Decarbonization opportunities and challenges in the Blue Economy

UNCTAD Trade and Development Board
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Europêche

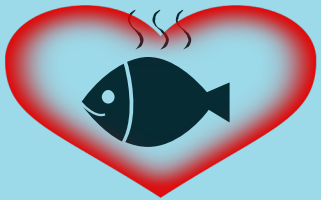
Keep eating wild -caught fish: It's the best way to feed the world

CO_2 emissions from fishing are down by 50 %
(in the EU if compared to 90's levels)*

PERFECT PROTEIN

Wild fish live freely and does not require feeding, use of water supply, antibiotics or pesticides

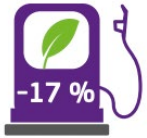
Healthiest animal protein



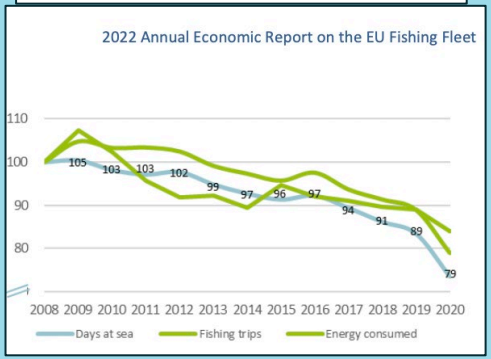
CLIMATE PROTECTION

By far the animal protein with the **lowest carbon footprint** thus the best option in terms of **food security**

Energy consumption
(in millions of litres of fuel)



Fuel consumption decrease from 2009 to 2017 (in green)



The environmental cost of animal source foods
https://esajournals.onlinelibrary.wiley.com/doi/epdf/10.1002/fee.1822

*Source UNCTAD (2023) based on UNFCCC 2023

Roadmap towards decarbonisation

Transition

- Zero-emission energy sources
- Upgrade vessel design
- Improve gear design & reduce drag
- Reduce the time spent at sea (e.g., healthy stocks, improve efficiency)
- Better understand trade-offs in energy consumption per unit landings
- Integrative approach – whole supply chain
- Global efforts – race to the top

Technical Progress

Innovations to increase selectivity, reduce seabed contact, GHG emissions

Annex

Table A1 Short description of the terms of innovative gears. The Ref. column refers to the factsheet number as reported by WKING (ICES, 2020a).

Ref.	Term	Description
6.1.1	FlexSelect	A counter-herding device for demersal trawls to reduce catch of unwanted fish by scaring or directing unwanted fish away from the path of the trawl
6.1.2	Brown shrimp sorting grid	Size-sorting grid to reduce undersized shrimps
6.1.3	Netgrid	Inclined net grid comprised of a four-panel box section inserted into a standard two-panel trawl, into which an inclined net panel of 80 mm netting is laced
6.1.4	SepNep	Combination of an inclined U-shaped tapered net panel, a grid, and double codends to improve selectivity of *Nephrops*, plaice, dab, and whiting
6.1.5	Combination grid	Combination grid system made of a species-selective upper half grid and a size-selective lower half grid to improve selectivity of *Pandalus* and *Nephrops*
6.1.6	Grid and double codend	Grid system with two codends to separate flatfish from roundfish and improve species and size selectivity
6.1.7	Shrimp pulse	Shrimp pulse trawl; the mechanical stimulation to catch shrimp replaced by an electrical stimulus
6.1.8	Flying drone	Flying drone with scientific echosounder to improve individual and school-size selectivity before the net is deployed
6.1.9	PingMe	Acoustic device to locate ghost-fishing nets and equipment, as well as active fishing gear underwater
6.2.1	Controllable doors	Remote controllable trawl doors made from highly efficient aerodynamic designed wings
6.2.2	Floating sweeps	Floating sweeps between the trawl doors and trawl wing ends
6.2.3	Scaring ropes	Fish scaring ropes ahead of a *Nephrops* trawl's mouth
6.2.4	Electro-razor	Razor clam dredge with a collecting basket, located behind electrodes to improve razor clam selectivity and to reduce impact
6.2.5	Echo-sensor detector	Acoustic sensor installed on a grid to quantify *Nephrops* catches
6.2.6	Flemish panel	A flatfish beam trawl with a large mesh panel in the rear part of the lower belly
6.3.1	Crustacean BRDs	Three different grid systems experimented in the Portuguese fisheries to improve size and species selectivity of *Nephrops* and shrimps
6.3.5	Hookpod	Hook pod that keeps a hook's barb covered during deployment to avoid seabird bycatch
6.4.1	Mini Danish seine	Mini Danish seine as an alternative to gillnet to reduce seal bycatch
6.4.2	Pontoon trap	Large trapnet fishery in coastal waters as an alternative to gillnet fisheries for the reduction of seal bycatch
6.4.3	Pearl-nets	Small acrylic glass spheres for standard gillnets to improve the acoustic visibility for small-toothed whales
6.4.4	Nemos + Roofless	Selectivity device to reduce cod bycatch, while maintaining the catch efficiency for flatfish; the device consists of a square net section (four-panel extension) mounted between the belly of the trawl and the codend and an escape window in the top panel
6.4.5	Alternative pots	New pot fishery for cod in areas where traditionally trawl and net fishery is carried out; the aim is to reduce marine mammal bycatch
6.4.6	ADD	Devices added on the gillnet, producing acoustic sound that keep animals away from the gear
6.4.7	Boat seine	Alternative gear to replace gillnet impact on the seal population
6.5.1	Dual codend	Dual codend with the uppermost codend, manufactured with larger meshes; fish and shrimps can pass through cuttings on the uppermost netting panel of the lower codend
6.5.2	Semi-pelagic doors	High efficient hydrodynamic shaped trawl doors with proven higher spreading force in low angle of attack to work off the seabed
6.5.3	Recycled plastic doors	Highly efficient aerodynamic shaped fishing doors made from recycled plastic
6.5.5	High-strength materials	New material for trawl manufacture (Dyneema)
6.5.6	Flex-TED	Turtle-excluding device (TED) to reduce sea turtle bycatch
6.5.7	Guardian-net	Trammelnet provided with "guarding net" to reduce unwanted bycatch
6.5.8	Detached groundgear	Modified groundgear by cutting the rigging between fishing line and footrope in the central part and reduce physical impact
6.5.9	JTED	Juvenile and trash excluder device; sorting grids with different bar spacing to improve target species selectivity
6.5.11	Lionfish trap	Bottom fish trap for long-term immersion and target invasive species (lionfish)

Thyboron (Denmark) Morgére (France) Polardoors (Iceland)

An example of innovative fishing gear: New semi-pelagic otterboards have been developed in the last years by different door manufactures (e.g. Thyborøn, Denmark; Polar fishing gear, Iceland; Morgére, France). These semi-pelagic otterboards can eliminate seabed contact by operating 2-5 m off the seafloor while keeping the trawl on the ground, thus maintaining the same harvesting and catch efficiency. As a result, there is significantly less damage to benthic ecosystems, and decreased bycatch of sedentary benthic animals, as well as lower fuel consumption, pollution and GHG emissions.

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Energy Efficiency

Electric Power

TRAWLERS IN SCHEVENINGEN USING SHORE POWER

March 2017 saw the official commissioning of shore power connections for large seagoing vessels (including our trawlers) in the first and third harbours in the port of Scheveningen. The shore power is procured entirely from green sources. Using these electrical supplies means vessels no longer have to generate electricity themselves by running their auxiliary engine while they are in port. This saves on diesel.

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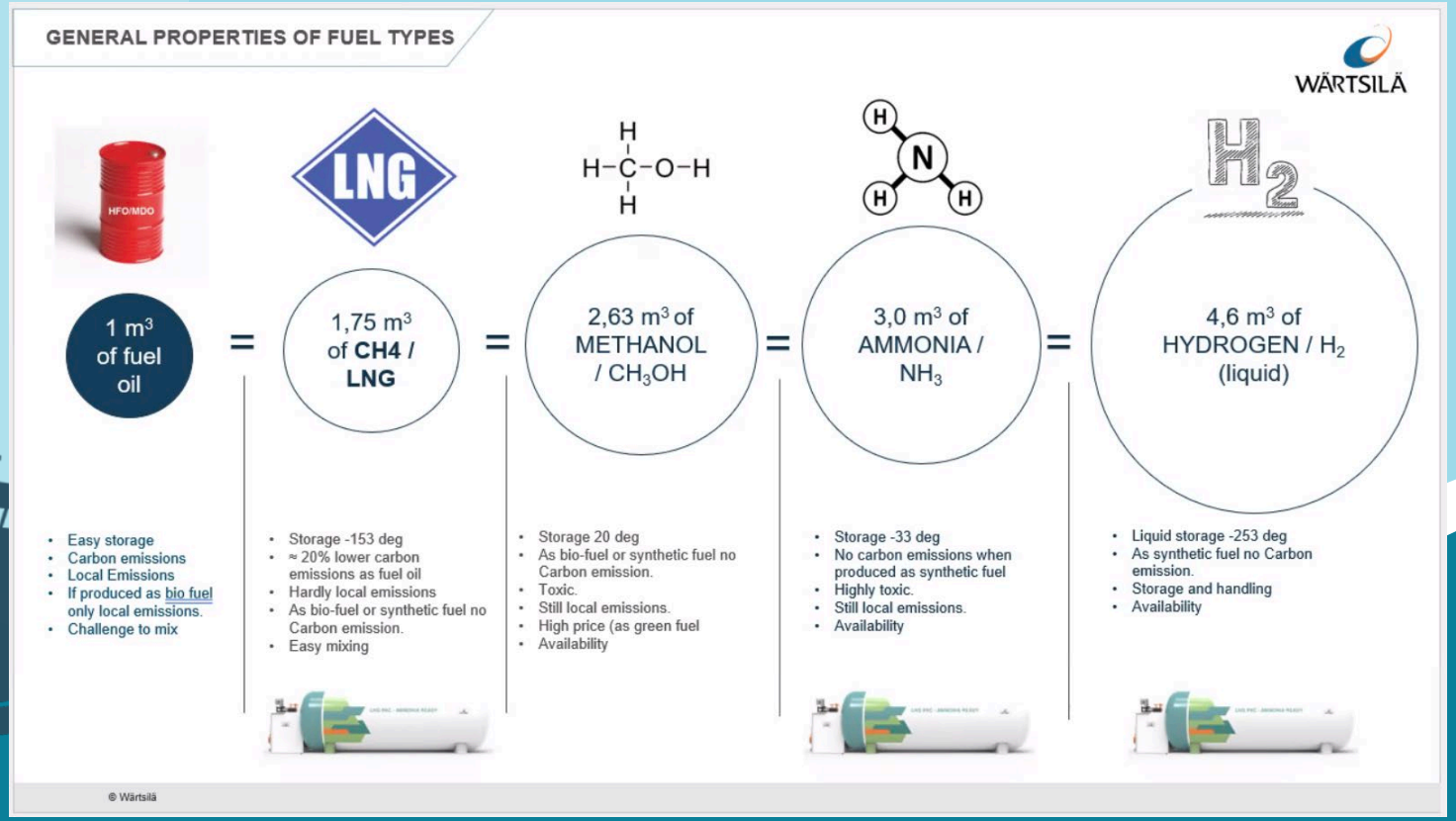
Alternatives to fuel oil ?



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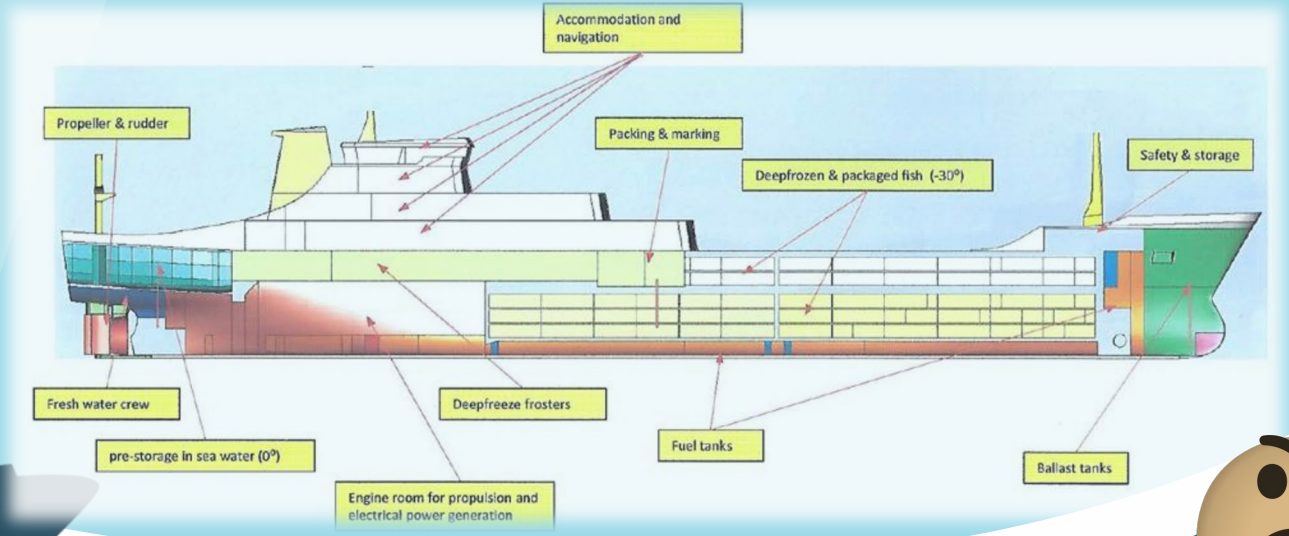
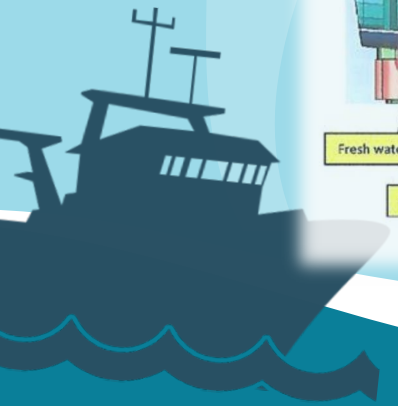
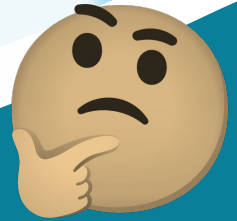
Revise Fishing Capacity Definition







In the EU, kitchen, cabins, toilets and recreational areas are considered as part of the fishing capacity

- Need for alternative measurement formulas -

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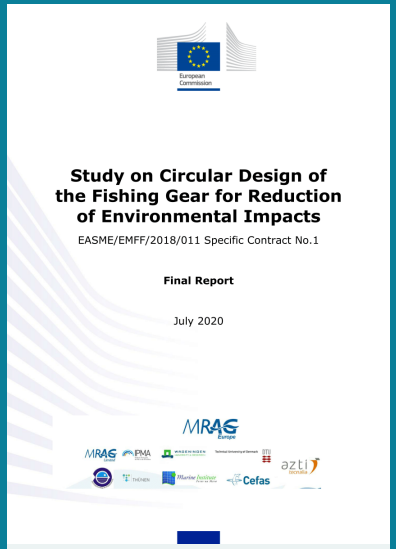
Circular Economy



CEN/TC 466 Circularity and Recyclability of Fishing Gear and Aquaculture Equipment

Port of Scheveningen, Netherlands. Foto: KIMO

– Raises awareness

According to Michael Mannaart, who is the international Liaison Officer at KIMO International, and has been involved in the scheme of the Netherlands since 2014, Fishing for Litter has removed more than 5000 tonnes of marine litter from our oceans the past years.

Who will collect the litter from the bottom of the ocean if bottom fishing is banned?

Upcycling the Oceans has recovered more than 1,000 tonnes of trash from the bottom of the ocean since its origins in 2015.

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Energy Transition

Way Forward (in the EU)

- Adequate funding – EU fleet renewal plan
- Science, biofuels, innovation and port infrastructures
- Revise definition of fishing capacity
- No taxation of fuel
- Energy Transition Partnership

Energy Transition

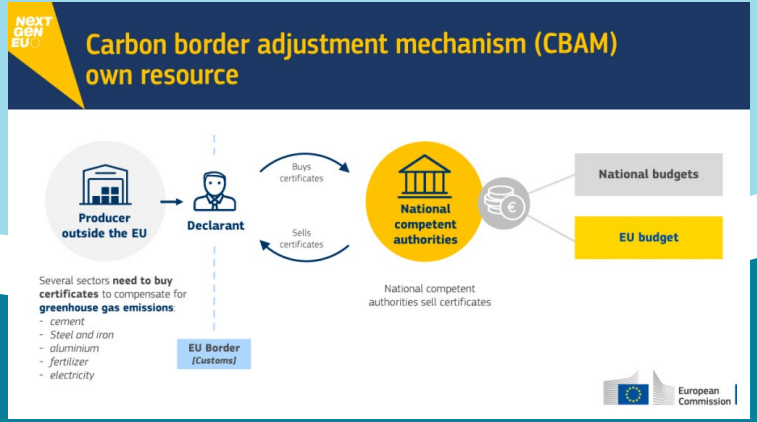
Way Forward (developing countries)

- Sustainable fisheries, governance and maritime spatial planning
- International Collaboration - technology & know-how share & partnership
- Economic incentives
- Capacity building and education
- Training and upskilling workforce

Energy Transition

Global pathways to climate neutrality

- International Agreements and Cooperation (WTO fisheries subsidies, FAO, UNFCCC,…)
- Emission Reduction Targets (e.g., EU Green Deal: -55% emissions by 2030)
- Carbon Border Adjustment Mechanism



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THANKS!

Do you have any questions?

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Committed to responsible fishing, nature, science and seafood supply now and for future generations