UNCTAD's inputs on "sustainable fisheries management in the face of climate change"

Related to request by DOALOS on UNGA 78/68 of 5 Dec 2023

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1. **Enabling the energy transition of fishing fleets as a tool for sustainable management of stocks.**

UNCTAD has recently issued a first mapping report on the energy transition for fishing fleets with estimates of emissions ranging from 0.1 to 0.5 per cent of global carbon emissions by fishing fleets and about 4 per cent of emissions from food and agriculture (UNCTAD, 2023)[1]. The fisheries sector, crucial for the livelihoods of more than 40 million people worldwide, faces escalating threats from climate change. These include rising sea levels and warming waters that jeopardize fishing ports and deplete fish stocks. The risks are particularly high for developing countries, where small-scale and artisanal fishing prevails. Yet the fishing industry lacks comprehensive global targets and guidelines for transitioning to cleaner energy, as the new UNCTAD report highlights.

The report covers a range of motorized fishing operations, from pre-harvesting to landing, and the infrastructure involved. It assesses the opportunities and challenges of adopting alternative fuels, emphasizing the need to ensure a "just" energy transition that doesn't disproportionately affect vulnerable countries or fishing communities.

Existing energy efficiency measures and regulations adopted by the International Maritime Organization (IMO) for global shipping are of only limited application to fishing vessels, primarily due to their size and operational patterns. For example, vessels that fall below certain tonnage thresholds or operate exclusively within a flag State's jurisdiction are exempt. Fishing vessels are also currently excluded from reporting obligations and market-based measures for GHG reduction adopted at the European Union level, except for the taxation of energy products used to propel all vessels.

The report also finds that in the context of Nationally Determined Contributions (NDCs) under the Paris Agreement – where countries outline their pledges to cut emissions and adapt to climate change – most of the top ten major aquatic food exporters show limited commitments to climate mitigation or adaptation in fisheries-related sectors.

The report assesses several alternative fuels for fishing vessels at different maturity stages, underscoring the need for further research and development (R&D) for their successful integration. Among the options, green biofuels, made from non-food feedstocks or fish waste, stand out as the most readily available and mature option. It also acknowledges the promise of green hydrogen and green ammonia but says both require further R&D to address issues related to safety, scalability, cost-effectiveness, the storage capacity of vessels and ports, and delivery infrastructure. For green methanol and liquefied natural gas, it says both pose challenges in terms of retrofitting and safety, with limited potential to fully decarbonize fleets.

The report outlines other ways to reduce fishing vessels' GHG emissions, such as electric and hybrid engines, wind propulsion technologies and digital technologies to improve energy efficiency. It also underscores the need for a balanced and gradual approach, calling for the incremental adoption of a

[1] UNCTAD, 2023. Energy transition of fishing fleets: Opportunities and challenges for developing countries. See: https://unctad.org/system/files/official-document/ditcted2023d5_en.pdf

sustainable energy mix to mitigate impacts on small-scale fisheries and marginalized fishing communities.

On the economic and technological fronts, UNCTAD calls for a globally harmonized system for data collection, adapted to small-scale and artisanal fisheries, to monitor and report fishing fleet GHG emissions. It also encourages exploring sustainable fuel options from circular economy practices, such as converting fish waste and seaweed into biofuel or biogas for fishing vessels and expanding their delivery infrastructure.

From a trade, value chain and infrastructure point of view, the report urges the incremental phase-out and, ultimately, prohibition of fossil fuel-based subsidies to the fisheries sector. Also crucial are effective measures on climate change adaptation, resilience-building, and disaster risk reduction for seaport infrastructure, as well as improving access to affordable financing for developing countries.

On environmental considerations, the report calls on countries to introduce fishing fleet decarbonization commitments into NDCs to align mitigation and adaptation efforts, saying decarbonization cannot be decoupled from fish stocks sustainability. Finally, addressing social factors, it calls for prioritizing the well-being, livelihoods and rights of fishers in the energy transition and enhancing safety standards.

2. Addressing the implications of climate change for fishing ports

As part of the recommendations, the abovementioned UNCTAD report[2] also highlights the urgent need for the development and implementation of effective measures on climate change adaptation, resilience building and disaster risk reduction (DRR) for seaport infrastructure on which fisheries activities depend; and improved access to affordable financing for developing countries.

Fishing ports play a major role in the fishing industry. They give vessels, crews and processors access to essential services and supplies enabling vessel operators to land and process their catch. Fishing ports authorities are also an essential ally in the fight against illegal, unreported and unregulated (IUU) fishing, controlling landings and in enforcing fish management plans.

Fishing ports will play an important role in the energy transition as many of the new technologies and fuels will need storage, servicing, fixing, fuelling, and landing infrastructure. Current infrastructure has been designed for diesel and other fossil fuels. To accommodate hybrid or alternative fuels such as biofuels, ammonia or hydrogen, significant infrastructure changes and investment will be needed. Such changes will be impossible to be taken and assumed only by fishing vessels owners and fishers due the sizes, security, safety, and technical and delivery challenges to come.

While ports provide critical access to fisheries and other ocean economy activities, due to their location they are also particularly affected by rising sea levels and storm surges, waves, and winds, as well as riverine and pluvial flooding. Associated risks, costs and economic repercussions may be considerable, with important implications for the sustainable development prospects of the most vulnerable countries, such as SIDS.[3] This includes SIDS, highly dependent on their ports and

[2] Ibid.

[3] UNCTAD, 2021. Climate change impacts on seaports: A growing threat to sustainable trade and development. Available at https://unctad.org/news/climate-change-impacts-seaports-growing-threat-sustainable-trade-and-development. For further information about related research, technical cooperation and consensus-building by UNCTAD, see https://unctad.org/topic/transport-and-trade-logistics/policy-and-legislation/climate-change-and-maritime-transport.

particularly vulnerable to the impacts of climate change, where ports are at high and growing risk of coastal flooding, from as early as in the 2030s[4], in the absence of effective adaptation.

In some cases, fishing and shipping activities are carried out in the same seaport but with separate facilities and storage houses as fish and other marine species need special handling and sanitary measures, including isolation from polluting activities or hazardous substances. Often, countries tend to have separate ports for fishing and cargo vessels, and particularly for small-scale fishing vessels.

In the light of growing climate hazards and long infrastructure lifespans and planning horizons as well as in view of the cost of inaction, enhancing the climate resilience of seaports, including fishing ports will also be key in achieving progress on many of the Goals and targets of the 2030 Agenda for Sustainable Development, including Goal 9 on building resilient infrastructure; Goal 13 on taking urgent action to combat climate change and its impacts; Goal 14 on conserving and sustainably using the oceans, seas and marine resources for sustainable development; and target 1.5 on building the resilience of the poor and those in vulnerable situations and reducing their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

All ports, including fishing ports, also play a very important role in post disaster response and recovery, as well as reconstruction. However, as has been noted in a recent UNCTAD Policy Brief[5], for developing countries and particularly SIDS, better availability, and access to port infrastructure adaptation finance, including in the form of grants, rather than loans will be critical for resilience, food security and local livelihoods. Drawing on synergies with energy efficiency, decarbonization and renewables can also provide important co-benefits for adaptation, e.g., in response to impacts of extreme heat, reduce related energy needs and costs and increase energy security, especially for developing countries that are at the forefront of climate change impacts, but with limited capacity to respond.

3. Towards a climate resilient multispecies finfish management: the case of Belize

UNCTAD, DOALOS in cooperation with Environmental Defense Fund (EDF) proposed a national adaptive multispecies finfish management plan for Belize[6] in 2022. The plan's development and implementation are initiatives of the Belize Fisheries Department, in compliance with the provisions of the Fisheries Resources Act of 2020 and in accordance with the National Fisheries Policy, Strategy & Action Plan (NFPSAP) of Belize and the Oceans Economy and Trade Strategies Programme[7].

The management plan proposal builds upon the existing governance and management framework for the coastal fisheries of Belize, including the Managed Access secure fishing rights programme that was adopted countrywide in 2016. The proposed plan applies an adaptive management framework (AMF), an 11-step decision-making framework already in use for the queen conch and spiny lobster fisheries.

[4] Monioudi, I.N., Asariotis, R., Becker, A. *et al.* Climate change impacts on critical international transportation assets of Caribbean Small Island Developing States (SIDS): the case of Jamaica and Saint Lucia. *Reg Environ Change* **18**, 2211–2225 (2018). https://doi.org/10.1007/s10113-018-1360-4.

[5] UNCTAD, 2022. Policy Brief: Climate-resilience of seaports: Adequate finance is critical for developing countries but remains a major challenge, available at: https://unctad.org/system/files/official-document/presspb2022d11_en.pdf.

[6] UNCTAD, 2022. Towards a climate resilient multispecies finfish management plan for Belize, available at: https://unctad.org/system/files/official-document/ditcted2022d1_en.pdf

[7] UNCTAD programme on Evidence-based and policy coherent Oceans Economy and Trade Strategies, available at: https://unctad.org/project/evidence-based-and-policy-coherent-oceans-economy-and-trade-strategies.

The AMF guides the implementation of, or adjustment to, harvest controls based on regular fishery monitoring and a set of pre-determined harvest control rules. For the complex, multispecies finfish fishery, the AMF is augmented with a "fish baskets" approach that simplifies monitoring and decision-making by grouping managed species into baskets. The basket approach looks at various vulnerabilities including status of the stocks as well as various climate change impacts including seawater warming and changes in migratory patterns.

Stakeholders who participated in the plan's development identified 47 finfish target species to include in the plan and grouped these species into 13 baskets based on fishery and species characteristics. Fishery stakeholders also recommended harvest control measures, such as size limits, gear restrictions and closed seasons, that may be appropriate and effective for each basket should additional controls be necessary to achieve fishery goals.

The proposed plan describes the governance and management structure for the multispecies finfish fishery. The Belize Fisheries Department is the only government institution mandated with management responsibility for the finfish fishery. The primary responsibility of the Department is to ensure the sound management, conservation, and sustainable use of the finfish resource. The Fisheries Department maintains co-management agreements with three non-governmental organizations (NGOs) which provide support in the monitoring, control and surveillance of fishing activities within their specific marine reserve.

This plan can offer some experience and lessons on how to improve existing management plans when applied to multiple species and to face climate vulnerabilities.
