

# Sustainability is more than a number: Enabling co-existence and multi-use offshore

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## Sustainability = Business as unusual



### **Definitions**

Sustainability

Co-existence

Multi-use



### **SDG Wizard**

Bringing the SDGs into offshore wind



# 21st century economics

Flourishing triple-layer business models



### **Grand finale**

Sourcing universal values for offshore Business as unsual



## What is Sustainability?

a holistic concept that considers the interconnectedness of environmental, social, and economic systems



### What is Offshore Co-existence?

It involves mutual respect, tolerance, and acceptance of differences, allowing for the peaceful cohabitation of offshore sectors and actors within a shared space, community, or society

$$1+1 \le 2$$



### What is Offshore Multi-use?

the practice of combining various activities and functions within a specific offshore area. Instead of allocating separate areas for individual uses, such as fishing, shipping, energy production, or conservation, multi-use aims to optimize the utilization of marine spaces by allowing multiple activities to co-exist in a coordinated and sustainable manner.

$$1+1+1 \ge 3$$

### The 3 pillars of sustainability

Economic

Social

**Ecological** 

Institutional/Governance

# Related concepts, initiatives and agendas

#### **UN Sustainable Development Goals**

Circular Economy European Green Deal
EU Taxonomy Social Equity and Justice

Sustainable Finance Directive (Article 9&10)

Renewable Energy Transition/Directive

Corporate Social Responsibility Farm to Fork

EU Emission Trading System

Fair Trade EU Missions

Diversity, Equity and Inclusion (DEI)

Biodiversity Strategy 2030 Triple Bottom Line







### Our grand normative framework:

# The United Nations Sustainable Development Goals (2016–2030)





































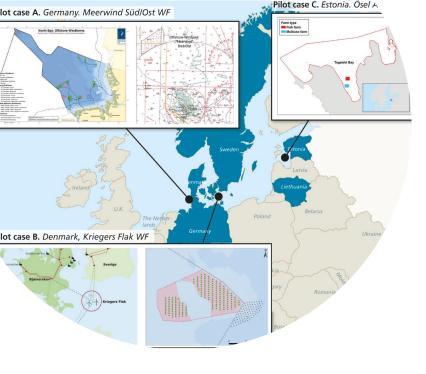


Demonstrating Open Ocean Multi-Use in the North Sea and Baltic Sea regions – OLAMUR (Offshore Low-Trophic Aquaculture in Multi-Use Scenario Realisation)





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# Large EU project on kelp and mussel farming within offshore wind farms

olamur@hi.no https://olamur.e



**SCAN HERE** 

#### **Ambition**

OLAMUR will address and solve key bottlenecks hampering the development of commercially viable and sustainable offshore low-trophic aquaculture (LTA) in wind farms or fish farms and thereby enhancing a sustainable LTA production in the EU.

OLAMUR brings together 25 partners from 8 different countries across Europe (Germany, Norway, Denmark, Estonia, Italy, Lithuania, Belgium and Sweden). The consortium consists of 9 SMEs, 5 Universities, 5 Research and Technology Institutes, 3 Non-Government Organisations and 3 industry partners, encompassing a wide range of skills, including environmental science and policy, meteo, robotics, wind technology and aquaculture farms.



Photos: Vattenfall IMR (Erling Svensen) WindMW, BSH



# Multi-use Demonstration site

Danish Kriegers Flak Offshore Wind Park

- Largest windfarm in Scandinavia
- 604 Mw (powers 600.000 households)
- 72 turbines
- Turbine height: 188 m
- In function since 2021
- Owned and run by Vattenfall

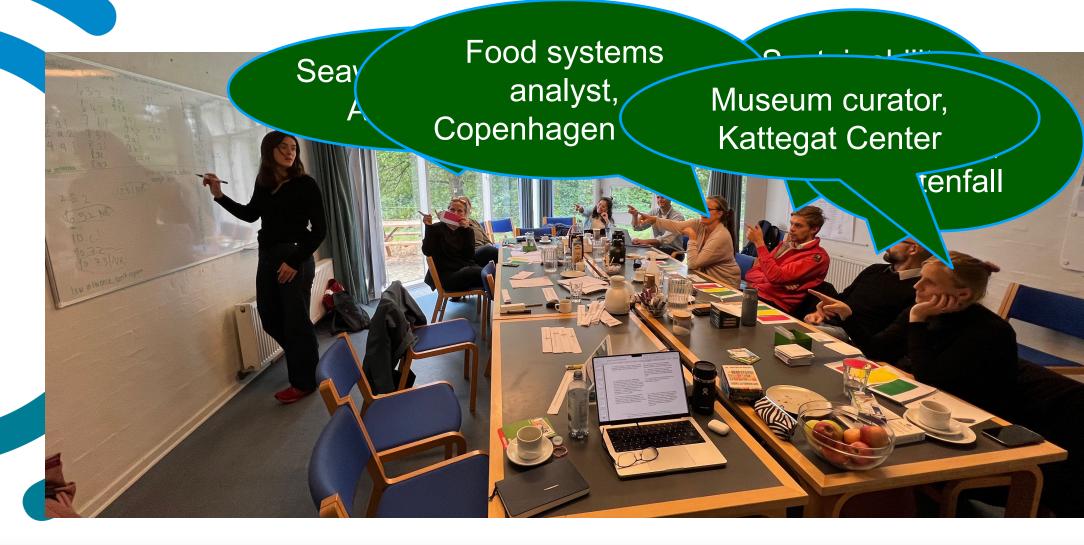






Marie Maar, et al 2023

OLAMUR Task 7.1: SDG Target Relevance-Tracing: Kriegers Flak Multi-Use Demo October 2023, Roskilde, Denmark



# SUSTAINABLE DEVELOPMENT GOALS

# 169 TARGETS 247 INDICATORS

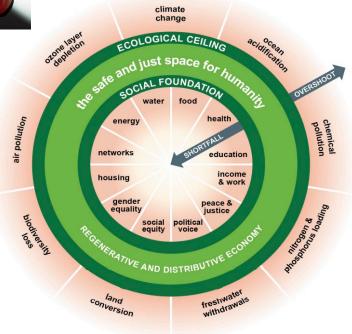




# A Doughnut for the Anthropocene: humanity's compass in the 21st century Kate Raworth

Environmental Change Institute, Oxford University, Oxford





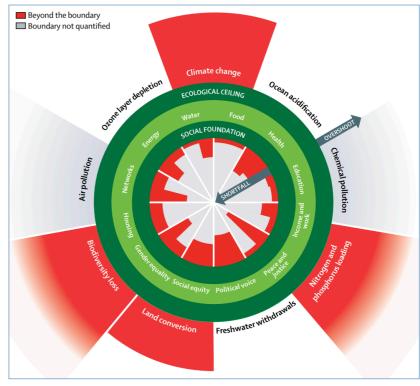


Figure: Shortfalls and overshoot in the Doughnut

Dark green circles show the social foundation and ecological ceiling, encompassing a safe and just space for humanity. Red wedges show shortfalls in the social foundation or overshoot of the ecological ceiling. The extent of pressure on planetary boundaries that are not currently being overshot is not shown here (see appendix for all graphics).





# What is Triple layer business model?

"A business model describes the rationale of how an organization creates, delivers and captures value."

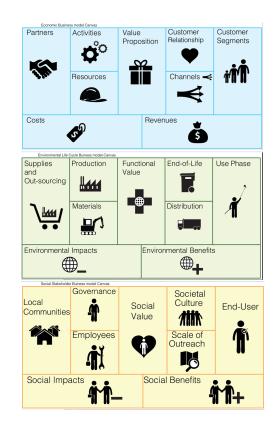
Osterwalder and Pigneur, 2010

"A sustainable business model as the rationale of how an organization creates, delivers and captures economic, environmental and social forms of value simultaneously."

Environmental value forms Renewable resource. low emissions, low waste, biodiversity, pollution prevention (air, water, land) Sustainable Social Economic Value value forms value forms Equality and diversity, Profit return on well-being, community investments, financial development, secure resilience, long-term livelihood, labour viability, business standards, health and safety

Joyse et al. 2015









#### Environment

This business is part of the economy, which is created by our society, which in turn is ultimately, utterly and immediately dependent on the environment. These are the vital context for any business – all risks and all opportunities – including yours.

his business is also part of a value constellation of other businesses, organizations, communities, individuals, animals, plants and the environmer

When answering the questions posed by the canvas for your business consider how your answers need to reflect these vital contexts and the other

#### Society

#### **Economy**

#### BIOPHYSICAL STOCKS

Ecosystem services are processes powered by the sun that use Biophysical Stocks to create flows of benefits humans need: clean water, fresh air, vibrant soil, plant and animal growth etc.

Which flows of these benefits are required by, harmed or improved by this business's critical Activities?

Example: See World Business Council for Sustainable Development (WBCSD)'s Corporate Ecosystem Service Review v2.0.



#### ECOSYSTEM

SERVICE
What ultimate stocks provide the tangible ke
Resources that are moved, flow, and / or
transformed by this business's critical

According to achieve its Goals?

Guidance: As per laws of conservation of matter, all materials remain biophysical stocks somewhere on our single shared planet irrespective of this business's critical Activities (past, present and anticipated future)



### PROCESS How, where and with what does this business recoverants its value to arbition its doubt.

**PARTNERSHIPS** 

To which key Resources do these partnership agreements enable this business to gain preferred access? e.g. an agreement to supply raw materials

Which critical Activities do these partnership agreements ensure are undertaken for this business? e.g. an agreement to deliver the Product/Service

RESOURCES PA

What are the key tangible and intangible resources required in order to execute this business's critical



What Activities does this business perform to strive to achieve its Goals? What Activities enable each Value Co-Creation, Value Co-Destruction? What Activities create and deliver each

**ACTIVITIES** 



#### GOVERNANCE

Which Stakeholders get to make decisions about which Actors are legitimate Stakeholders, the Goals of this business, its value propositions and its Processes? What are the Governance arrangements for this business? i.e. which Stakeholders have the power to make decisions about what topics?



#### **VALUE**

What value is co-created and co-destroyed now and / or in the

#### **VALUE CO-CREATIONS**

What are the (positive) value propositions of this business?
What value is co-created with each Stakeholder, satisfying the Needs of the associated Actor, from their perspective (world-wiew), now and 1 or in the future?
Which value co-creations are associated with which Products/Services?



#### **VALUE CO-DESTRUCTIONS**

What are the (negative) value propositions of this business?
What value is co-destroyed for each Stakeholder, hindering the satisfaction of the Needs of the associated Actor, from their perspective (world-view), now and for in the future?



#### PRODUCTS / SERVICES

What does this business offer and provide to its customer or client or user Stakeholders that co-creates value with the associated Actors to better meet their Needs? Which offers do customer or client or user Stakeholders pay the business for,



#### **PEOPLE**

Who are all the people involved in this busines

#### RELATIONSHIPS

What type of Relationships with each Stakeholder must be established, cultivated and maintained by this business via its Channels in order for value to be co-created (or co-destroyed)? Examples: Become aware, build trust/ interest, decision making, co-create value,



#### CHANNELS

What Channels will be used by this firm to communicate, interact, and to develop the required types of Relationship with each Stakeholder (and vice versal?

Examples: Retail, Face-to-Face, Internet, Phone, Mail, Transport



**STAKEHOLDERS** 

How is each Actor involved in this business? What Stakeholder roles does each Actor take?

Examples: customer, employee, investor, supÅ plier, community, regulator, financier

#### **ACTORS**

Who and what may have an interest in the fact that this business exists?

From which groups or pools of Actors do the people come from who play the role of Stakeholders in this business?

Which individuals, groups or organizations does this business aim to reach and Co-Create value with to better meet those Actor's Needs?

Examples: Humans, NGOs, Government, Media, other life and nature (usually represented by an NGO) etc.



#### **NEEDS**

What fundamental Needs of the Actors is this business intending to satisfy or may hinder?

Guidance: For inspiration on possible Needs review Maslow's Hierarchy of Needs or Max-Neef's Fundamental Human Needs (preferred).



#### COSTS

How does this business choose to measure the Costs incurred by its business model (Environmentally, Socially, Economically)?



#### **GOALS**

What is this business's definition of success environmentally, socially and economically What are the Goals that the Stakeholders have agreed align with the why/purpose/vision they have chosen for this business (measured in appropriate units)?



#### BENEFITS

Benefits that result from its business model (Environmentally, Socially, Economically)?



#### **O**UTCOMES

What outcomes demonstrate whether this business has achieved its Goals, achieving its Stakeholder's definition of success over time? How does this business measure the benefits and costs to determine whether or not these outcomes are achieved.







# Steps towards flourishing triple-layer business models...

Who do we need on our Team?





### NORWEGIAN SEAFOOD COUNCIL

Norwegian fisheries record export year in 2023



#### Sjømatnæringen kort fortalt

Vekst i verdiskaping på **110 prosent** siden 2011



= 105 900 ansatte









\*= inkluderer ringvirkninger



## Fishermen are not against offshore wind

# Fishermen want renewable energy, and they want to fish

Does 30GW of offshore wind power =  $7,500 \text{ km}^2$  or  $30,000 \text{ km}^2$ ?

Aversion to loss is a primitive survival mechanism

— we run away from the tiger faster than we run toward food.

https://www.nytimes.com/2024/01/18/opinion/inflation-rate-election-voters.html

## **DREIEBOK**



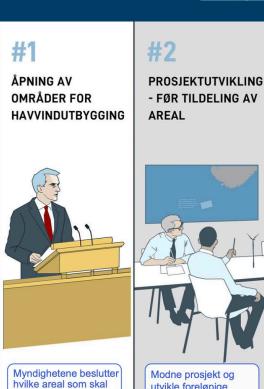
### **FORMÅL**

• Formålet med dreieboka er å peke på hvordan en kan oppnå best mulig sameksistens mellom fiskeri og havvind i utviklingen av havvindprosjekter, innenfor områder myndighetene allerede har åpnet for slik utbygging.



fiskebåt

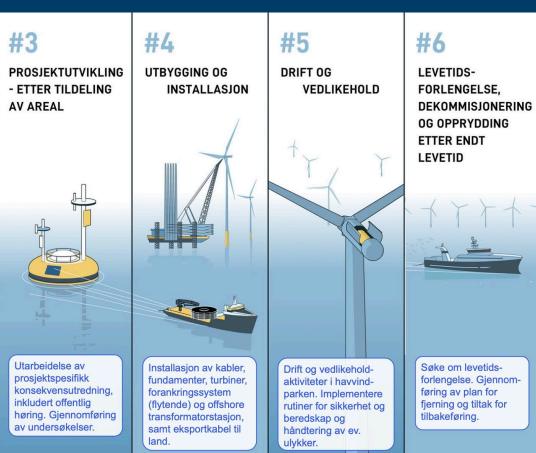




åpnes for

havvindproduksjon.







**Equality** 

Honesty

**Justice** 

**Integrity** 

**Compassion** 

**Freedom** 

Wisdom

Respect

# Universal values

**Tolerance** 

Responsibility

**Environmental Stewardship** 

Peace

Courage

**Solidarity** 

Gratitude



**Grit/Standhaftighet** 

**Passion** 

# Courage

# Universal values

**Sharing/Communalism** 

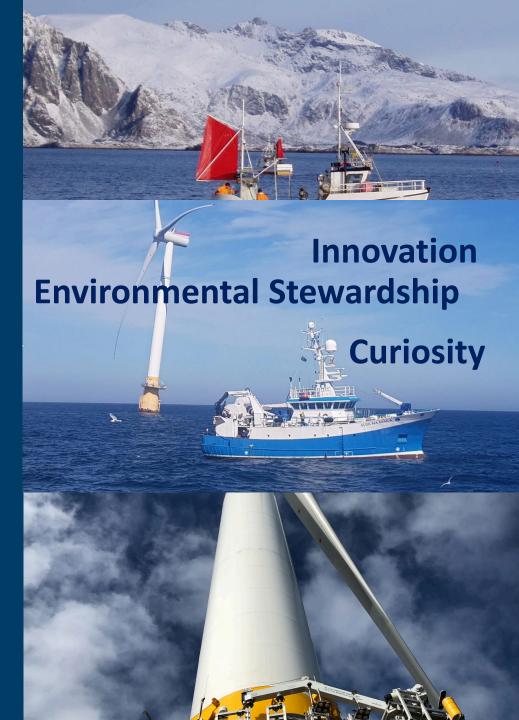
**Tolerance** 

Responsibility

Solidarity

**Enthusiasm** 

Gratitude





# Technology for a better society

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