Environmental Negotiations

and the Role of Science and Non-Governmental Organisations

Cornelia E Nauen, PhD
President *Mundus maris*

University of Coimbra, Portugal 09/04/2025

Structure of the talk

1. Some elements of the current multiple crises
2. Focus on fisheries and marine resources
3. International environmental negotiations
4. Forms of inclusive dialogue from international to local level
5. In the guise of conclusions

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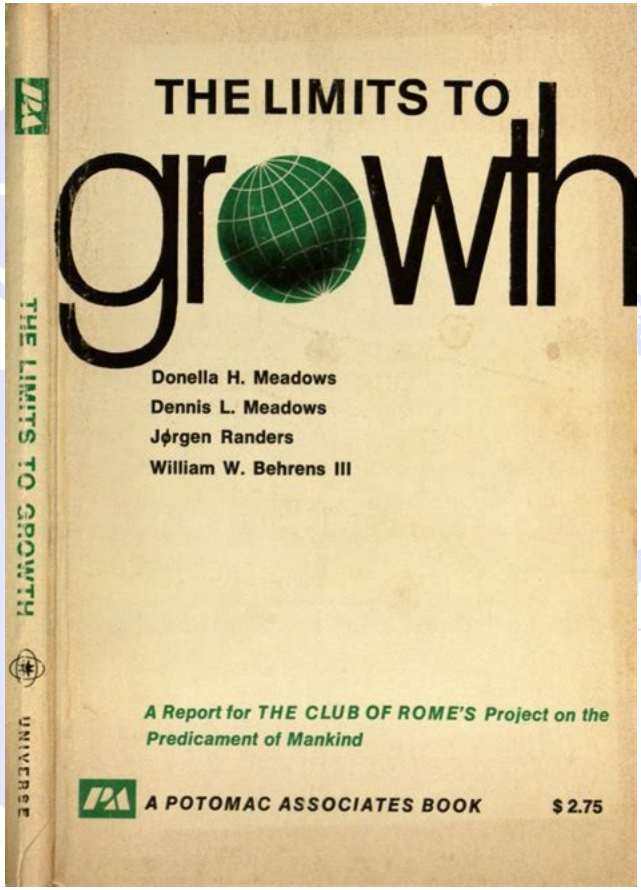
The Limits to Growth

Famously, the Club of Rome's study 'The Limits to Growth' analysed five basic factors and their interaction which affect the planet, namely population increase, agricultural production, depletion of non-renewable resources, industrial output, and pollution. The team at the Massachusetts Institute of Technology (MIT) feared disastrous outcomes.

Source: Meadows, D.H., Meadows, D.L., Randers, J. and Behrens III, W., 1972. The Limits to Growth. A Report for the Club of Rome's Project on the Predicament of Mankind. A Potomac Associates Book.



Latin American Global Model

As a response to this neo-Malthusian approach, the Latin American World Model (LAWM) is a mathematical and normative model developed by the researchers of the Bariloche Foundation in Argentina led by Amílcar Herrera. It offers a roadmap to a desirable and possible world. Its core principle of 'meeting basic needs' was voted by 150 countries at the Rio Earth Summit in 1992.

Source: Herrera, A., Scolnik, H. et al., 2004. Catástrofe o nueva sociedad?: Modelo Mundial Latinoamericano: 30 años después. Ottawa: Centro Internacional de Investigaciones para el Desarrollo (este libro contiene la versión completa de la 1. Edición (1976) de Herrera, Amilcar et al., Modelo Mundial Latinoamericano)

Pergamon

FUTURES

Futures 33 (2001) 77–88

www.elsevier.com/locate/futures

The Latin American World Model (a.k.a. the Bariloche model): three decades ago

Gilberto C. Gallopin *

Director, Systems for Sustainable Development Programme, Stockholm Environment Institute, Lilla Nygatan 1 Box 2142, S-103 14 Stockholm, Sweden

This article is dedicated to Amílcar O. Herrera, the "father" of the LAWM, a friend and an inspiration, and also one of the few truly planetary minds I ever have been privileged to meet.

"The optimist proclaims that we live in the best of all possible worlds; and the pessimist fears this is true." James Branch Cabell (1879–1958)

Abstract

Almost twenty five years ago, "Catastrophe and New Society. A Latin American World Model" was published [Herrera AO et al. Catastrophe or New Society? A Latin American World Model. Canada: DRC, 1976]. It described the work of a group of Latin American researchers, led by the late Amilcar O. Herrera, and it represented both a response to the diagnostic and proposal embodied in World 3, the first world model sponsored by the Club of Rome [Meadows D, et al. The Limits to Growth. New York: Universe Books, 1972], and a new proposal for the global system. It remains to date the only global model made in the South.

The present paper is a personal reflection by one of the authors of the Latin American World Model (LAWM) on what the model meant (and what it may still mean) in the context of the limits debate and the more general issue of the future(s) of the world system.

1. The global debate

It is probably useful to recall the circumstances in which that global debate took place. The concept of development was a relatively new one; at the international

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Different world views

The MIT model assumed hard physical limitations where population growth would lead to exhaustion of resources under the prevailing capitalist mode of production and consumption. It is exasperated more recently by the financialisation of ‘everything’, incl. life, and putting a dollar price, even where no market exists (yet).

The Latin American world model challenges the inevitability of disaster by assuming a different societal project, based on principles of **equity, civil participation, and non-consumerism**. It nurtures hope for living peacefully in balance with planetary boundaries.

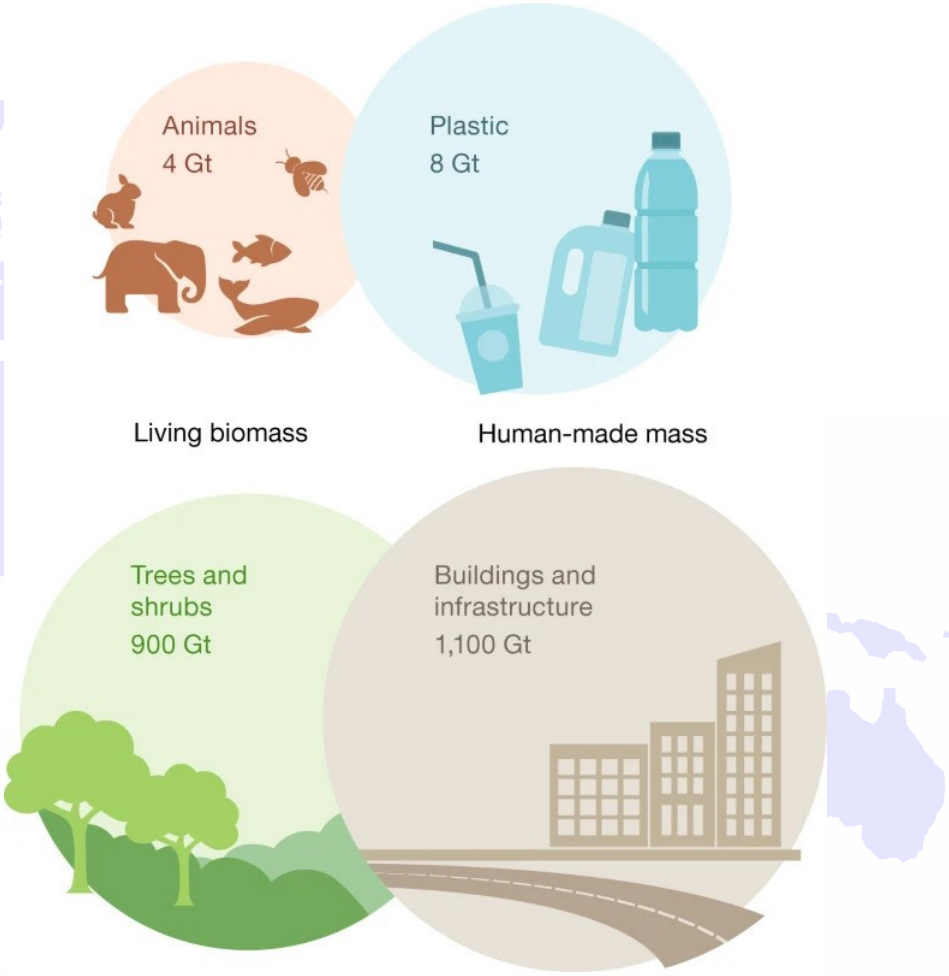
hls.harvard.edu

Biodiversity under threat, particularly in the sea

Looking at the current global picture for a reality check:

Comparison of the most important components of global biomass with products of human origin in 2020*

* expressed as gigatons of dryweight



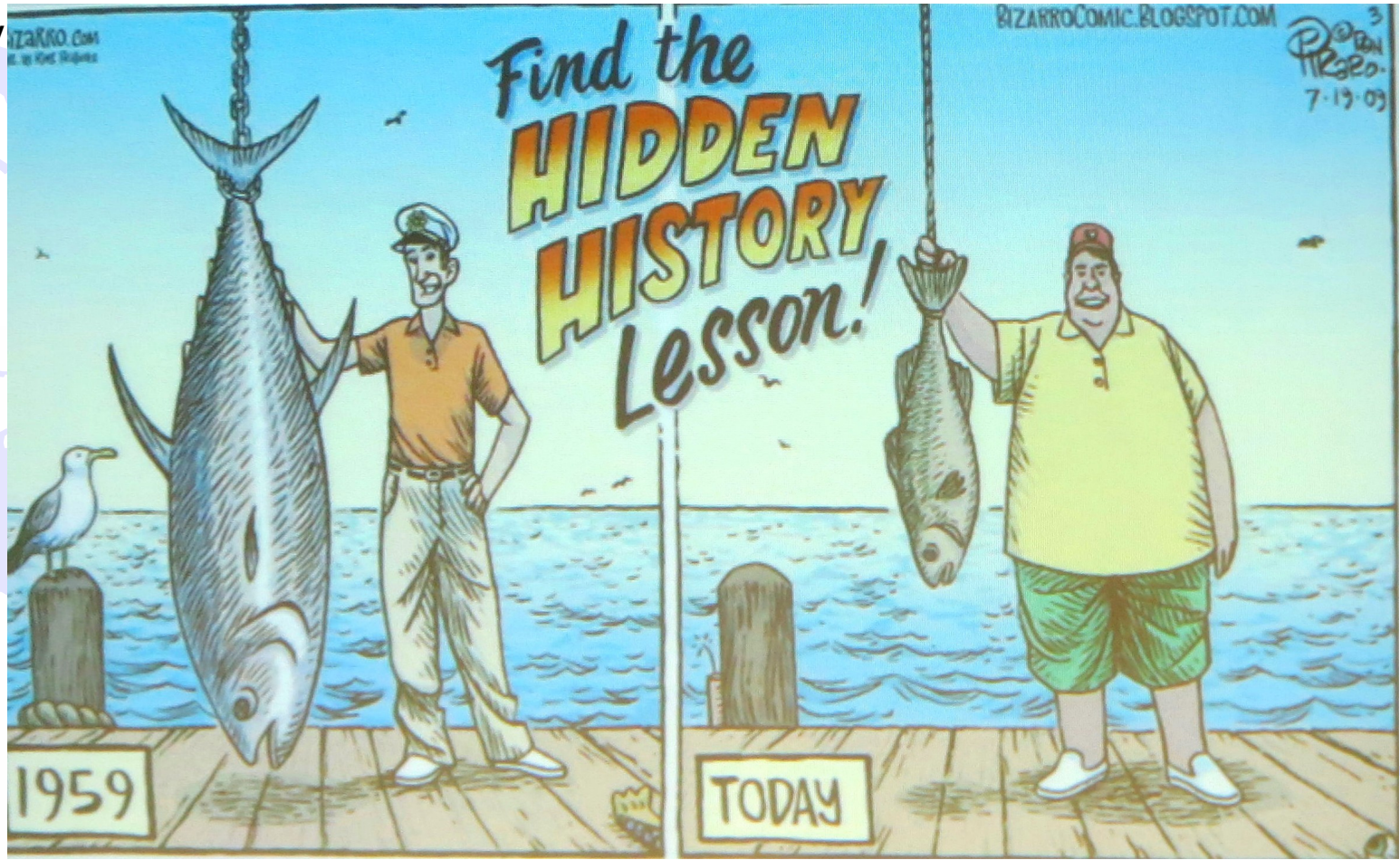
Source: Elhacham, E., Ben-Uri, L., Grozovski, J. et al. Global human-made mass exceeds all living biomass. *Nature* 588, 442–444 (2020). https://doi.org/10.1038/s41586-020-3010-5

The impact of fisheries

FAO estimates that every 5th fish is from illegal, not registerd and not regulated (IUU) fishery.

It's a vicious circle: reduced wild catches, more aquaculture of carnivorous salmon and shrimp, fisheries of wild fish for feed rather than human food.

Grave effects on marine biodiversity



The impact of climate change

Lack of O_2 + higher temperatures

> smaller fish

> poleward migration

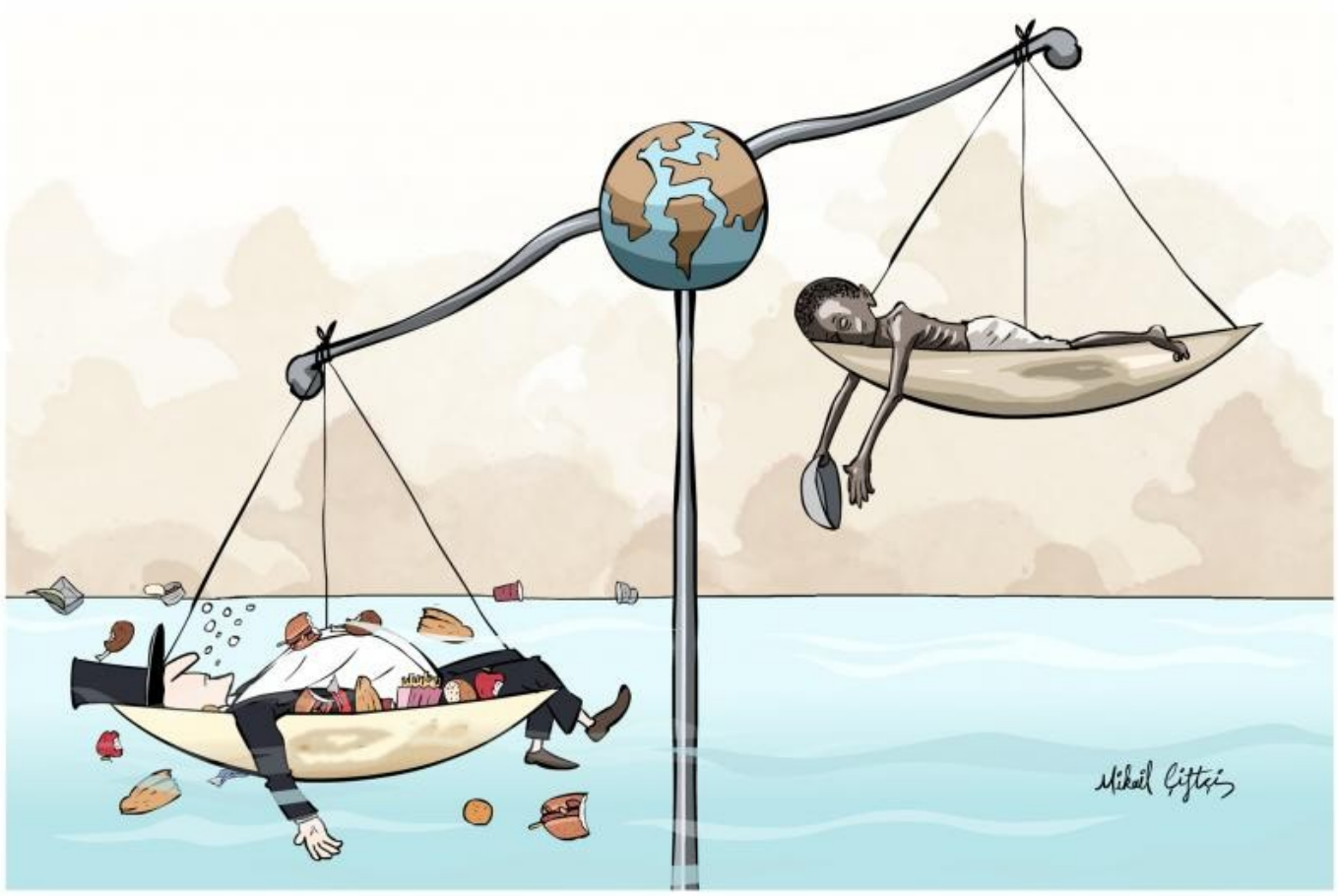
Source: e360.yale.edu

Recognising ‘North-South’ Injustices

Between 1990 and 2015 an estimated USD 242 trillion flowed from the ‘developing world’ to richer nations.

This amount would have been enough to end extreme poverty 70 times over.

Source: James Bradley, 2024. *Deep Water. The World in the Ocean*. Scribe Publications Australia



(Photo: Cartoonmovement.com)

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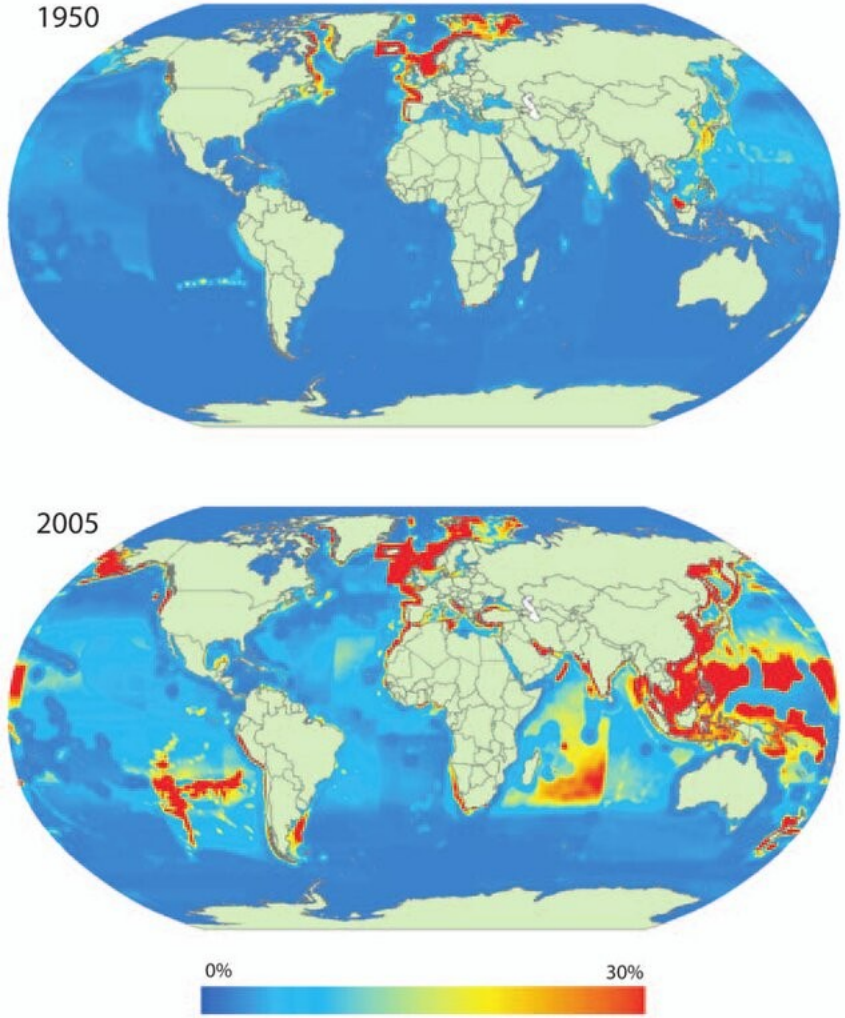
What industrial fisheries do to the ocean (1)

Primary production needed to support global catches – comparison 1950 to 2005. The southward expansion of fisheries occurred at a rate of almost one degree latitude per year, with the greatest period of expansion occurring in the 1980s and early 1990s. By the mid 1990s, a third of the world's ocean, and two-thirds of continental shelves, were exploited at a level where PPR of fisheries exceed 10% of PP.

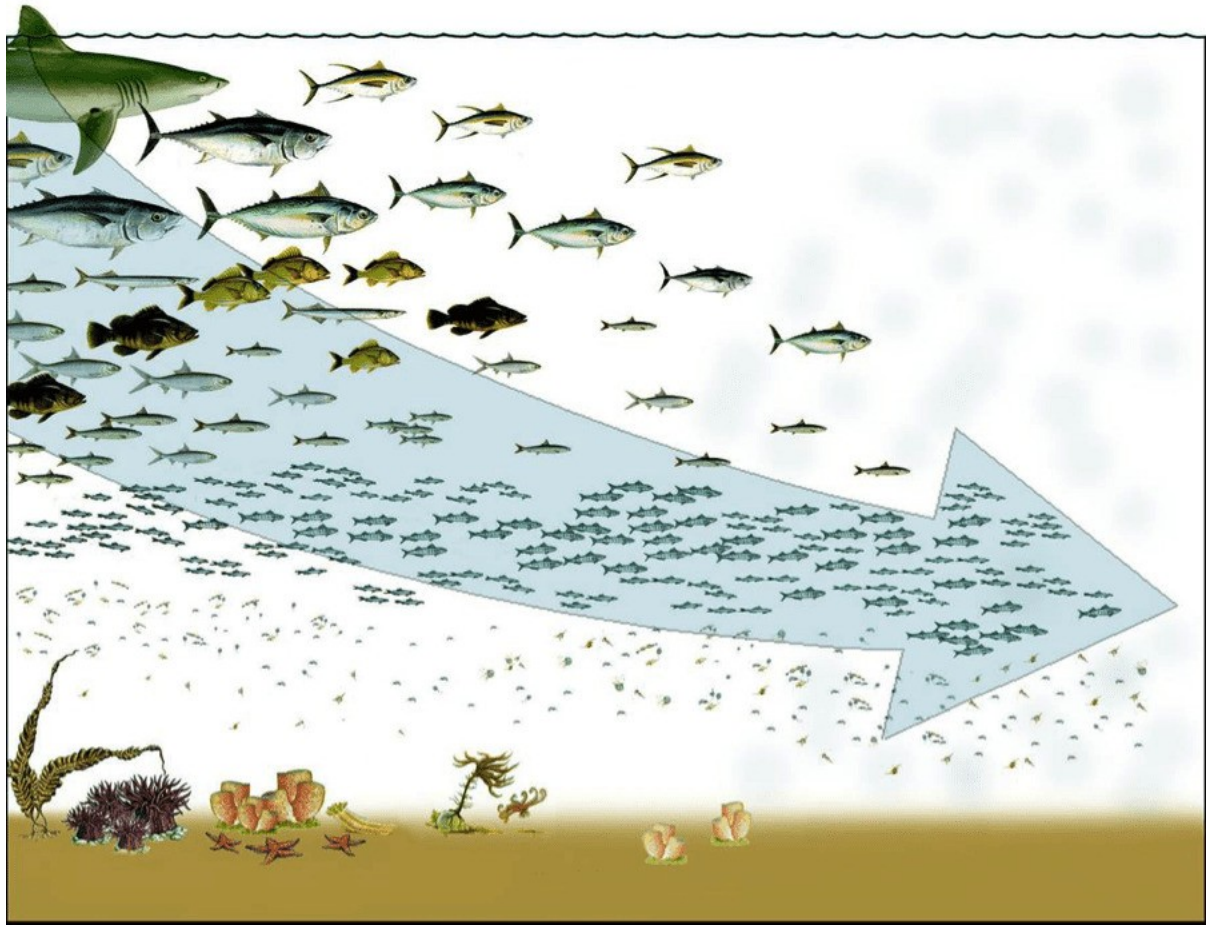
Source: Swartz W, Sala E, Tracey S, Watson R, Pauly D (2010) The Spatial Expansion and Ecological Footprint of Fisheries (1950 to Present). PLoS ONE 5(12):e15143. doi:10.1371/journal.pone.0015143



What industrial fisheries do to the ocean (2)

The progressive biomass reduction and even disappearance of top predators and subsequent catching of species lower in the trophic pyramid has been termed '**fishing down marine food webs**'. Fishing predators and their prey equally hard accelerates species loss.

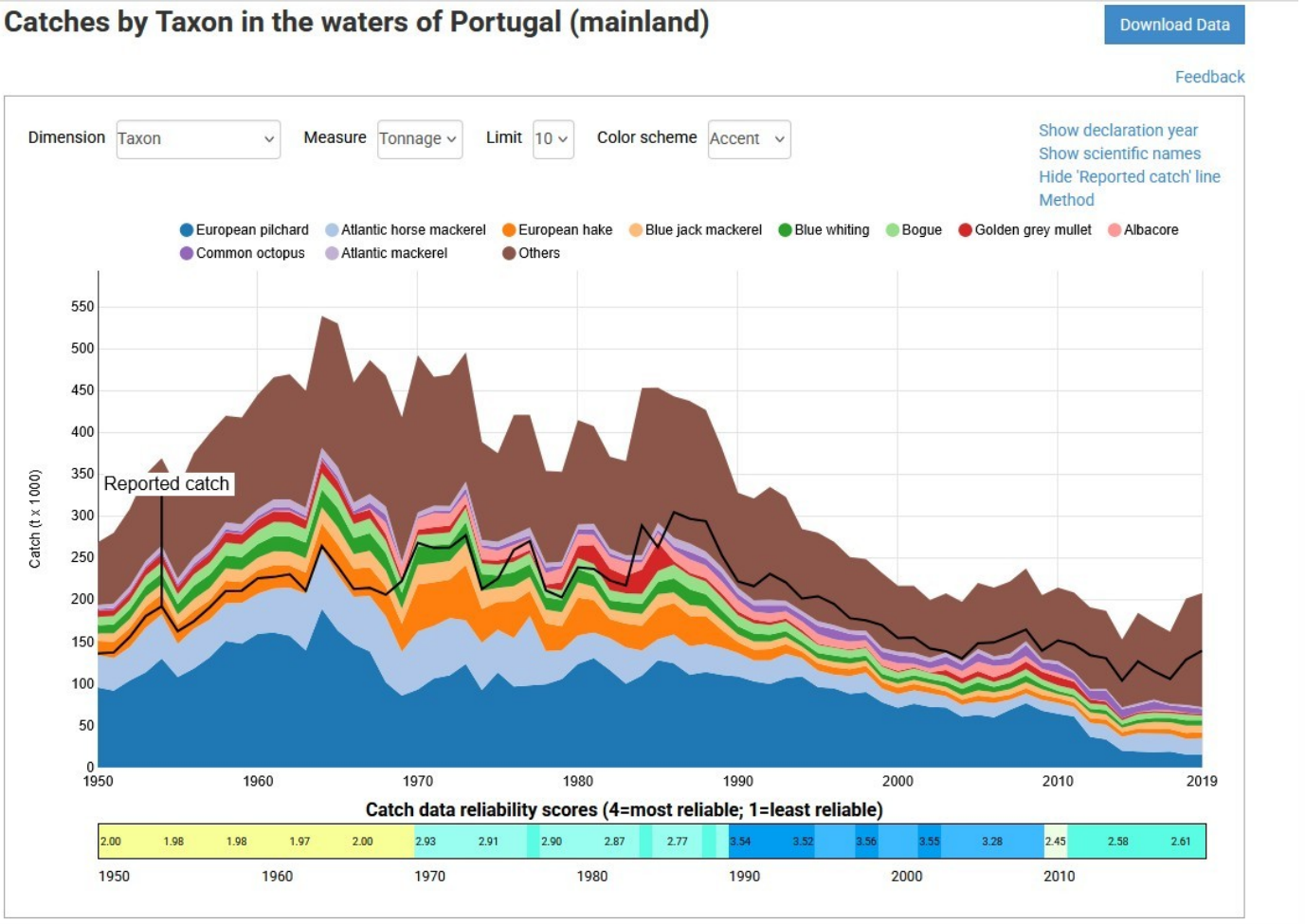
Source: Pauly, D., Christensen, V., Dalsgaard, J., Froese, R., & Torres Jr, F., 1998. Fishing down marine food webs. *Science*, *279*(5352), 860-863. DOI: 10.1126/science.279.5352.860



What industrial fisheries do to the ocean (3)

The Sea Around Us reconstructed actual extractions based on local research, not only what governments report officially to the FAO. That includes estimates of discards at sea (almost all unreported in Portugal mainland). European peak catches were in 1970s, global peak mid 1990s.

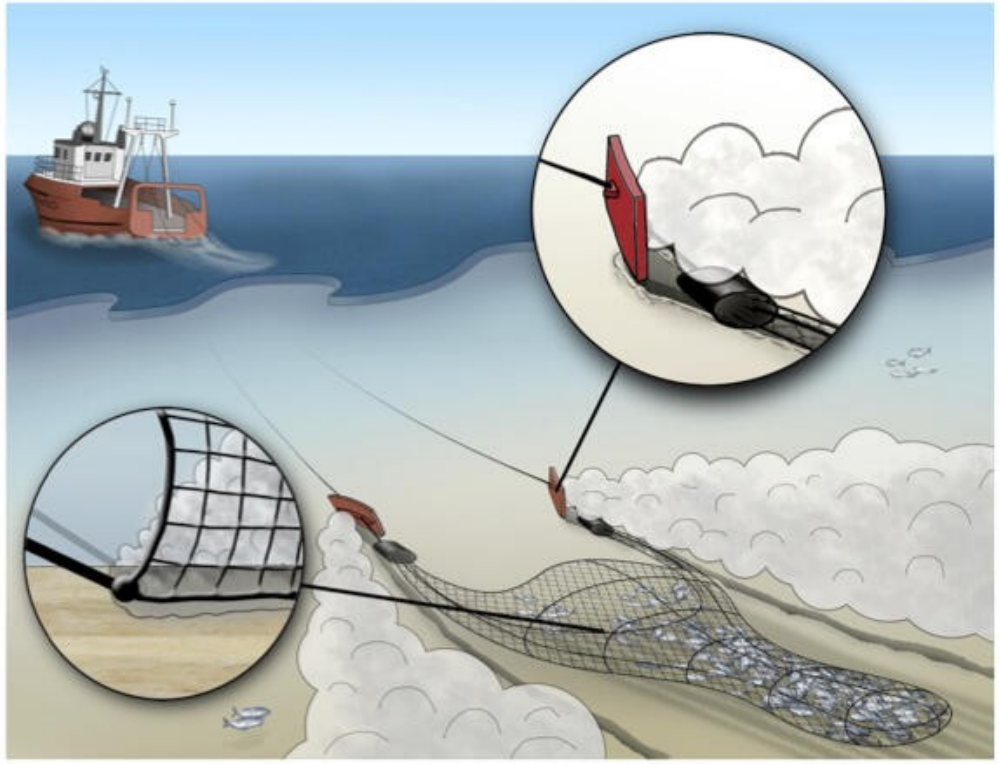
Source: Pauly, D., Zeller, D., 2016. Catch reconstructions reveal that global marine fisheries catches are higher than reported and declining. *Nat Commun* **7**, 10244 https://doi.org/10.1038/ncomms10244



What industrial fisheries do to the ocean (4)

Bottom trawling has recently come more into focus. About 25% of fish production derives from bottom trawling. But it uses more fuel than other major fishing methods. Its impact on habitat destruction and CO2 footprint require precautionary reduction, particularly in declared marine protected areas (MPAs).

Source for Summary: OCEANA, 2022. Review of the science on the impacts of bottom trawling on the climate (with focus on seabed carbon stores). https://europe.oceana.org/wp-content/uploads/sites/26/2022/11/factsheet-impacts-of-bottom-trawling-on-the-climate.pdf

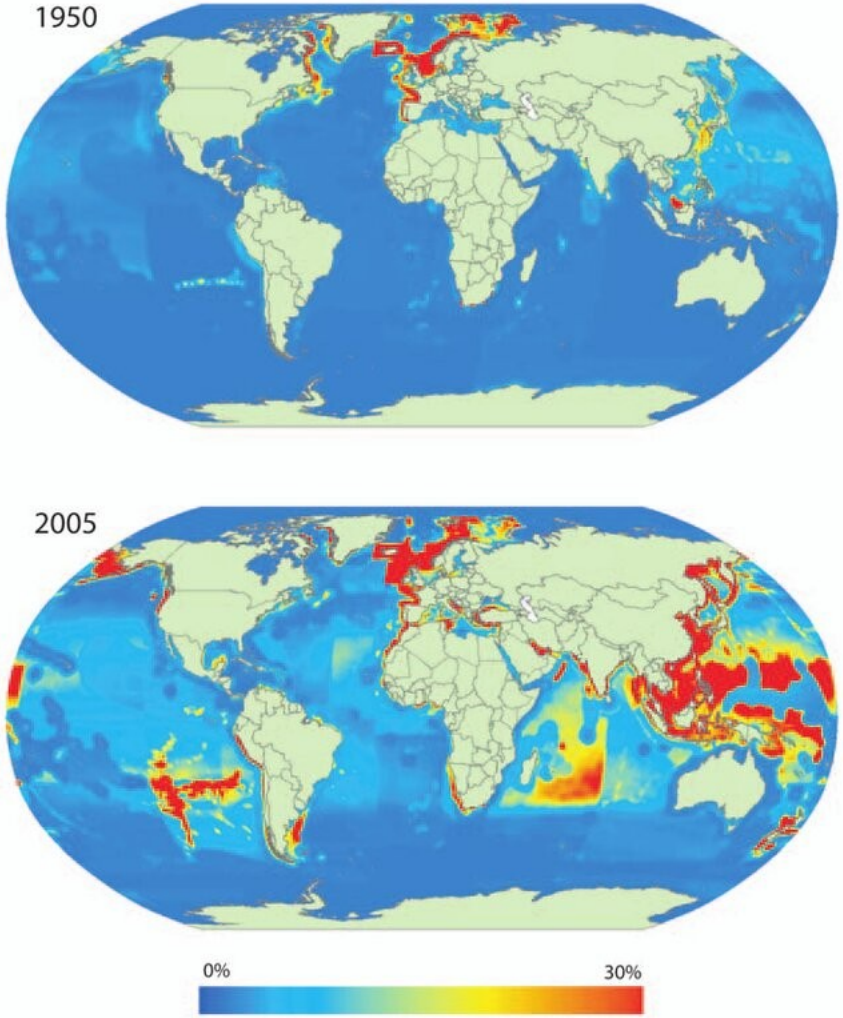


Source: Ferdinand Oberle

What industrial fisheries do to the ocean (5)

Trawling was initially most developed in the North Atlantic. The Adriatic is the most trawled area in the World. Almost 6000 trawlers operate in the Mediterranean (34% from Italy).
Bottom trawling is also the most used gear in the North Sea, 90% trawled at least once a year.
Bottom trawling has expanded also into shelf areas in Africa, Australia, Latin America and Asia

- **Unselective,** with much bycatch
- **Conflict** with artisanal fishers



Source of image: Swartz W, Sala E, Tracey S, Watson R, Pauly D (2010) The Spatial Expansion and Ecological Footprint of Fisheries (1950 to Present). PLoS ONE 5(12):e15143. doi:10.1371/journal.pone.0015143

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Rio Earth Summit in 1992

Negotiations started in 1989 for the United Nations Conference on Environment and Development (UNCED) and led to three major binding agreements:

- UN Convention on Biological Diversity, opened for signature (now 196 countries - each country to establish protected areas)
- UN Framework Convention on Climate Change signed by 154 countries (198 parties in 2022)
- Agenda 21, soft law, a non-binding policy document
- Recommended the UN Convention to Combat Desertification (signed 1994)

NGOs and educational institutions prominent participants

Rio + 20 in 2012

The United Nations Conference on Sustainable Development, also known as Rio+20, in 2012, was the third international conference on sustainable development aimed at reconciling the economic and environmental goals of the global community.

Hosted by Brazil from 13 to 22 June 2012, Rio+20 was a also a follow-up to the 10th anniversary of the 2002 World Summit on Sustainable Development in Johannesburg. Leaders adopted the non-binding document, "The Future We Want".

RIO+20
United Nations Conference on Sustainable Development

*"We, the Heads of State and Government and high-level representatives, having met at Rio de Janeiro, Brazil, from 20 to 22 June 2012, with the **full participation of civil society**, renew our commitment to sustainable development and to ensuring the promotion of an economically, socially and environmentally sustainable future for our planet and for present and future generations."*

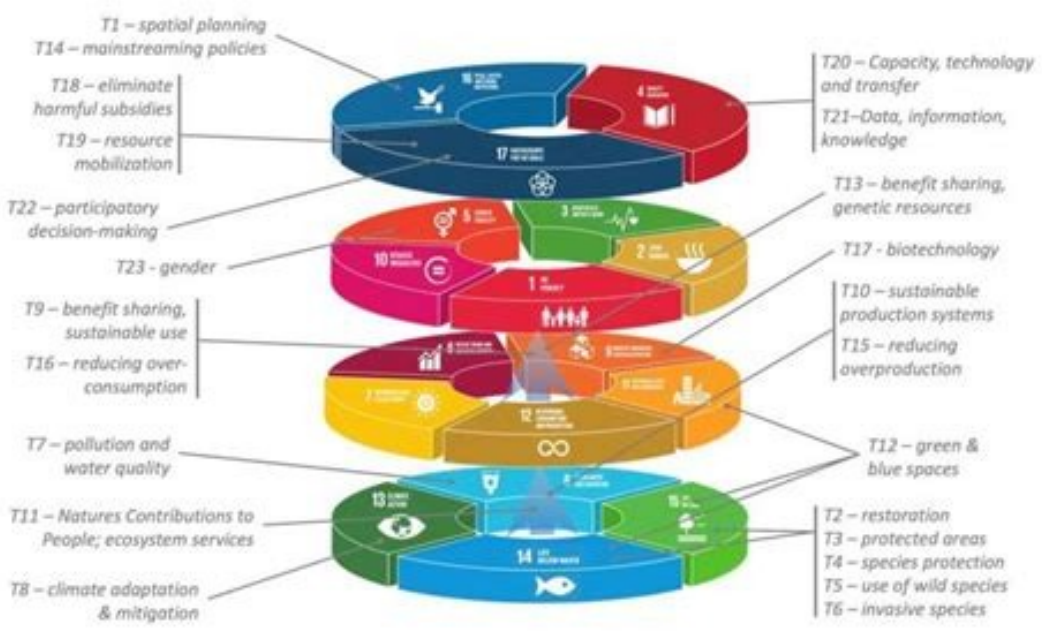
Kunming-Montreal Global Biodiversity Framework

The framework has **four goals** to be achieved by 2050:

- Halt loss, restore nature
- Use land and seas sustainably
- Share benefits and services
- Mobilise necessary resources

and **23 targets** to be achieved, including **8 targets by 2030**

- Biodiversity spatial planning
- Restore 30%
- Conserve 30%
- Reduce alien species by 50%
- Reduce pollution impact by 50%
- Fair benefit sharing from genetic res.
- Halve food waste, eat sustainably
- Stop bad subsidies, finance up

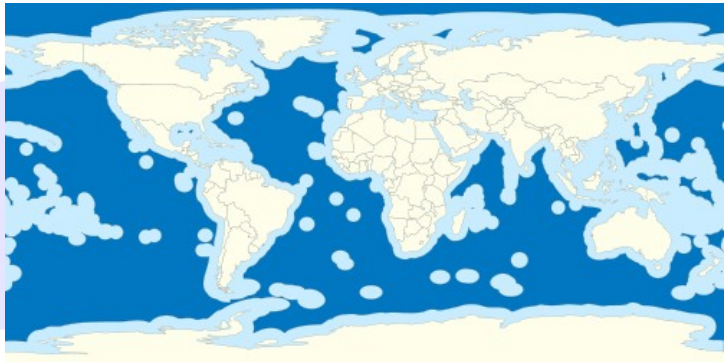


Adopted in December 2022

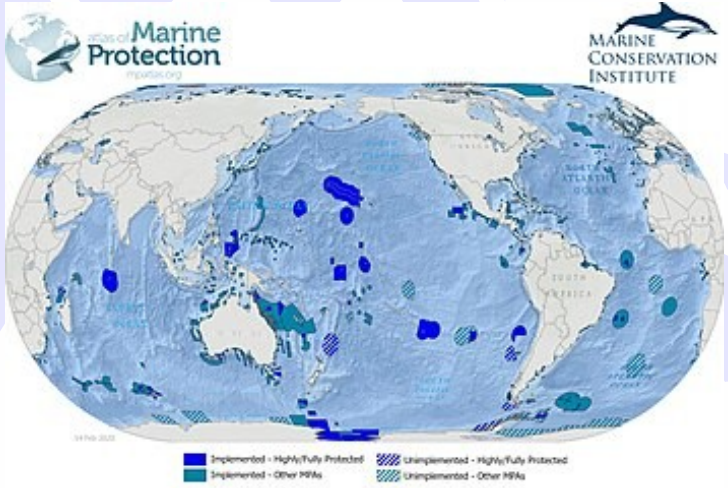
High Seas (BBNJ) Treaty

The Agreement under the UN Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction was adopted in June 2023. It will be legally binding when 60 States deposit their ratification or acceptance (so far 18). It addresses 4 themes:

1) marine genetic resources (MGRs) and their Digital sequence info, including the fair and equitable sharing of benefits;
2) area-based management tools (ABMTs), including marine protected areas (MPAs);
3) environmental impact assessments (EIAs);
4) capacity building and transfer of marine technology (CB&TMT).



The world's exclusive economic zones by boundary types and EEZ types



Plastic-Treaty under negotiation

Civil society demands:

Reduce plastic production

Change from fossil to bio-feedstock

No microplastic in products

Reduce additives drastically from currently 16.000, prohibit toxic ones (4.000 ascertained)

Increase circular economy

Transparency in reporting of companies

Sculpture of the Canadian artist Benjamin von Wong, produced with plastic from the Kibera Slums, Nairobi, before the 5th Session of the United Nations Environment Assembly (UNEA-5), 2022 - Source: Miragenews.com

Climate change

Reduce CO_2 emissions drastically, stop subsidies for fossils

Regenerate and protect sea grass meadows, mangroves, humid zones

Establish 30% interconnected strongly protected areas

Concrete implementation of international treaties and agreements, notably the Paris Agreement

(Photo: Bishnu Sarangi from Pixabay)

Stop widespread overfishing

Promote artisanal rather than industrial fisheries

Stop bottom trawling, particularly in protected areas

Stop harmful fisheries subsidies (SDG14.6)

Marine protected areas help to rebuild healthy stocks and increase production

Implement the Code of Conduct of Responsible Fisheries

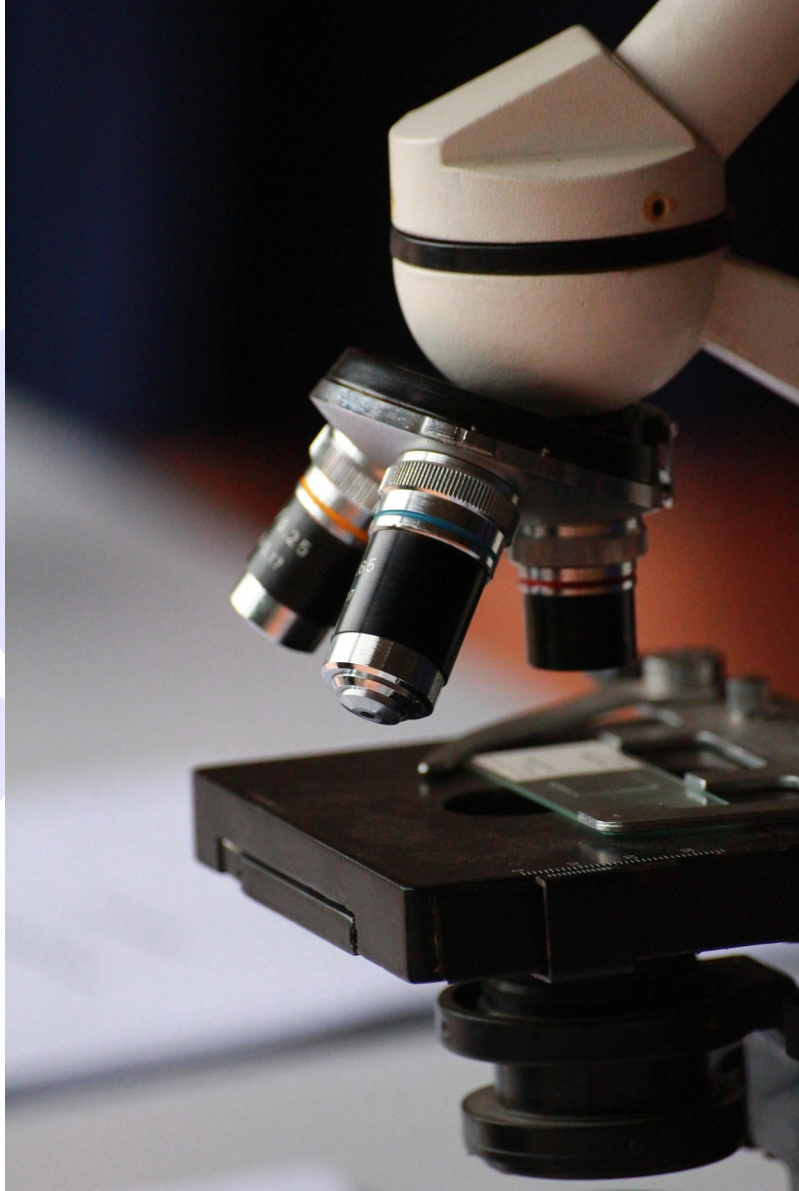
Science and civil society

Results of scientific research are indispensable for international negotiations, yet the science rarely translates directly into management or policy.

Results are not always at the right scale for straight forward decisions.

But international scientific cooperation and the capacity strengthening that goes with it is a powerful way of building trust essential for broader cooperation and action.

NGOs use research results increasingly, translating them into policy briefs which tend to be more accessible than science publications.



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...enforcing good existing rules in Europe

European small-scale fishers complain in the European Parliament that EU member states do not implement the provisions of the European Common Fisheries Policy, e.g. they do not allocate fishing rights to low impact fishers despite provision of Art. 17 to use a combination of social, environmental and economic criteria.

Instead member states grant fishing rights on the basis of historical catches to those industrial vessels with the greatest damage track record.

(Picture by CE Nauen,
taken 25 March 2025 in the EP, Brussels)

…NGOs and fishers together?

Many small-scale fishers also fear that they are not being heard, while well-funded NGOs influence government decisions strongly. When declaring protected areas close to their homes, people with small boats may loose access to resources.

At the SSF Summit 2024 in Rome, Pip Cohen of Turning Tides drew attention to massive funding of ocean and climate philanthropies to big international NGOs, while hardly any support went directly to coastal communities.

Conversely, with mutual respect NGOs, small-scale fishers and indigenous people can cooperate well for nature.

Reconnecting people and planet

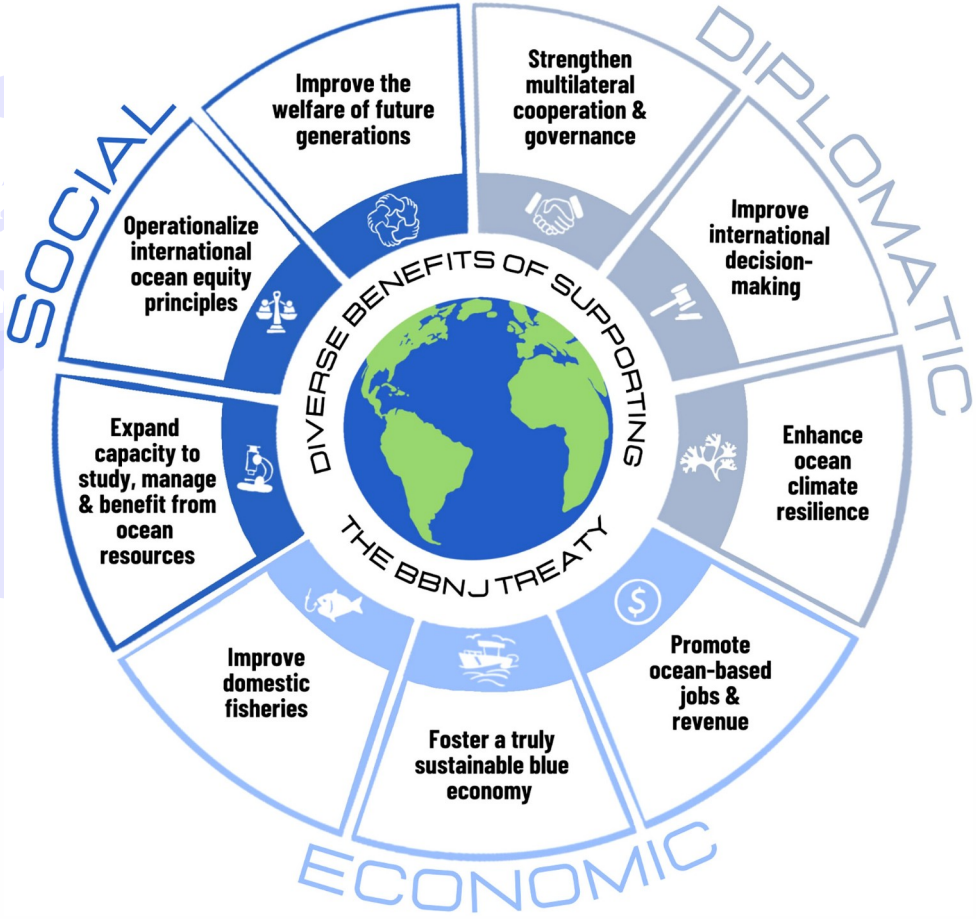
Approaches to managing social affairs usually do not scale as cues even from ubiquitous brands give rise to different responses in different localities and countries. Harnessing a combination of traditional and indigenous knowledges and providing intelligible access to the sciences holds potential for an equitable ‘Blue Economy’.

Jasanoff, S. (2004). Ordering knowledge, ordering society. Chapter 2 pp. 13-45 in Jasanoff, S. (ed.), *States of Knowledge: The Co-Production of Science and the Social Order.* Routledge

From International Agreements…

Governments have agreed on a treaty under the Law of the Sea for protecting biodiversity in waters beyond national jurisdiction (BBNJ). It subjects the High Seas among others to measures to protect 30% for biodiversity recovery.

The admirable consensus-forming international negotiation processes harbour many lessons for advancing marine protection, especially when local communities are participating in governance affecting their futures.



Santos, B.S., *et al*. (2022). The diverse benefits of biodiversity conservation in global ocean areas beyond national jurisdiction. *Front. Mar. Sci*., Sec. Marine Affairs and Policy, Vol. 9 | https://doi.org/10.3389/fmars.2022.1001240

…to implementation 'on the ground' (1)

Human security needs **participation in governance with economic and life perspectives for young people** to stay in the countries and not take high risk journeys e.g. across the sea or the desert in pursuit of dreams that have already ended in death or bad delusions for many.

Small-Scale Fisheries Guidelines Video in Pidgin English

Gender Equity Video in Pidgin English

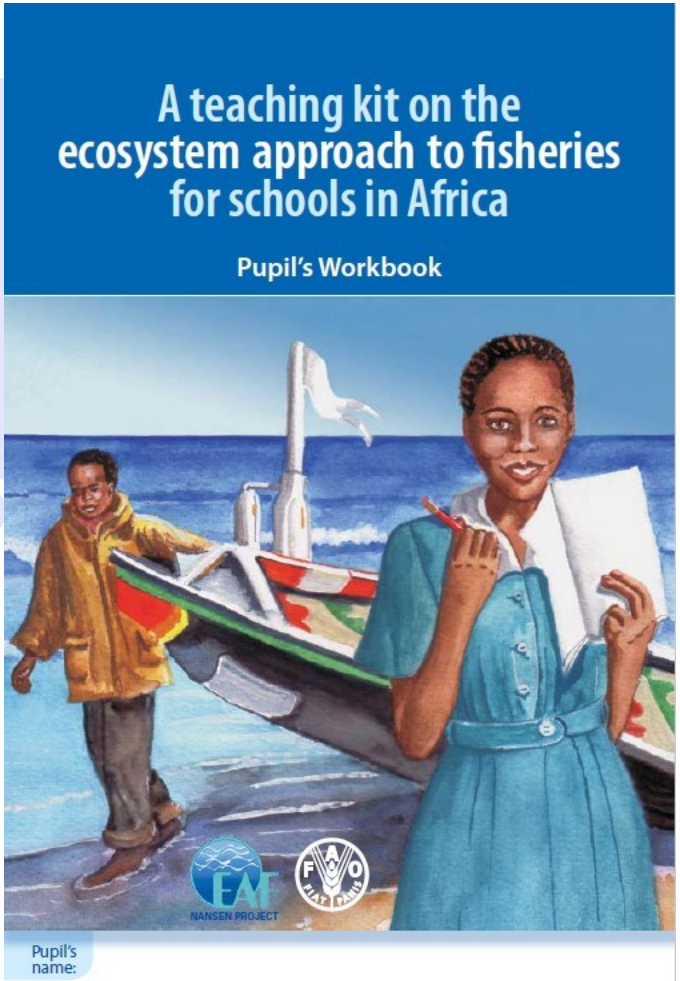
Some necessary steps:

- People to **know their rights**, e.g. the Guidelines to secure sustainable small-scale fisheries, also in Europe
- Video on the **SSF Guidelines** and gender equity in Pidgin English, Wolof, Yoruba done, Fante done with partners in Nigeria and Ghana, available also in European languages.

…to implementation ‘on the ground’ (2)

Industrial resource extractions and pollution provoke damage to the coastal environments and their ecosystems which sustained e.g. many people’s livelihood in West Africa. That is a powerful driver for irregular migration and criminal acts. Restoring resources brakes that vicious circle. How?

- **Teaching and adopting the ecosystem approach to fisherie**s from early age (e.g. teaching kit developed by *Mundus maris*)
- **Take out less than can regrow**
- **Let juvenile fish grow to reproduce**
- Curb pollution
- Compensate small-scale fishers for a transitional period with reduced fishing until recovery to avoid being drawn into criminal practices



…to implementation ‘on the ground’ (3)

Example: Will the Ghanaian government walk the talk?
It has become a participant in the Fisheries Transparency Initiative (**FiTI**) in 2024 and is Ocean Panel member.

Yet, a recent report by journalist Gideon Sarpong deplores the disappearance of Ghanaian fisheries observers from Korean and Chinese industrial vessels flagged in Ghana. Several public figures, Persons Exposed to Politics (**PEP**), have not declared their potential **conflict of interest** by owning vessels e.g. of Dalian Mengxin Ocean Fisheries. Ghanaian law prohibits foreign ownership of industrial vessels.

Over 80% of companies licensed to operate fishing vessels in Ghana failed to declare beneficial ownership, despite evidence of foreign ownership ties. No rule enforcement.

Hardship for local fishers, women and men

The disappearance of ‘people fish’ largely from overfishing by industrial vessels of undeclared, but suspected Chinese beneficial ownership, creates great hardship for women and men in local artisanal fisheries in **Ghana**.

In **Senegal** similar conditions have provoked a spike in irregular emigration by whatever means. The confirmed death toll is much more than 500.
A large alliance of civic organisations urges the government to take more decisive action to stop the loss of lives and youths for the future of the country.
Mundus maris supports the appeal.

Foto: Herbert Bieser from Pixabay

Murky operations of European vessels too

EU Red Card for Cameroon, thus no imports of fish from the country.
Yet, 12 vessels, owned, managed, or associated with companies tied to the European Union, continue to raise the flag of Cameroon.
Surprisingly, trade data from the European Market Observatory for Fisheries and Aquaculture (EUMOFA), revealed that nearly €10 million worth of fish had entered the EU from Cameroon between January 2023 and September 2023, despite the ban.
Ocean Whale harvests small pelagics e.g. in Bissau and neighbours aggravating the resource crisis.

Foto: Daniel Abugre Anyorigya

Transparency and accountability

- Invest in people, **strengthen coastal communities and collective action**
- Strengthen respectful links of communities with regional and national governments to create spaces for innovative solutions not based exclusively on resource extraction and export – **hold governments accountable** for keeping citizens out of harm's way and rebuild resources to "grow the cake available for sharing" by resource recovery & responsible harvesting.
- Build **broader coalitions** incl. with local businesses; this enhances chances of success, but this requires rights-based approaches without excessive power differences.
- Accept it's hard work, needs willingness to learn, recognise women as equals

Call to action

- Women must have **access to social services and professional support** – build networks and trust, not be cheap factory labour
- Strengthen local organisational and technical capacities; respect and emphasise **cultural heritage** for buy-in
- **Connect** international agreements to local experience to enhance agency, confidence and fairness.
- Listening, respectful dialogue, and encouragement of **collaboration** are key
- **Certifications** and labels can help, but are no panacea as fraud is widespread.

Europe is wealthy, but SSF struggle

- Fish biomasses in European waters are lower than needed to produce MSY according to the law, so catches are shrinking.
- Coastal fishers sometimes take initiatives to protect area against fishing to rebuild healthy and productive resources, but they need assurances that the benefits from their sacrifices accrue to them and not to industrial vessels sweeping their coastal fishing grounds clean.
- Trust building and dialogue are crucial to break the internationally negotiated principles down to local context and make them work.

Marine Protected Area in the Azores

Presented at the Blue Parks workshop during the EU Ocean Days 2025

Want to try deliberations out?

- We developed a role play titled ‘Protecting Blue Horizons’ about making a marine protected area work.
- Based on interviews and literature research, we created up to 11 characters of stakeholders who express their diverse, sometimes strongly contradictory, views. Objective: Build consensus, but not at all costs.
- Tested with young marine researchers with different backgrounds.

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What can be take home messages?

- Governments have many constraints and likely to listen more easily to powerful industrial lobbies than to you and me. Help them be courageous.
- In today's entangled crises and complex situations, purely sectoral knowledge or business as usual are harmful.
- Trust building and dialogue are crucial to break the internationally negotiated principles down to local context and make them work.
- Dialogue and deliberations to achieve an agreed goal work best in a safe space where everyone is respected and accepted without judgement.
- Civil society organisations are important for achieving transparency and accountability, but need to be humble themselves towards others.

Not to forget...

- In today's context, when extreme right-wing power-hungry groups, a small elite of incredibly rich and dominant company managers fear, what the Limit to Growth has warned of, they do not shy away from violence.
- Civil society organisations therefore need to use invaluable research results from all areas of knowledge to help access to others.
- Foremost, it is important to organise in groups around important objectives of social fairness and nature healing and protection. Cooperate!
- Make sure nobody is left isolated and more prone to be targeted by violence.
- Peaceful but firm cooperation and collective action can achieve great and fair solutions.

Small selection of literature

- Bennett N.J. (2022). Mainstreaming Equity and Justice in the Ocean. *Frontiers in Marine Science*, Vol. 9 DOI 10.3389/fmars.2022.873572
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Thanks for your attention

Mundus maris looks for collaboration

More Info:

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