



Kyst- og havnekonferansen

Ulf Johansen, SINTEF Ocean
Bærekraftig forvaltning av
havrommet, 28. september 2022







Photo: SFI Blues



Photo: SINTEF Ocean



Photo: SINTEF Ocean

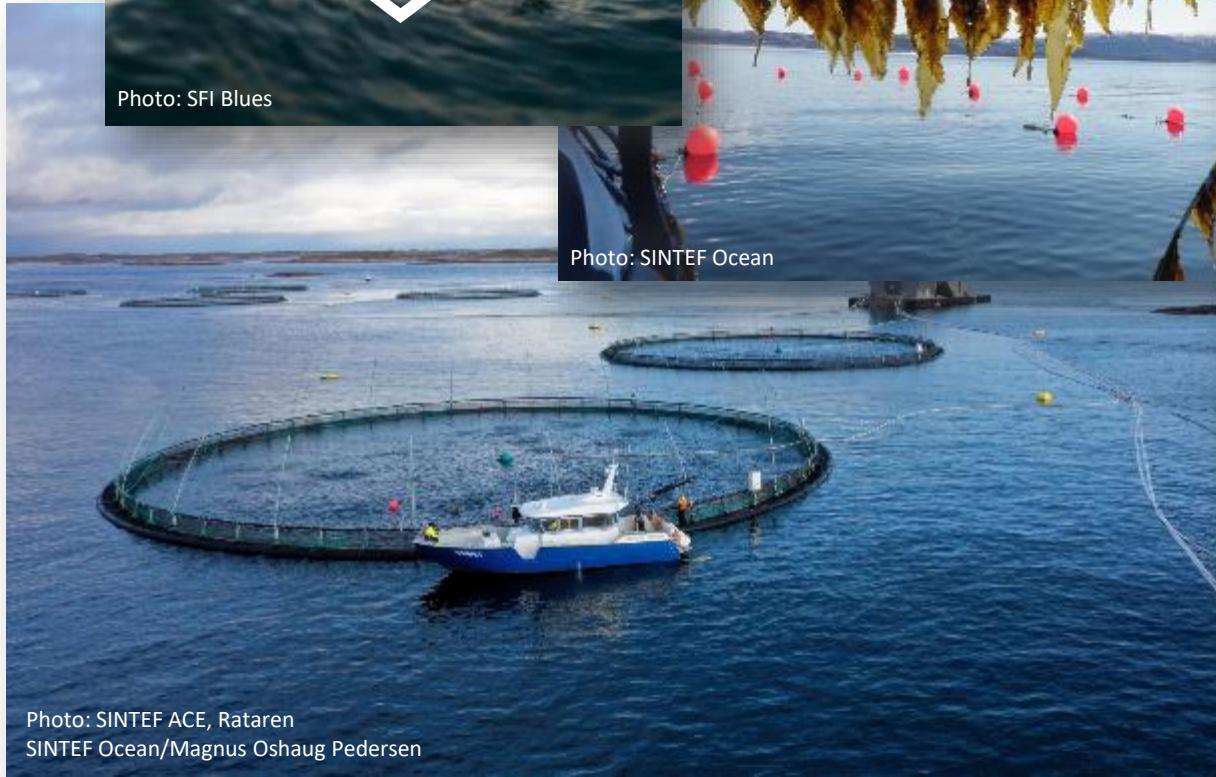
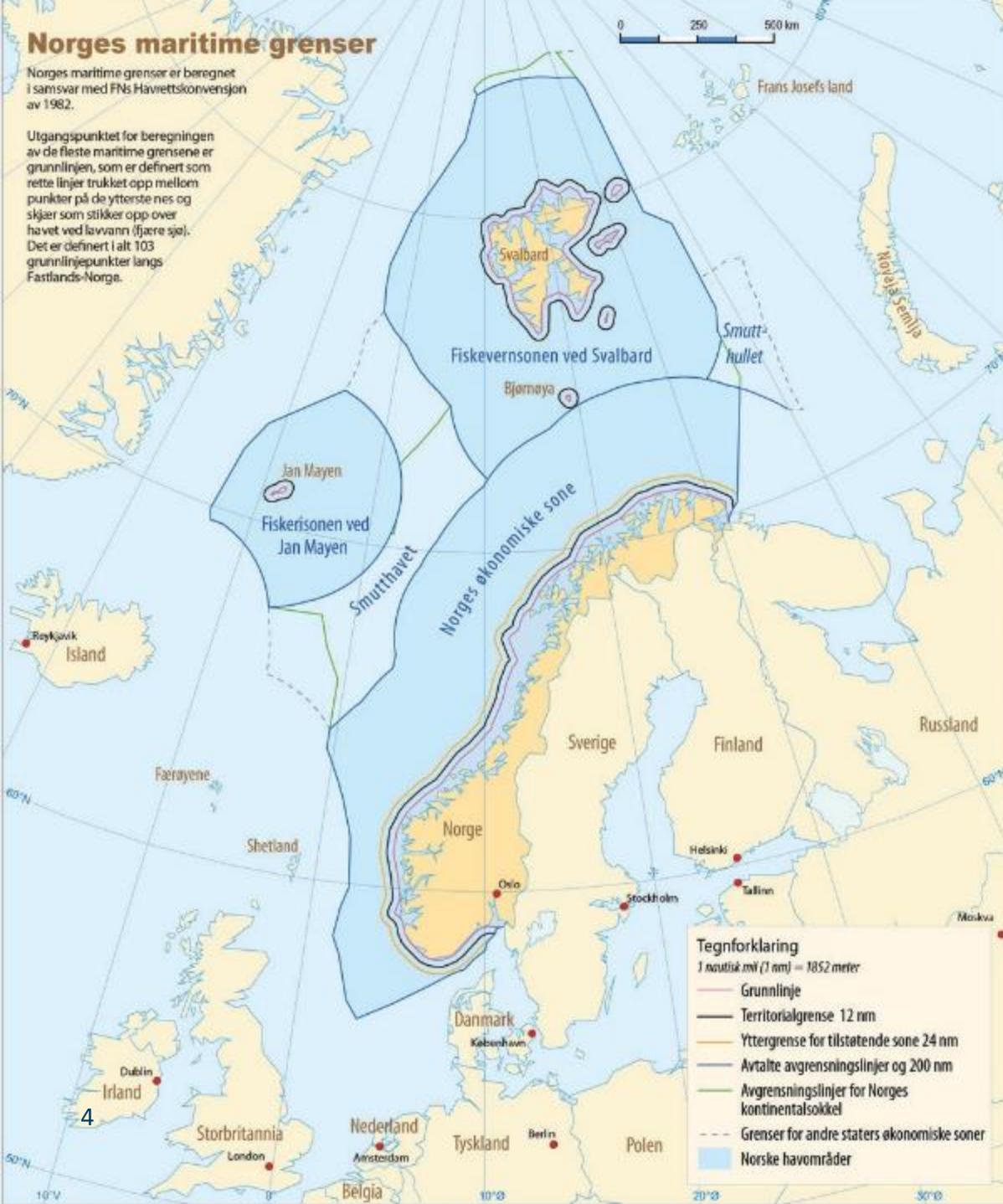


Photo: SINTEF ACE, Rataren
SINTEF Ocean/Magnus Oshaug Pedersen



Illustration of floating bridge over Bjørnafjorden
Credit: <https://www.vegvesen.no/vegprosjekter/europaveg/e39stordos/fjordkryssing-bjornafjorden/>

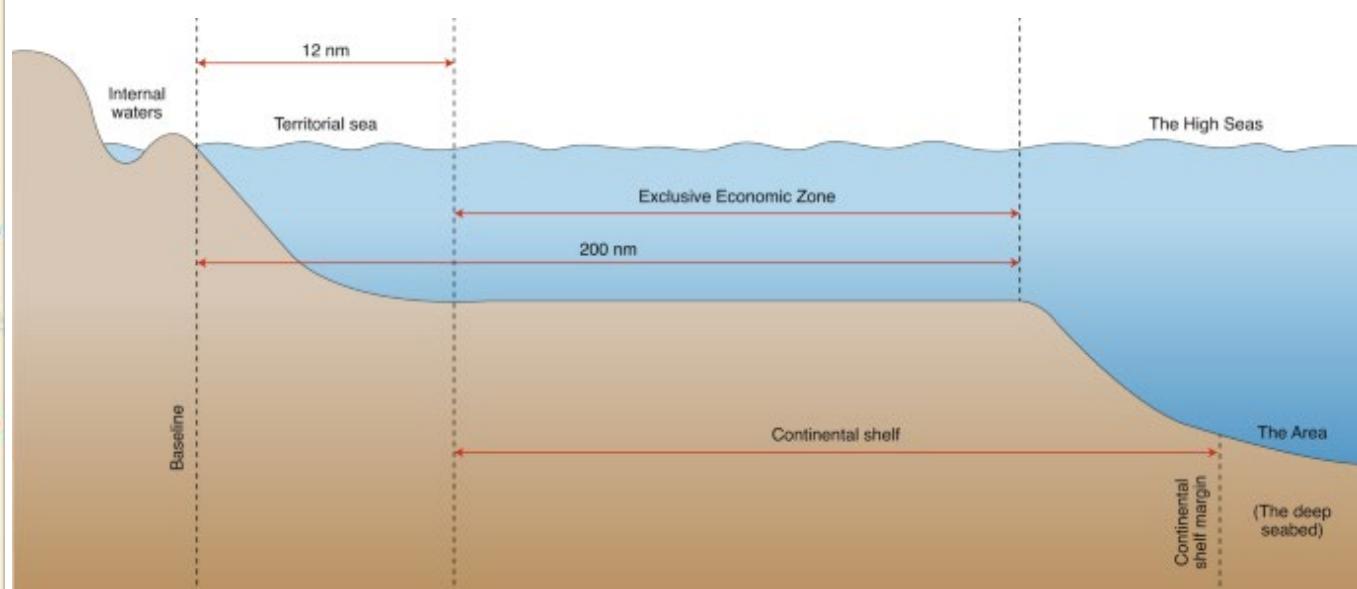


Bærekraftig Forvaltning

Kommune

Nasjon

UN / Globalt



Figure, above: Norwegian Polar Institute

Figure, left: Kartverket

The Science We Need for the Ocean We Want

Ref: "The Science we Need for the Ocean We Want: The United Nations Decade of Ocean Science for Sustainable Development (2021-2030). Paris. 2019. 24 pp. (English) IOC Brochure 2018-7 (IOC/BRO/2018/7 Rev). Image: © Shutterstock.com



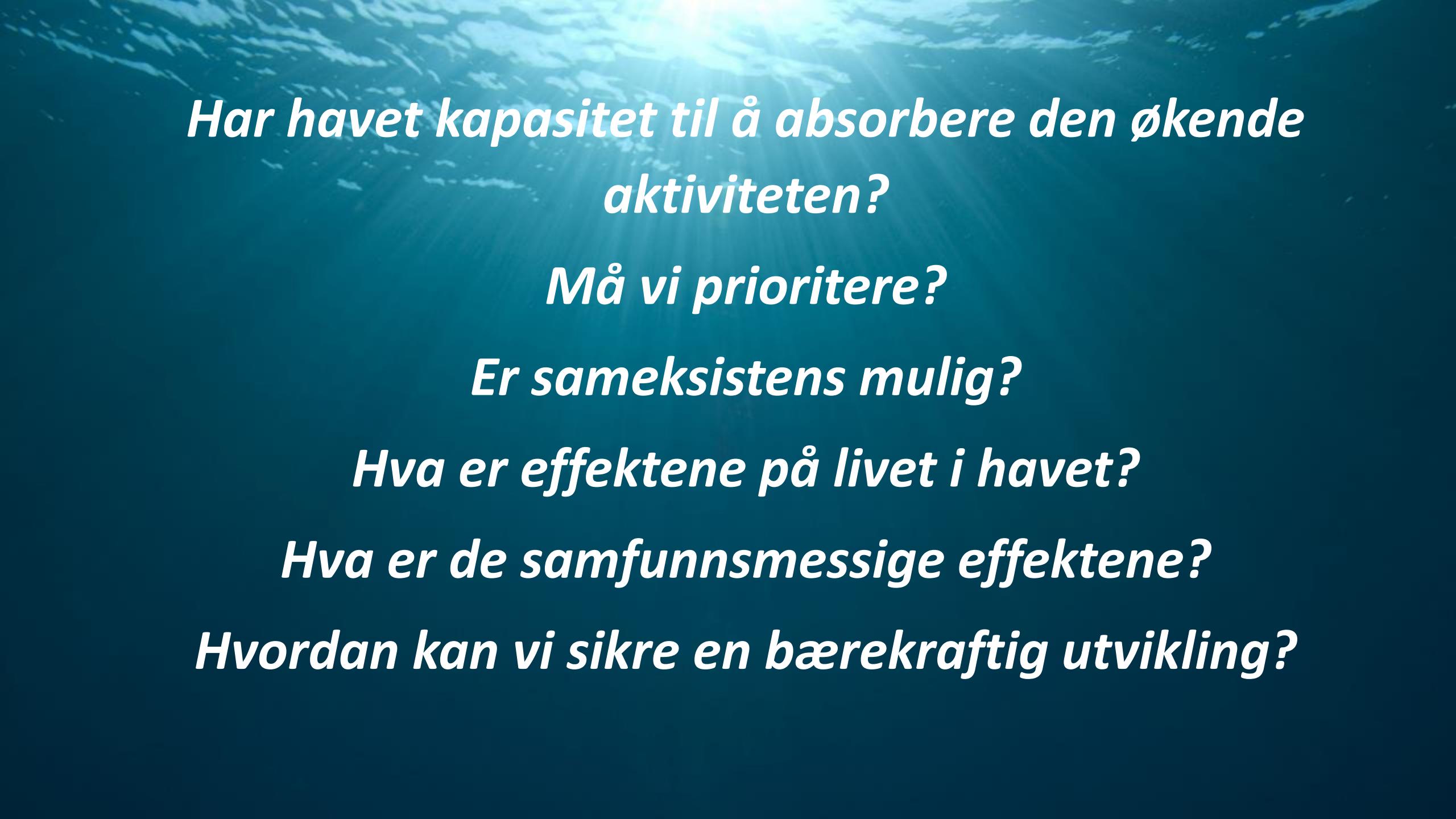


Christa von Hillerbrand-Andrade

Urban, USA, School Teacher for our
Open Standard Writing Program



What is KnowledgeNet?
Watch more interviews with Christa



Har havet kapasitet til å absorbere den økende aktiviteten?

Må vi prioritere?

Er sameksistens mulig?

Hva er effektene på livet i havet?

Hva er de samfunnsmessige effektene?

Hvordan kan vi sikre en bærekraftig utvikling?

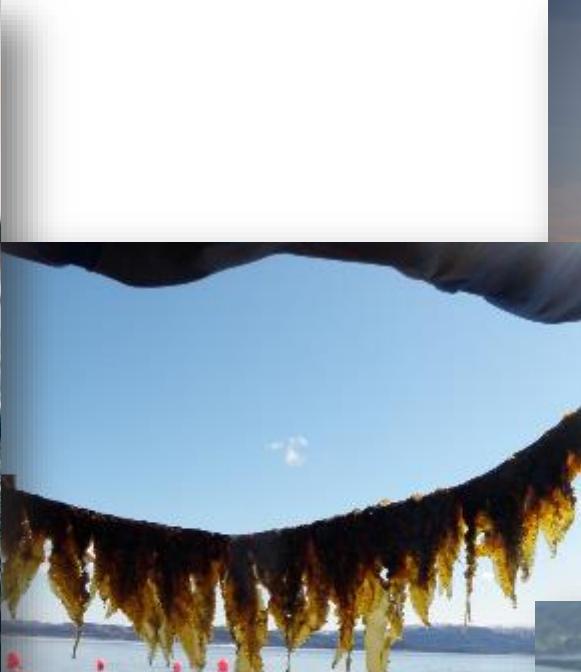


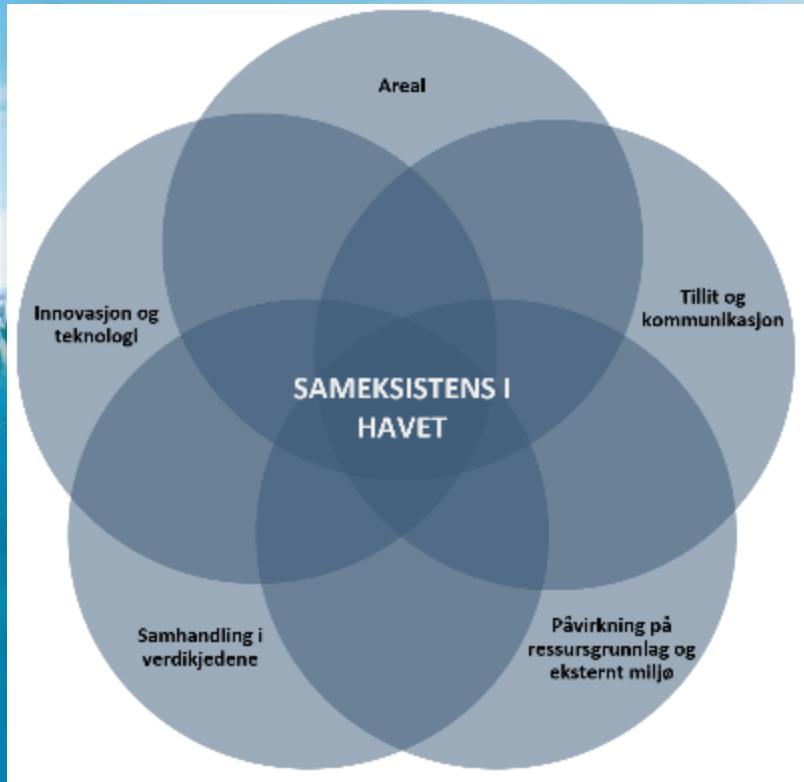
Illustration of floating bridge over Bjørnafjorden
Credit: <https://www.vegvesen.no/vegprosjekter/europaveg/e39stordos/fjordkryssing-bjornafjorden/>

*Havet vi trenger krever
integrert, koordinert og
bærekraftig planlegging
og utvikling*

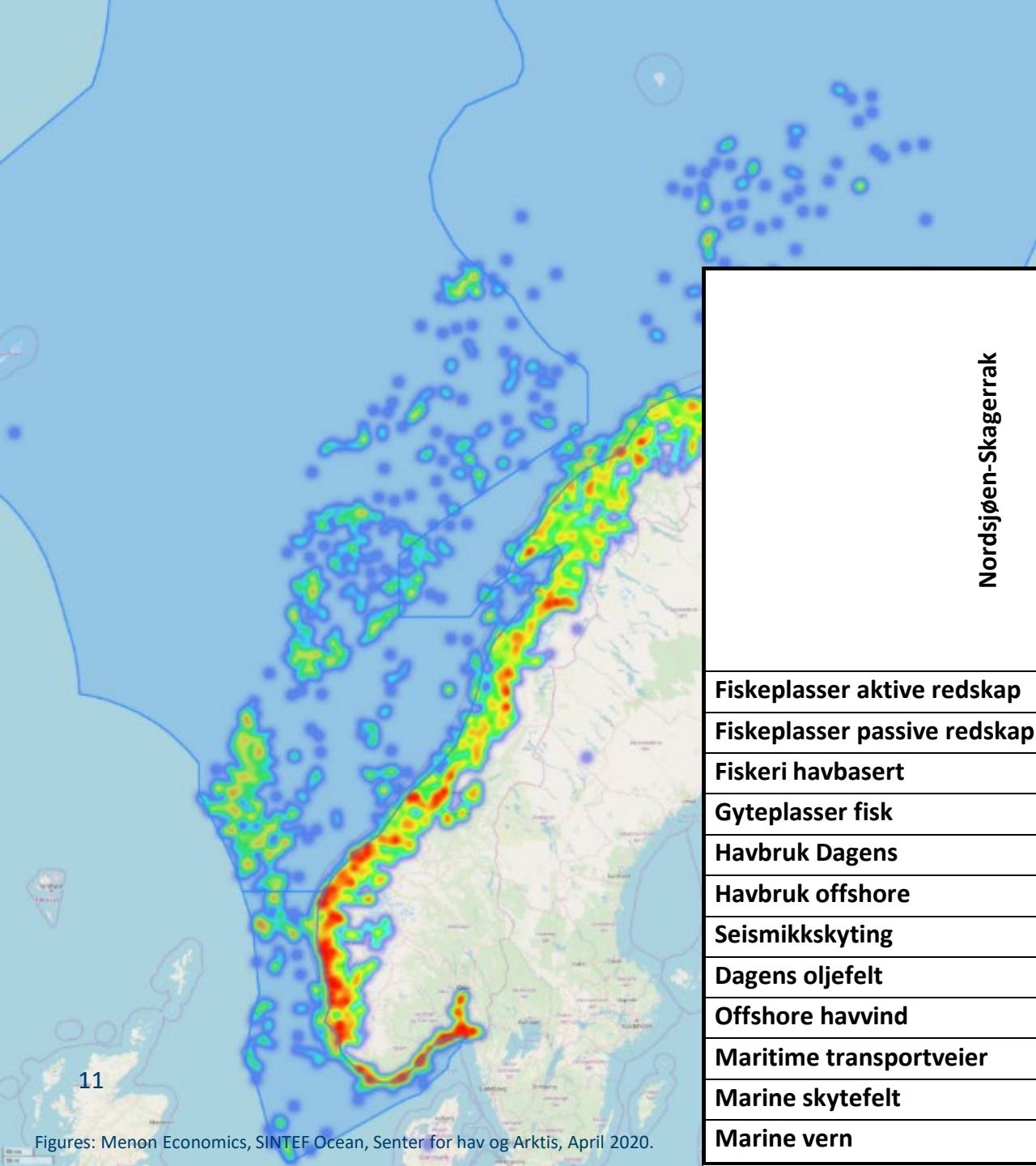


Illustration: UNESCO

Sameksistens og bærekraft i det blå



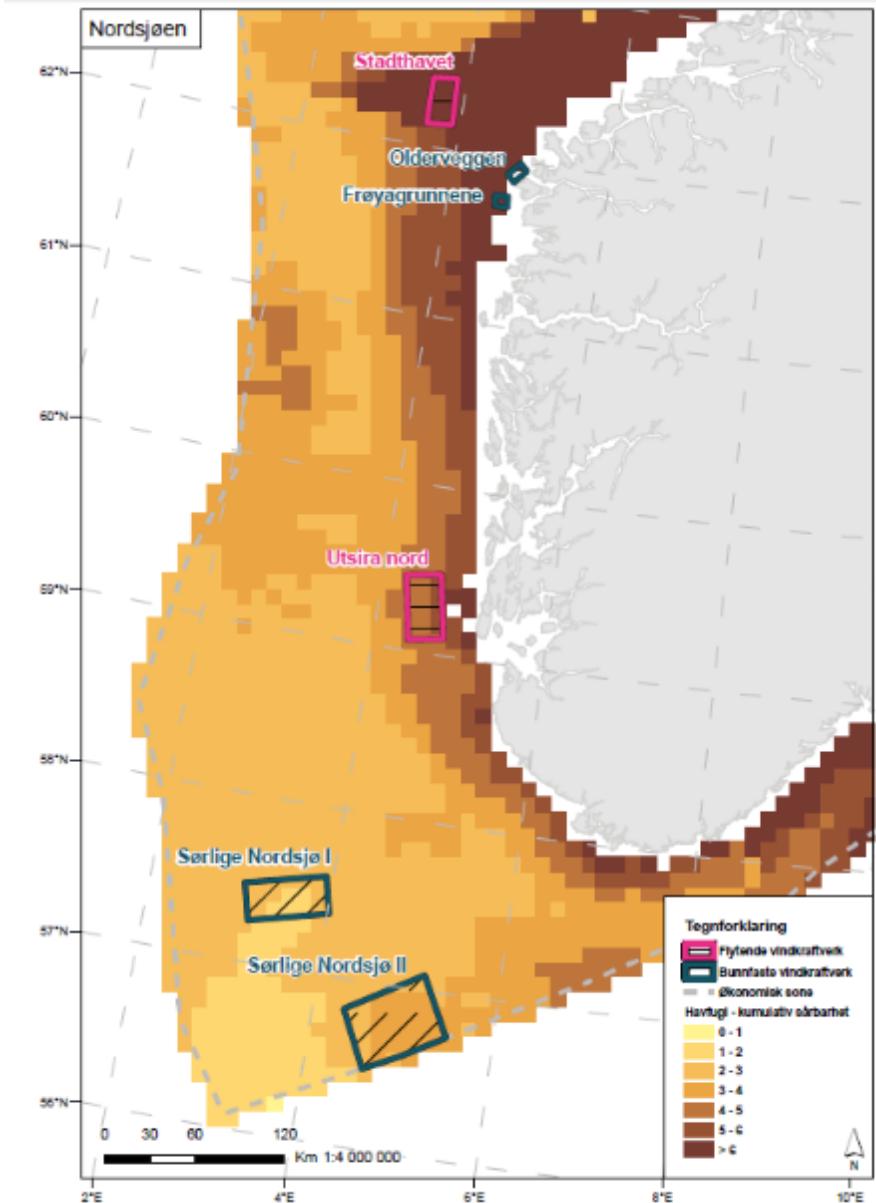
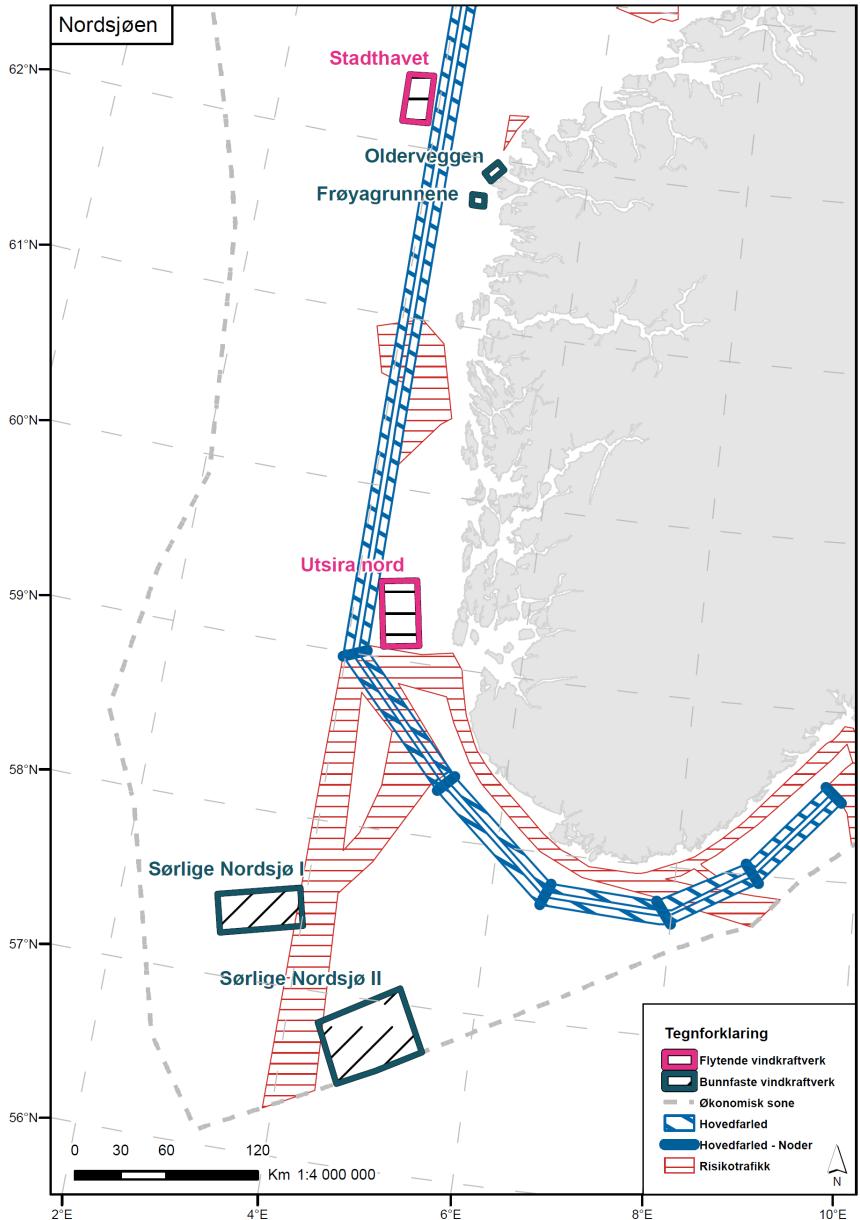
Sameksistens og bærekraft i det blå



Nordsjøen-Skagerrak	Fiskeplasser aktive redskap	Fiskeplasser passive redskap	Fiskeri havbasert	Gyteplasser fisk	Havbruk dagens	Havbruk offshore	Seismikkskyting	Dagens oljefelt	Offshore havvind	Maritime transportveier	Marine skytefelt	Marine vern
Fiskeplasser aktive redskap	-	28.7	73.5	49.1	0.0	2.4	67.7	0.0	1.9	8.0	42.0	2.3
Fiskeplasser passive redskap	67.6	-	52.4	50.2	0.0	0.0	53.2	0.0	4.8	24.3	44.3	7.1
Fiskeri havbasert	2.7	0.8	-	1.4	0.0	0.0	90.3	2.1	3.4	0.1	10.3	0.3
Gyteplasser fisk	90.7	39.3	69.1	-	0.0	3.4	81.7	0.0	2.1	8.6	24.1	3.0
Havbruk Dagens	0.0	100.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	100.0	0.0
Havbruk offshore	4.5	0.0	2.1	3.6	0.0	-	100.0	0.0	39.8	0.0	12.2	0.0
Seismikkskyting	2.3	0.8	82.2	1.5	0.0	1.8	-	2.4	4.0	0.4	9.0	0.0
Dagens oljefelt	0.0	0.0	79.9	0.0	0.0	0.0	100.0	-	0.0	0.0	1.6	0.0
Offshore havvind	1.6	1.7	78.3	1.0	0.0	17.4	100.0	0.0	-	0.7	5.3	0.0
Maritime transportveier	40.4	52.1	8.9	23.6	0.0	0.0	64.7	0.0	4.0	-	39.3	3.1
Marine skytefelt	8.2	3.7	55.0	2.5	0.0	1.2	52.4	0.2	1.2	1.5	-	2.0
Marine vern	10.0	13.4	36.8	7.1	0.0	0.0	0.0	0.0	0.0	2.7	44.8	-

Sameksistens på Naturens premisser

12



Figures: Regjeringen, Havvind: Forslag til utredningsområder.
https://www.regjeringen.no/globalassets/upload/oed/rapporter/havvind_ver02.pdf

Sameksistens på Naturens premisser: pågående samarbeid @SINTEF

FME NorthWind

- Havvindspåvirkning på fugldiversitet
- Samfunn og konflikt



FHF prosjekt: Kunnskapsinnehenting for
Sameksistens mellom fiskeri - og
havvindsnæring

Kartlegge eksisterende kunnskap og
erfaringer om effekter og konsekvenser av
havvind for norsk sjømatnæring



SINTEF & NTNU OceanLab og FjordLab

- Avansert marine observasjons platformer som kan bli brukt for å hente inn miljøkunnskap



OceanLab: Marine Observatory



FjordLab
2023-2026



Glider 1



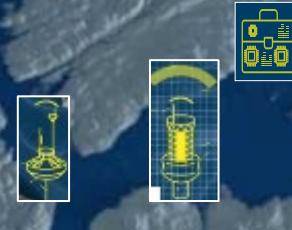
Glider 2



Buoy



OceanLab Phase 1
2020-2024



Trondheim



Ålesund

Trondheim's floating lab



Technology innovation
platform



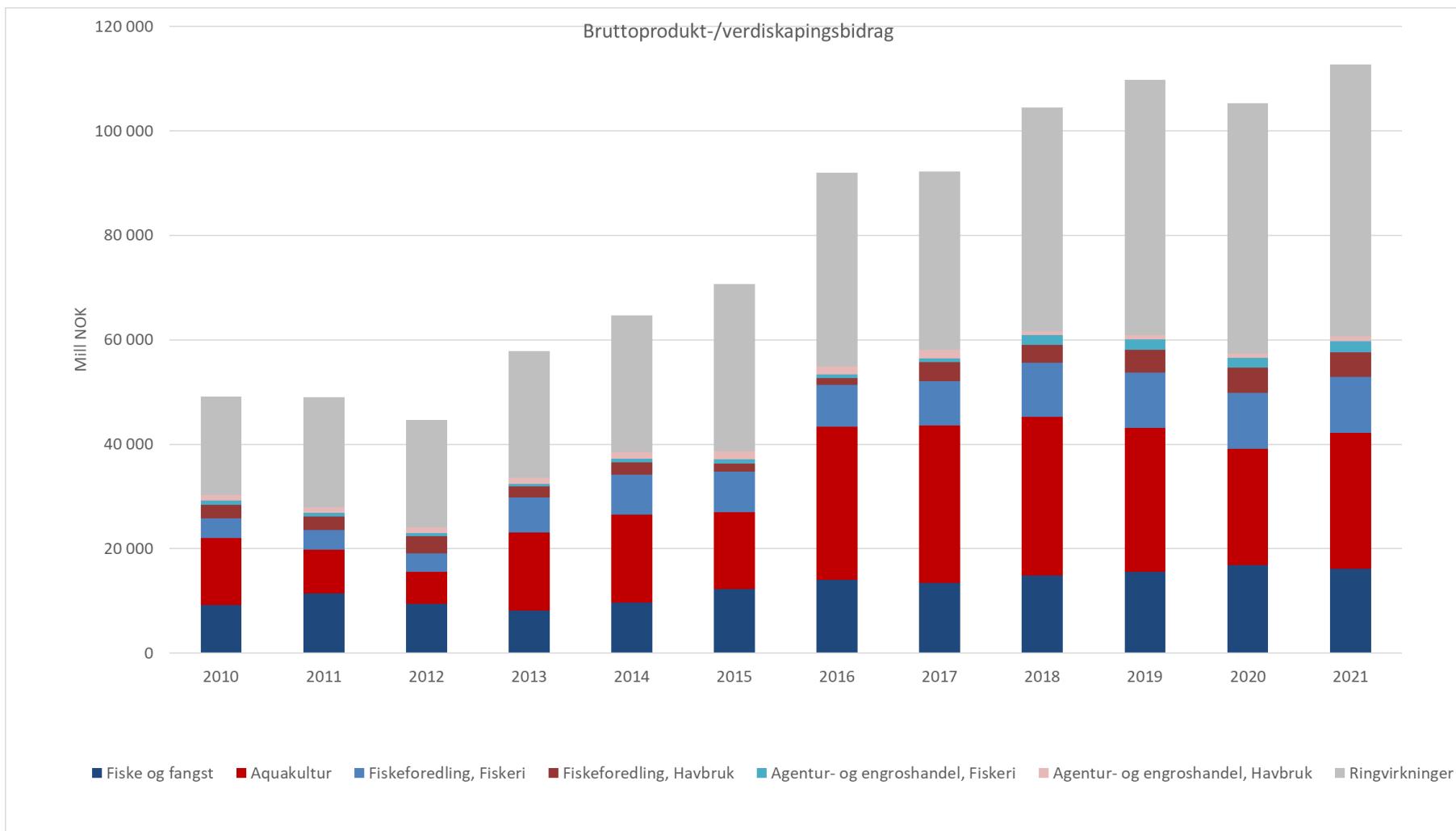
Data for fundamental
research & model
development





**#17: Revitalize the
global partnership for
sustainable
development**

Økonomisk forvaltning av havressursene

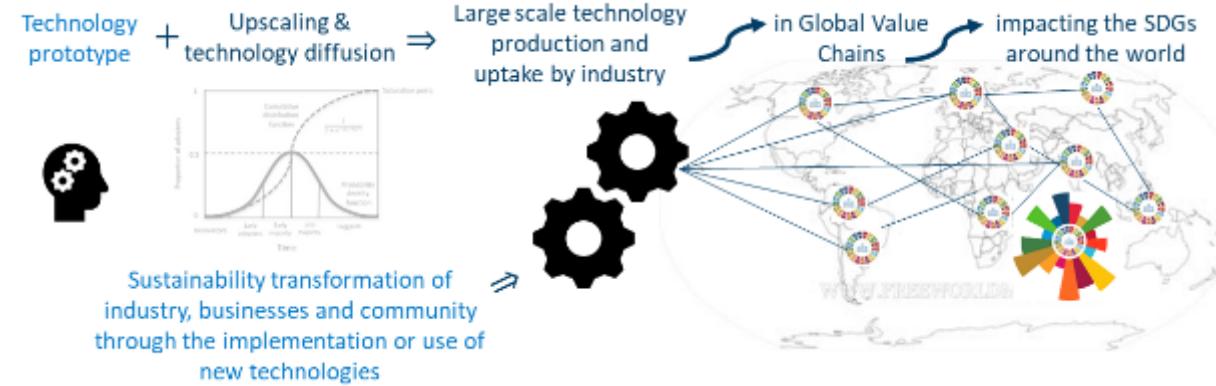


Direct and indirect impacts on sustainability

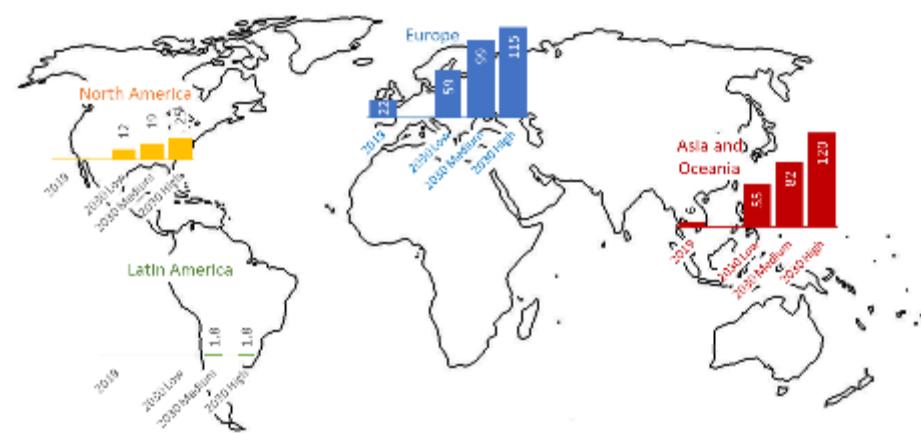
- People
- Planet
- Prosperity



Effekter gjennom globale verdikjeder



Offshore wind installation



Investeringer og SDG-effekter

13.2.2. Manufacture and building of infrastructure leads to increased combustion of fossil fuels



12.2.2 Mining industry and material consumption increase for building offshore wind farms, especially in regions where raw material comes from



9.2.1 Manufacturing employment and value added grows in places where equipment is being produced. CO₂ emissions per value added increase due to use of energy-intensive materials



14.3.1 Higher emissions lead to ocean acidification



14.3.1 base: CO₂ emissions & average marine acidity



1.1.1 base compensation of unskilled females & poverty

1.1.1 base compensation of unskilled males & poverty

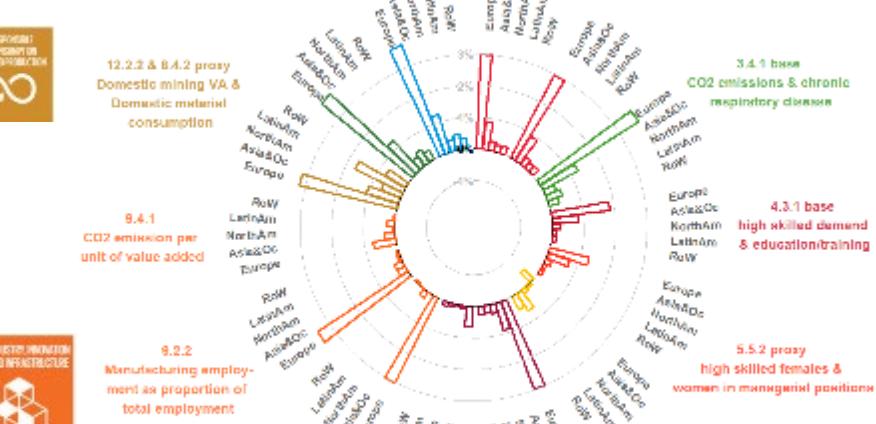
1.1.1 Job opportunities for low-skilled workers, both male and female



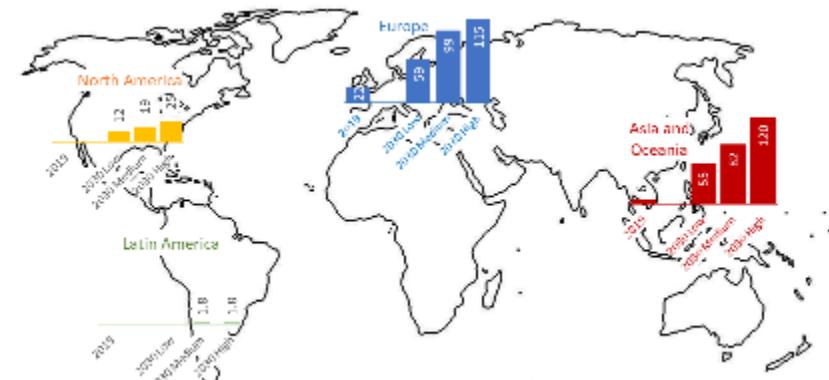
5.5.2 proxy high skilled females & women in managerial positions



7.3.1 Changes in the share of energy mining in value added



8.1.1 Investments lead to positive economic growth



3.4.1. Manufacture and building of infrastructure leads to increased combustion of fossil fuels, especially in Europe and Asia. Assumes current energy mix.

4.3.1 Increased demand for high-skilled workers

5.5.2 Increased demand for high-skilled women, especially in Asia.

Mulige løsninger på bærekraftige forvaltning av havrommet



1. Åpen og dynamisk datadeling: et hav av kunnskap
2. Nasjonal kystsoneplan: koordinert forvaltning av våre havområder
3. Marine næringsparker: nye muligheter for samhandling til havs
4. Prinsipper for bærekraftige havnæringer: et felles rammeverk for rene og rike hav



Sameksistens og
bærekraft i det blå

Rapport 3: Løsninger



Thank you for your attention!



Technology for a better society