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BRIEFING: Fisheries and the Climate Crisis

An urgent gap to be addressed in European fisheries management

The greatest threat to the planet is also impacting the ocean

The climate crisis is affecting the ocean in many ways, including warming waters and ocean acidification, and its impacts are expected to intensify in the coming years and decades.[1] These changes to the marine environment weaken the ability of the ocean to perform critical ecosystem functions, putting food production, carbon storage, climate regulation and oxygen generation at risk, and exacerbating the current environmental crises.[2]

Human-induced climate change and biodiversity loss are existential threats to the marine environment and to coastal communities. Overfishing and destructive fishing have been the main drivers of marine biodiversity loss for the last 40 years, and they also critically undermine the resilience of fish, seabirds, marine mammals, and other wildlife to the impacts of global heating.[3,4]

The climate crisis is also causing significant changes in the availability and trade of seafood products, with potentially important geopolitical and economic consequences, especially for those countries most dependent on fisheries. Production changes are partly a result of expected shifts in the abundance and distribution of species, which are likely to cause imbalances in ecosystems and conflicts within and among fishing communities, sectors, and countries.[5]

Within this context, ocean conservation is essential in the fight against the climate crisis. The impact of climate change on fishing activities will be determined by the ability to anticipate and adapt to new circumstances. At the same time, all economic sectors, including the fishing industry, have a responsibility to contribute to climate change mitigation. Climate inaction has a higher environmental, social, and economic cost than a transition to a net zero carbon future.

Climate change mitigation and adaptation in fisheries

The Intergovernmental Panel on Climate Change (IPCC) defines **mitigation as an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases**. Mitigation efforts are therefore focused on limiting the overall rise in average global temperature as much as possible, to reduce the harmful impacts of climate change.

To mitigate the climate crisis, we must immediately reduce and quickly phase out fossil fuels, and transition to clean, renewable energy.


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The Food and Agriculture Organization of the United Nations has identified options[5] to reduce fuel use and greenhouse gas emissions for the fishing sector, for example through improving vessel shapes, as well as by reducing the average speed of vessels. Beyond such technological fixes, reducing greenhouse gas emissions from fishing necessitates a fundamental shift, particularly in large-scale, industrial fishing operations. Reducing fishing pressure, shortening the distance from the coast and the depth of operation, phasing out bottom-towed gear, and other transformational measures are necessary to safeguard marine life and simultaneously decrease fuel use and carbon emissions from fishing.

According to the IPCC, **adaptation is the process of adjustment to actual or expected climate and its effects**. Even with significant reductions in emissions, the IPCC states that major impacts from climate change are now locked in, including increasing loss of Arctic Sea ice, warming water temperatures, and ocean acidification. We must therefore complement our mitigation efforts with those focused on helping marine ecosystems and coastal communities adapt to a changing climate which already affects them.

Ending overfishing and destructive fishing and protecting marine habitats would strengthen the resilience of marine and coastal ecosystems, their associated wildlife, and the people who depend on them in the face of the climate crisis[6]. Healthy and biodiverse habitats are more likely to deliver ecosystem services for coastal communities, such as providing a resilient supply of food and sequestering atmospheric carbon. Global heating is also affecting the distribution and abundance of marine species. As fish populations shift to account for changing temperatures, salinity levels and other variables, fisheries managers must adapt to increasing or decreasing stock availability. Without climate-adaptive, transboundary management, many stocks will face an increased risk of crashing or collapsing due to overfishing.

Policy recommendations

Fisheries management must be aligned with the EU flagship agenda, the European Green Deal, in which the EU committed to shift investment and legislation towards a climate-resilient and ecologically sound economy.

Climate considerations are absent from the EU's fisheries regulatory framework, including the Common Fisheries Policy (CFP), which was reformed in 2013. However, the EU has legal instruments to fill this gap without entering a reform process of the CFP. In particular, the Biodiversity Strategy for 2030, which commits to "put Europe's biodiversity on the path to recovery by 2030, for the benefit of people, climate and the planet", includes the commitment to an Action Plan to conserve fisheries resources and protect marine ecosystems, which can address climate considerations. Key actions should include designating and highly protecting at least 30% of Europe's seas by 2030, with at least 10% fully protected, and prohibiting destructive activities in marine protected areas (MPAs). At global level, the EU must lead on delivering international commitments, such as the Paris Agreement, the Convention on Biological Diversity, and the United Nations Sustainable Development Goals.

Oceana lists below ten recommendations for fisheries to reduce their contribution to greenhouse gas emissions and bolster climate resilience:

1. The European Commission and Member States should **urgently address CFP implementation shortcomings**, such as catch limits that still exceed scientific advice, unimplemented landing obligation and unselective fishing causing persistent by-catch, as well as other negative impacts of fishing on marine species and habitats. The European Commission's report on the functioning of the CFP (due by December 2022) must guide better implementation of the policy and include clear references to climate action and the need to increase the resilience of marine ecosystems.

2. The Commission should request the International Council for the Exploration of the Sea (ICES) to conduct **Ecosystem and Climate Impact Assessments of EU fisheries** (including on the carbon sequestration potential of fish populations, the seabed, and marine habitats, as well as the greenhouse gas emissions from fuel consumption). Based on these assessments, the Commission should initiate a roadmap for a just transition to climate-friendly, low-impact fisheries.

3. The European Commission should also request ICES **scientific advice on fishing opportunities that reflects a climate and ecosystem-based approach**, with special attention to mixed fisheries and the most depleted stocks. Where possible, the Commission should propose, and the Council adopt, fishing limits below the Maximum Sustainable Yield (MSY)[i] point value to provide a "climate buffer" for fish populations under multiple stressors.

4. The EU should **increase its responsiveness in fisheries governance to account for changing conditions**, including geographical shifts in stock distribution due to global heating and potential conflicts with neighbouring countries. In dialogue with third countries, the EU should develop harvest strategies and quota allocation models that can respond to changes in species abundance and/or distribution patterns, as well as address mismatches between management areas (i.e., for Total Allowable Catches - TACs) and stock distribution areas (i.e., ICES areas).

5. The Commission should include in the upcoming **EU restoration law** ambitious, legally binding targets for marine habitat protection, prioritising **fully protected MPAs**, carbon-rich ecosystems and essential fish habitats (e.g., nurseries and spawning grounds). The ocean floor is the world's largest carbon storehouse - it should be left undisturbed.[ii,7] The EU should protect **"blue carbon" ecosystems** such as tidal marshes, seagrass, and kelp forests, and their sequestration capacity. The Commission should scrutinise forthcoming national restoration plans, to ensure synergies between habitat restoration and increasing climate resilience.

6. The EU should **prohibit destructive fishing gear** in sensitive and vulnerable marine areas, to not only safeguard fisheries and biodiversity (including carbon-rich habitats), but also to strengthen ocean resilience to climate impacts, particularly:

   - by prohibiting destructive bottom-contacting gear in all European MPAs and in coastal areas (using CFP Article 11, emergency measures and the introduction of new legislative proposals);
   - by prohibiting destructive bottom-contacting gear over known Vulnerable Marine Ecosystems (through the transposition of scientific data from ICES into a Commission Implementing Regulation related to Regulation (EU) 2016/2336).

[i] Maximum Sustainable Yield is the largest average catch or yield that can continuously be taken from a fish stock under existing environmental conditions.

[ii] This recent scientific paper states that "*disturbance of these carbon stores can re-mineralize sedimentary carbon to CO_2, which is likely to increase ocean acidification, reduce the buffering capacity of the ocean and potentially add to the build-up of atmospheric CO_2. Thus, protecting the carbon-rich seabed is a potentially important nature-based solution to climate change.*"

7 The EU should **decarbonise the fishing industry** towards net zero by reducing fuel use, fleet overcapacity, and carbon-intensive methods of fishing. The entire supply chain, from the extraction of fish and cold storage to the distribution and commercialisation of fish products, should reduce its carbon footprint and introduce alternative sources of sustainable renewable energy. The fishing industry should not be exempt from contributing to the EU's climate objectives. The European Maritime, Fisheries and Aquaculture Fund (EMFAF) is instrumental in the transition to sustainable and low-carbon fishing.

8 EU fleets should **transition to low-impact**, generally passive, and more local forms of fishing. It is urgent to limit high-impact, bottom-contacting mobile gear, which has a high fuel consumption and greenhouse gas footprint, as well as severe impacts on marine ecosystems and generally high rates of by-catch and discards. Member States should **implement CFP Article 17**, which incentivises the allocation of fishing opportunities to low-impact operators. These allocations should include environmental and climate criteria, including the carbon footprint per unit of catch, and the impact on blue carbon habitats and other marine carbon stores including the seabed.

9 The EU should **eliminate harmful fisheries subsidies** that keep afloat the fleet segments with the highest carbon footprint. Removing the fuel tax exemption under the Energy Taxation Directive would disincentivise fuel-intensive, destructive fishing practices such as the use of mobile bottom-contacting gear.

10 The Commission should follow a **principle-based approach** and **scrutinise the spending** of emergency, recovery, and structural funds to ensure that EU taxpayers' money does not end up fuelling overcapacity, overfishing or illegal fishing, but instead supports the transition to a climate-friendly, low-impact EU fleet and fisheries sector.

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OCEANA IN EUROPE

European Headquarters:
Madrid, Spain
europe@oceana.org

European Union Office:
Brussels, Belgium
brussels@oceana.org

United Kingdom Office:
London, UK
oceanauk@oceana.org

Baltic and North Sea Office:
Copenhagen, Denmark
copenhagen@oceana.org

www.europe.oceana.org