-Related Activity:
In a December 2018 news release, Internet of things to improve productivity and sustainability of trout aquaculture in Peru, IDB described, how "A US$2 Million Project will improve aquaculture producers' productivity and income in Lake Titicacaca in Peru while improving its sustainability."

It would entail use of a product "that introduces and expands IoT/data-driven practices in aquaculture mitigating the risk of overfeeding, which in turn decreases the risk of water pollution." Recipient of the financing would be Piscifactorias de los Andes (Piscis), the biggest of hundreds of rainbow trout producers in Lake Titicaca.

Another, completed, project: Sectoral System of Innovation in Aquaculture sought to transfer Chilean innovations in aquaculture to El Salvador.

International Investment Bank (IIB)

Moscow, Russia
Policy priorities Energy, machine engineering and technology, agriculture and food production, transport and logistics, biotechnology, pharmaceuticals and medicine, and financial sector (including SME support).

IIB priorities include providing support for: Small and medium-sized enterprises, Innovation and new technologies, Trade and economic cooperation, and for Resource conservation, energy efficiency and clean technologies. The Bank aims to contribute to improving the environment and mitigating the effects of global climate change. That is why resource conservation, energy efficiency and clean technologies are among the priority areas to which International Investment Bank pays special attention. Prioritizing of financing projects aimed at energy and resource efficiency, IIB contributes to achieving the goals of sustainable development, which is consistent with the national interests of member states and contributes to the quality of life of their citizens. All financed projects undergo mandatory preliminary assessment of their environmental impact. The results of this assessment are used by the Bank when making decision on the financing. We pay special attention to the following types of projects:

- projects aimed at energy conservation and renewable energy sources;
- projects that contribute to limiting greenhouse gas emissions and introducing advanced technology in mitigating the effects of global climate change and adapting to global climate change;

- projects that contribute to introducing advanced environmental protection technology into industrial and household waste management, toxic or hazardous waste management, as well as recycling projects;
- projects that contribute to introducing advanced technology into water management, water quality improvement, and improved community access to clean drinking water, including the use of recycling technology;
- projects that are aimed at promoting the environmental viability of urban and rural development;
- projects that contribute to introducing sustainability practices into the agricultural, fishing, and forest industries, including such aspects as animal welfare.

IIB's Environment and Social Impact Assessment Guidelines prohibit investment in any fishery projects involving the use of drift nets longer than 2.5 kilometers, while indicating that "reasons why a project would be considered to have a net benefit for the environment include when its implementation leads to:

- reducing greenhouse gases emission;
- direct air emission or discharge reductions;
- increase of renewable energy based generation capacity (waste recovery, wind, hydro, geothermal, bio, solar, etc.);
- water consumption reduction and encouraging the efficient use of water resources, land pollution prevention and mitigation
- recultivation and rehabilitation of previously exploited land;
- addressing climate change;
- preservation of endangered species"

The members of the Bank are Republic of Bulgaria, Hungary, Socialist Republic of Vietnam, Republic of Cuba, Mongolia, Russian Federation, Romania, Slovak Republic and the Czech Republic.
Fish-Related Activity: A list of funded projects does not include any prominent mention of fish.

Islamic Development Bank (IsDB)

Jeddah, Saudi Arabia
The Islamic Development Bank is a multilateral development bank (MDB), working to improve the lives of those it serves by "promoting social and economic development in Muslim countries and communities worldwide, delivering impact at scale."

"The IsDB group is fully committed to the SDGs. It recognizes that development objectives vary from one country to another. Its work is therefore initiated and motivated by understanding the real needs of its member countries, and it adapts its interventions accordingly."

Principal areas of focus include Science, technology and innovation (STI), Infrastructure, Education, Health, Humanitarian Relief, Women & Girls.

In January 2019, the Bank's President, Dr. Bandar Hajjar, called on Development Banks to dramatically overhaul their strategies in order to meet the 2030 Sustainable Development Goals

The present membership of the Bank consists of 57 countries. The basic condition for membership is that the prospective member country should be a member of the Organization of the Islamic Cooperation (OIC)

Fish-Related Activity: Since 2000, fishery related projects have included:
Inland Aquaculture and Artisanal Fisheries Development Project
Country: Mozambique, Start date: 19 September 2016
“The project aims at helping fisheries stakeholders sustainably develop and manage artisanal fish capture and culture in inland areas of Manica, Tete and Zambezia provinces, thereby improving their livelihoods and food security while increasing quality fish supply on domestic markets. Direct beneficiaries of the project will be small size commercial fish farmers, as well as some non-commercial fish farmers that can become more market driven, as well as artisanal and subsistence fishers. Beneficiaries would also include various providers of auxiliary services such as boat builders, fish traders and processors, and entrepreneurs who provide local ice or cold-storage facilities, fish-feed or fingerlings. The project benefits will reach over 20,000 direct beneficiaries and their families in the targeted provinces and approximately 100,000 indirect beneficiaries, mostly benefitting from market infrastructure, rural roads and rural electrification.”

Marine Fisheries Capacity Building Project Under C.B. Program in OIC MCs
Country: Bangladesh, Start date: 8 August 2006
“The project aims at capacity building of the Department of Fisheries to monitor, control and undertake surveillance on Bangladesh's marine fisheries resources. This will be achieved through procurement of a research and survey vessel, including navigation, research and fishing equipment, equipment for pelagic, demersal and land based survey including equipment for MCS hardware and Vessel Tracking and Monitoring System (VTMS).”

Horizon Fisheries Project
Country: Maldives, Start date: 23 March 2010

Livestock and Fishery Development Project in the North West Region
Country: Cameroon, Start date: 12 November 2013
“The project objective is to contribute in increasing rural income and reduced poverty in Cameroon. The specific objectives are to enhance the production and productivity of the livestock and fisheries sector in the North West Region of the country.”

Fisheries Development Project
Country: Yemen, Start date: 11 June 2013
“The project aims at creating sustainable economic opportunities for poor women and men in fishing communities and enhancing fisheries resources sustainability. About 700,000 people will be benefited by increasing their incomes and creating related economic opportunities. In addition, the project will develop aquaculture and microfinance for the entrepreneurial poor mainly women and young entrants into the labour market.”

New Development Bank (NDB)

Shanghai, China
International organization jointly founded by the BRICS Countries: Brazil, Russia, India, China and South Africa

"In 2016-2017, the Board of Directors of the Bank approved loans involving financial assistance of over USD 3.4 bln for projects in the areas of green and renewable energy, transportation, water sanitation, irrigation and other areas."

Issue Areas: The Bank's Environmental and Social Framework includes:
"Climate Change
"The Bank seeks to promote mitigation and adaptation measures to address climate change. The NDB aims to build upon existing green economic growth initiatives and provide support for new ones at regional, national, sub-national and private sector levels. The Bank also encourages climate proofing of its infrastructure financing and investments to build resilience to climate change.

"Conservation of Natural Resources
"The NDB promotes the conservation of natural resources, including energy and water, and it supports sustainable land use management and urban development."

Participants: Bank's Articles of Agreement specify that all members of the United Nations could be members of the bank, however the share of the BRICS nations can never be less than 55% of voting power.

Environment and Social Framework
"NDB does not knowingly support projects involving the following: [...]
xi. Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats;"

OPEC Fund for International Development (OFID)

Vienna, Austria
The OPEC Fund for International Development (OFID) is the development finance institution established by the Member States of OPEC in 1976 as a channel of aid to the developing countries.

OFID provides financing "to build essential infrastructure, strengthen social services delivery and promote productivity, competitiveness and trade.... To optimize the impact of its contribution to international development, OFID cooperates closely with the bilateral and multilateral agencies of its Member Countries, the World Bank Group, the regional development banks and the specialized agencies of the United Nations, as well as a host of non-governmental and other organizations.

Focus areas are: Energy, Transportation, Financial, Agriculture, Water & Sanitation, Industry, Health, Telecommunications, Education

Participants: Established by OPEC members... All developing countries, with the exception of OPEC Member Countries, are in principle eligible for OFID assistance. The least developed countries, however, are accorded higher priority. So far, 134 countries worldwide have benefited from OFID's financial assistance.
Fish-Related Activity: A recent report did not show substantial support for fishery or aquaculture projects, although in 2015 OFID signed a grant agreement with the United Nations Industrial Development Organization (UNIDO) to support fisheries sector in the Latin America and Caribbean (LAC) region, with a project aiming to improve the productivity and competitiveness of the shrimp value chain.
In 2006 it had provided a loan in Mauritania to expand operations of a fish processing factory.
In 2012 it announced:
"The Institute for University Co-operation Onlus will receive a grant to support a project that will develop artisanal fishery and aquaculture resources in Peru, benefiting over 20,000 artisanal fishermen."

West African Development Bank (BOAD)

Lomé, Togo
The West African Development Bank (BOAD) is the common development finance institution of the member countries of the West African Monetary Union (WAMU). BOAD's purpose is to promote the balanced development of its member countries and foster economic integration within West Africa by financing priority development projects.

Issue Areas: Food security, energy and climate finance are priority areas. In respect to food security, BOAD's operations "mainly relate to: i) construction of water reservoirs, implementation of hydroagricultural development projects for water control meant for rice double-cropping, market gardening and construction of warehouses; ii) institutional support including training, monitoring/coaching activities; iii) supply and distribution of inputs for agricultural intensification; and iv) support to marketing agricultural products, with the construction of rural feeder roads."

"BOAD has, in conjunction with designated national authorities (DNAs), developed a portfolio of climate projects in the areas of power efficiency, renewable energies, agricultural resilience, livestock and pastoralism, sustainable water resource management, soil preservation, rehabilitation of degraded land, irrigation and forestry."

Member countries include Benin, Burkina, cote d'ivoire, Guinea Bissau, Mali, Niger, Senegal, and Togo.

Fish-Related Activity: BOAD has published a guidance document in respect to its support for fisheries projects, which may be a useful model for others.

A list of projects approved from 2013-2018 does not indicate substantial support directly for fishery/aquaculture projects, although in 2015:

"BOAD granted XOF10 billion for the implementation of the irrigation scheme in the Bani basin and Selingué (PDI-BS). This would make it possible to increase on a sustainable basis, rice production as well as other agro-sylvo-pastoral and fish production, with improved revenue and socio-economic environment in the project area. It would further contribute to increasing food security in the country through additional annual production of 52,240 tons of paddy rice, 3,080 tons of market-garden products and 880 tons of fish."

Most recent updates to this draft document: March 2021
11/2019: Added reference to Because the Ocean's Ocean for Climate Report (p. 17)
112019: Added reference to the UN Ocean Conferences and Communities of Ocean Action (p. 48)
3/2021 many changes, mostly updates re: events that had been scheduled, including many COVID-19 related postponements.