



Ministry of Infrastructure  
and Water Management

# Natural capital accounting

Policy applications for the  
North Sea and North East  
Atlantic Ocean

Wesley van Veggel, 14-12-2022



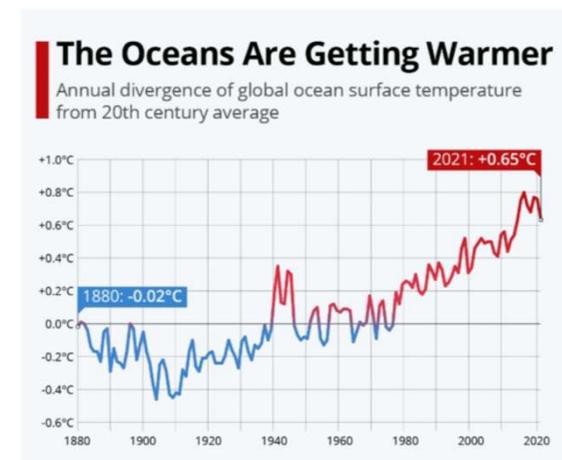
# Importance of marine ecosystems

State of marine environment has been deteriorating over the past decades, also the case for the North Sea and North-East Atlantic

Human pressures: pollution, overfishing and climate change

Marine ecosystems benefit human well-being through the services provide

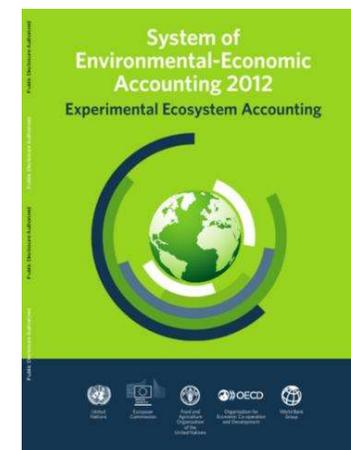
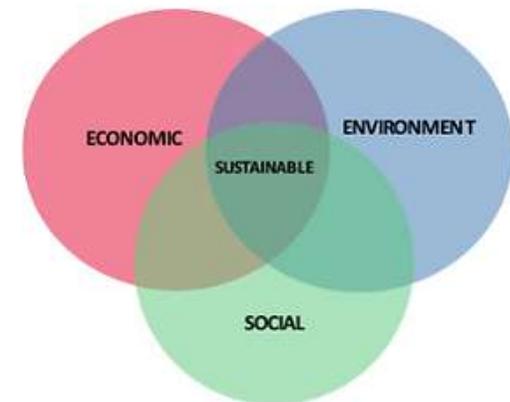
But value often underestimated/ignored in national accounts..





# The need for an integrated statistical economic-environmental framework

- Countries are currently facing issues that provide social, economic and environmental challenges
- Problems and stakeholders are often interconnected over multiple levels of scale
- The complex integrated policy context requires integrated statistics and data!
- Natural capital accounting (NCA), System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA-EA)





# Interest in Natural capital accounting (NCA)

- > SEEA Ecosystem accounting accepted as international accounting standard during the 52<sup>nd</sup> session of the UN statistical division in March, 2021
- > 11<sup>th</sup> of July 2022 a proposal was made for mandatory provision of natural capital accounts by, EU member states
- > Interest of OSPAR (North East Atlantic) strategic objective of North-East Atlantic Environment Strategy<sup>1</sup>:

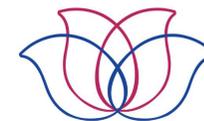
**S7.03** By 2025 OSPAR will start accounting for ecosystem services and natural capital by making maximum use of existing frameworks in order to recognise, assess and consistently account for human activities and their consequences in the implementation of ecosystem-based management.

Source: <https://www.ospar.org/documents?v=46337>



## Many international projects:

- **MAIA**: Mapping and Assessment for Integrated ecosystem Accounting, SEEA-EA being implemented in 11 (EU) countries
- **GOAP**: Global Ocean Accounts Partnership, Ocean accounting
- **MAREA** project : Marine Ecosystem Accounting project, Baltic sea area
- **NCAVES**: Natural Capital Accounting and Valuation of Ecosystem Services Project (NCAVES), EU funded



# Natural capital accounts for OSPAR

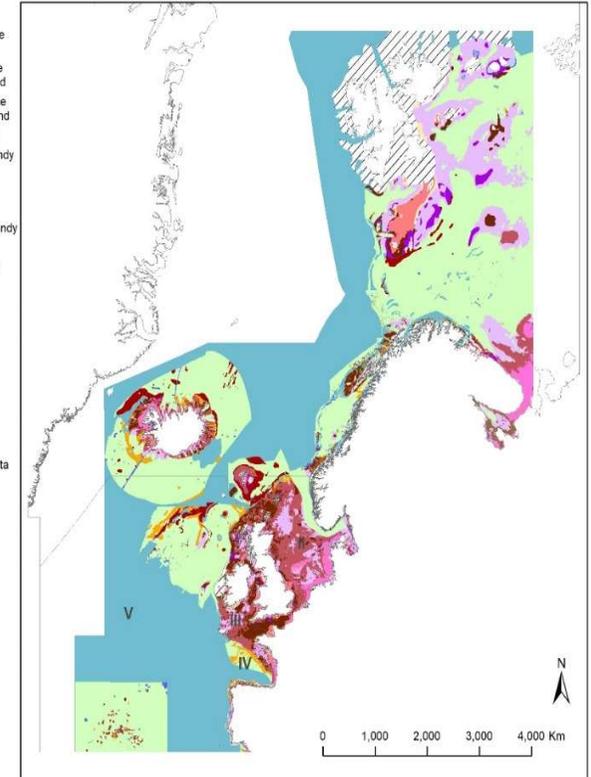


- Preliminary results and first estimates presented by Maria Blazquez
- Currently being updated by Martha Stofmeel
- (Draft for 2<sup>nd</sup> version for Dutch part of the North Sea in development)

## EUNIS Habitats

OSPAR Regions	A5.15: Deep circalittoral coarse sediment
A3.1: Atlantic and Mediterranean high energy infralittoral rock	A5.23 or A5.24: Infralittoral fine sand or Infralittoral muddy sand
A3.2: Atlantic and Mediterranean moderate energy infralittoral rock	A5.25 or A5.26: Circalittoral fine sand or Circalittoral muddy sand
A3.3: Atlantic and Mediterranean low energy infralittoral rock	A5.27: Deep circalittoral sand
A3: Infralittoral rock and other hard substrata	A5.33 or A5.34: Infralittoral sandy mud or Infralittoral fine mud
A4.12 or A4.27 or A4.33: Sponge communities on deep circalittoral rock or Faunal communities on deep moderate energy circalittoral rock or Faunal communities on deep low energy circalittoral rock	A5.33: Infralittoral sandy mud
A4.12: Sponge communities on deep circalittoral rock	A5.34: Infralittoral fine mud
A4.1: Atlantic and Mediterranean high energy circalittoral rock	A5.35 or A5.36: Circalittoral sandy mud or Circalittoral fine mud
A4.27: Faunal communities on deep moderate energy circalittoral rock	A5.35: Circalittoral sandy mud
A4.2: Atlantic and Mediterranean moderate energy circalittoral rock	A5.36: Circalittoral fine mud
A4.33: Faunal communities on deep low energy circalittoral rock	A5.37: Deep circalittoral mud
A4.3: Atlantic and Mediterranean low energy circalittoral rock	A5.43: Infralittoral mixed sediments
A4: Circalittoral rock and other hard substrata	A5.44: Circalittoral mixed sediments
A5.13: Infralittoral coarse sediment	A5.45: Deep circalittoral mixed sediments
A5.14: Circalittoral coarse sediment	A5: Sublittoral sediment
	A6.11: Deep-sea rock
	A6.2: Deep-sea mixed substrata
	A6.3: Deep-sea sand or
	A6.4: Deep-sea muddy sand
	A6.5: Deep-sea mud
	A6: Deep-sea bed
	Na

Date: 14/06/2021

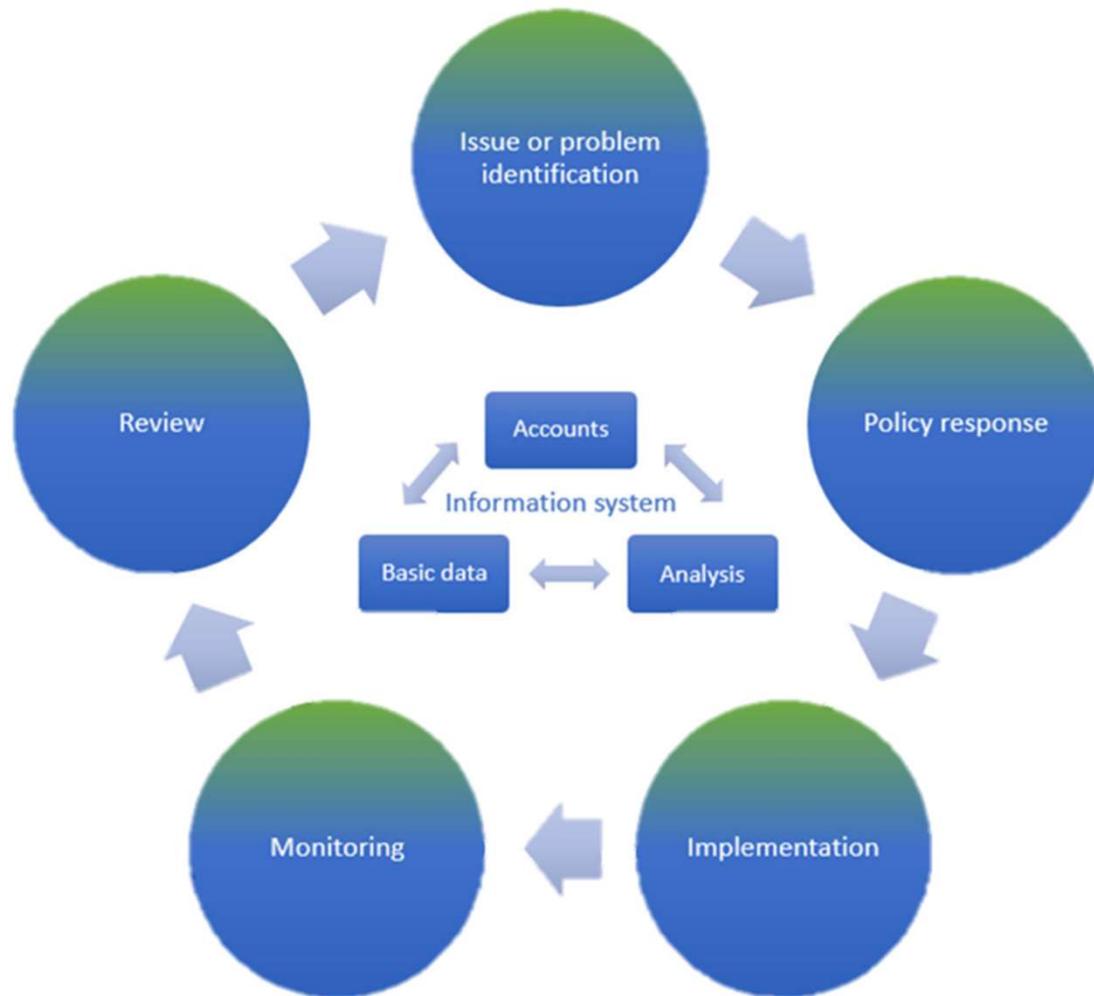




# Natural capital accounting & Policy

- Currently the accounts are mainly supply driven
- Information from the accounts can be complex for policy makers
- *How can we apply NCA for decision-making for the North Sea (and North East Atlantic)?*
- What kind of tools do policy makers need?

# NCA & the policy cycle



- Hard to directly couple evidence and direct policy decision
- Especially with relatively new and incomplete framework such as NCA
- Currently, mainly used for problem identification or monitoring
- What is needed to integrate it throughout the policy cycle?



## Outcome literature study policy uses for NCA ...

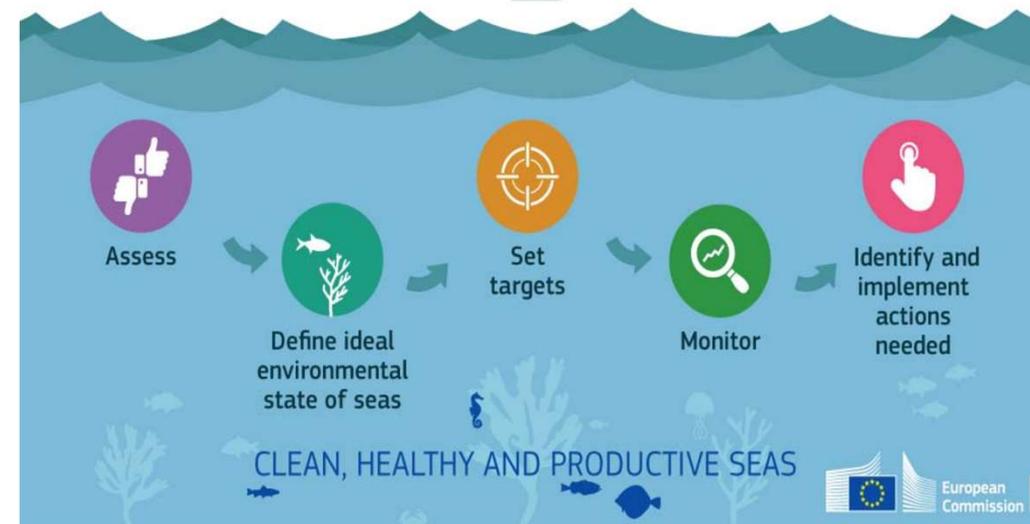
- ❖ Issue identification and monitoring the state of the marine environment
- ❖ Establish insights on trade-offs and interactions between marine ecosystems and economy
- ❖ Provide communication tool for policy makers to establish the importance of the marine environment and blue economy
- ❖ Support multidisciplinary communication and cooperation between various stakeholders within (and outside) the government
- ❖ Combine with other methods such as scenario analysis to provide integrated insight in cost and benefits for environmental decisions
- ❖ Serve as data input for other statistical methods that include economic-environmental evaluation



# Policy applications of NCA for the North Sea

- How can we use NCA for The European Marine Strategy Framework Directive (MSFD) & Various North Sea Projects?
- Consists of 3 parts:
  - Part 1: A description of the current state of the environment, environmental objectives and indicators for the North Sea
  - Part 2: Monitoring program
  - Part 3: The Program of Measures to ensure the sustainable use of the North Sea : 11 elements
- NCA can monitor state of the marine environment of the North-East Atlantic ocean
- Evaluate policy responses of MSFD

## How EU Member States develop marine strategies



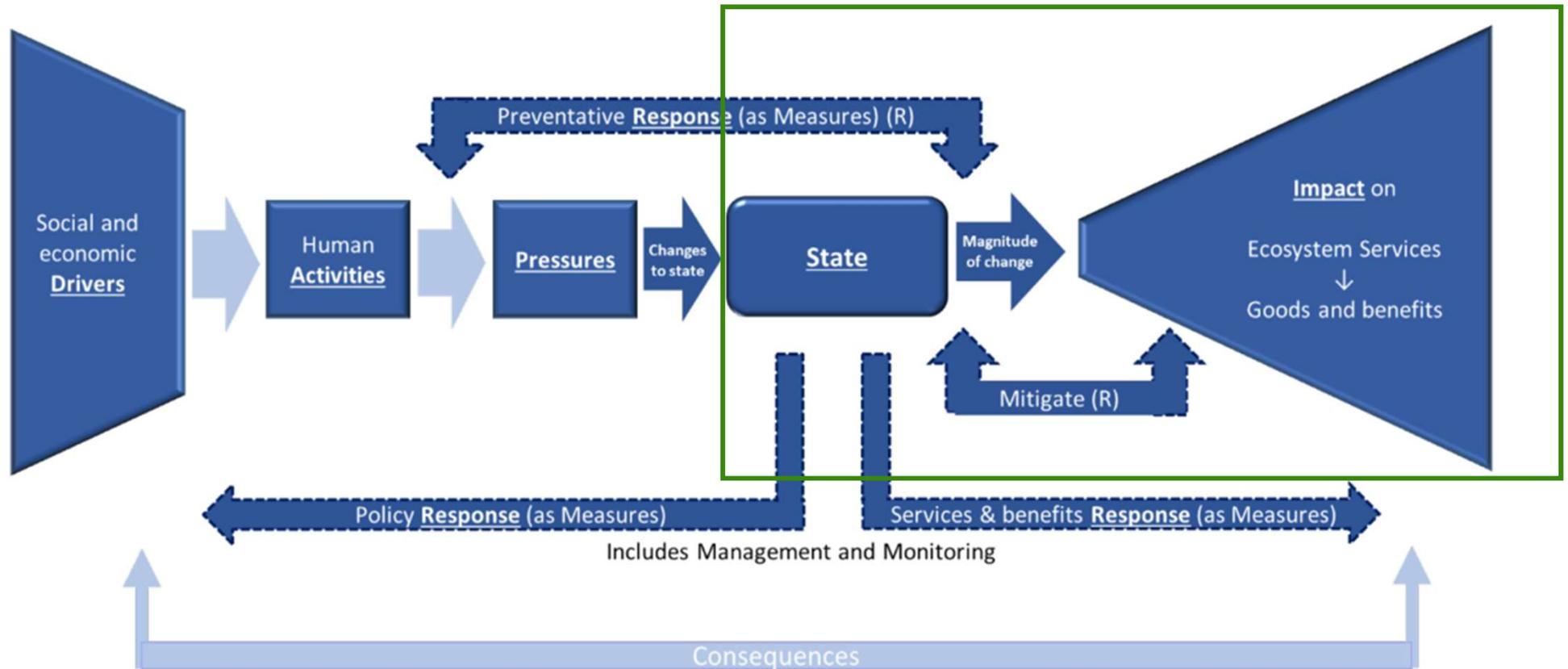


## Policy applications of NCA for OSPAR:

- > Provide synergies with Drivers-Activities-Pressures-State-Impact Response (DAPSIR) framework
- > Add quantitative economic perspective
- > Track changes over time
- > Increase integrations of topics and improve overview on interactions between different pressures



# Potential synergies DAPSIR framework - NCA





# Challenges

- > Data
- > How to keep policy makers engaged while accounts are being improved
- > Need for more case study examples to show the possibilities of NCA
- > Make the accounts more demand driven



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# Discussion



## Questions:

- What are some of the main challenges to be able to use NCA for marine policy?
- What is needed to keep policy-makers engaged while the accounts are being developed?
- How can NCA address issues that North-East Atlantic ocean are currently struggling with (Marine litter, eutrophication etc.) ?
- What are NCA and the SEEA-Ecosystem accounting lacking to be able to use it in (marine) policy ?



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Thank you for your  
attention!

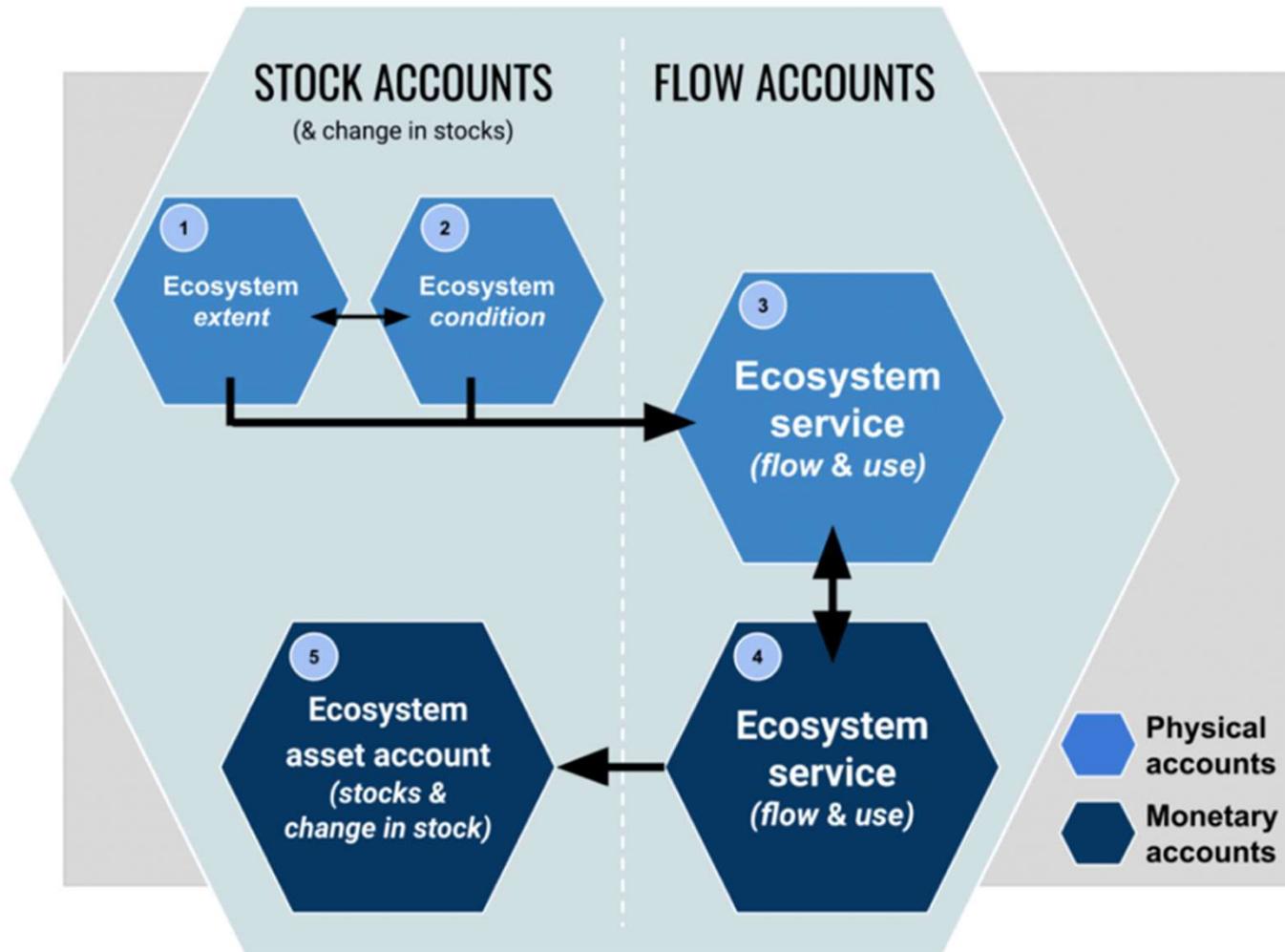
[wesley.van.veggel@rws.nl](mailto:wesley.van.veggel@rws.nl)



## Extra questions:

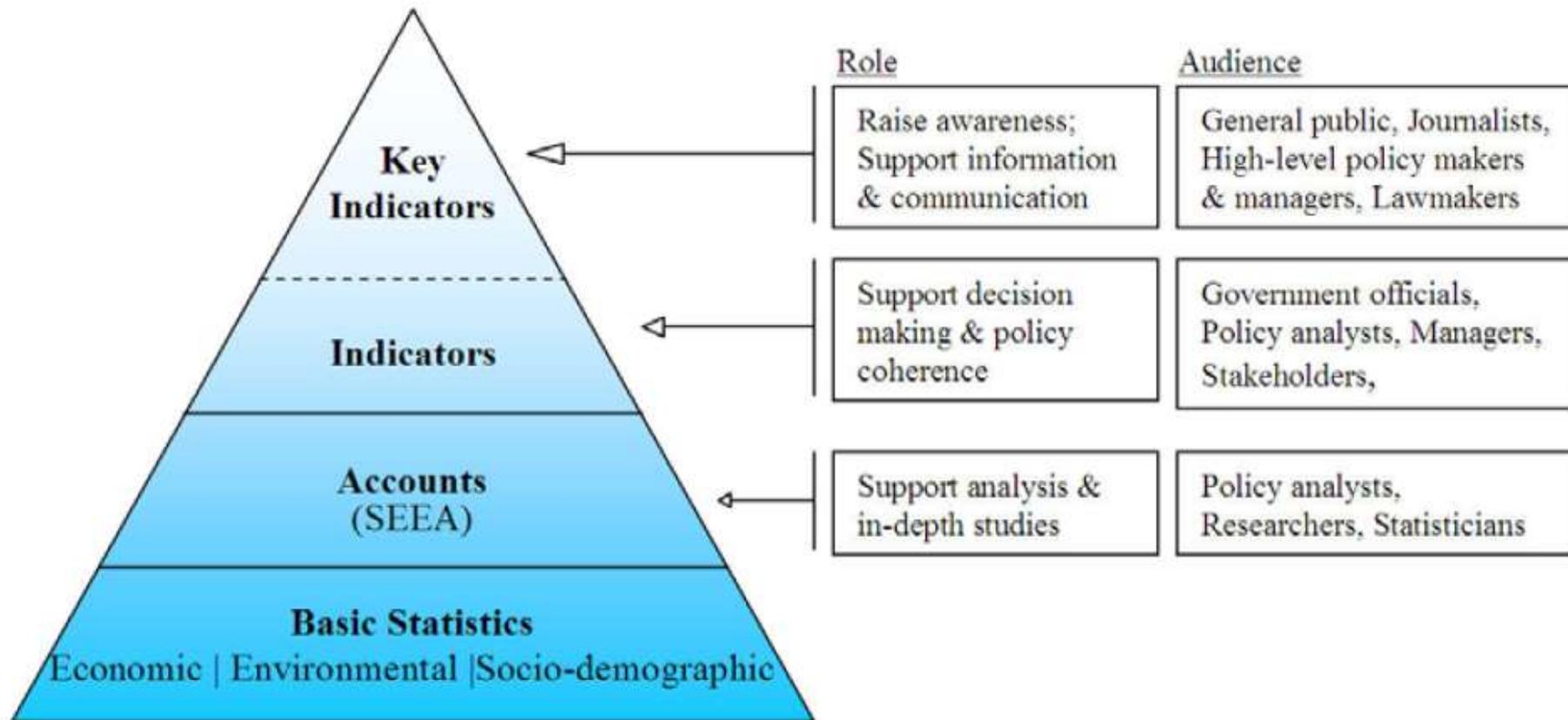
- > What kind of (visualization) tools or examples would be needed from Natural Capital Accounting (NCA)?
- > What is the advantage of placing existing data into a framework like Ecosystem Accounting of the SEEA?
- > How can NCA address issues that North-East Atlantic ocean are currently struggling with (Marine litter, eutrophication etc.) ?
- > How can NCA support Marine Spatial Planning?

# Extra slides: SEEA-EA

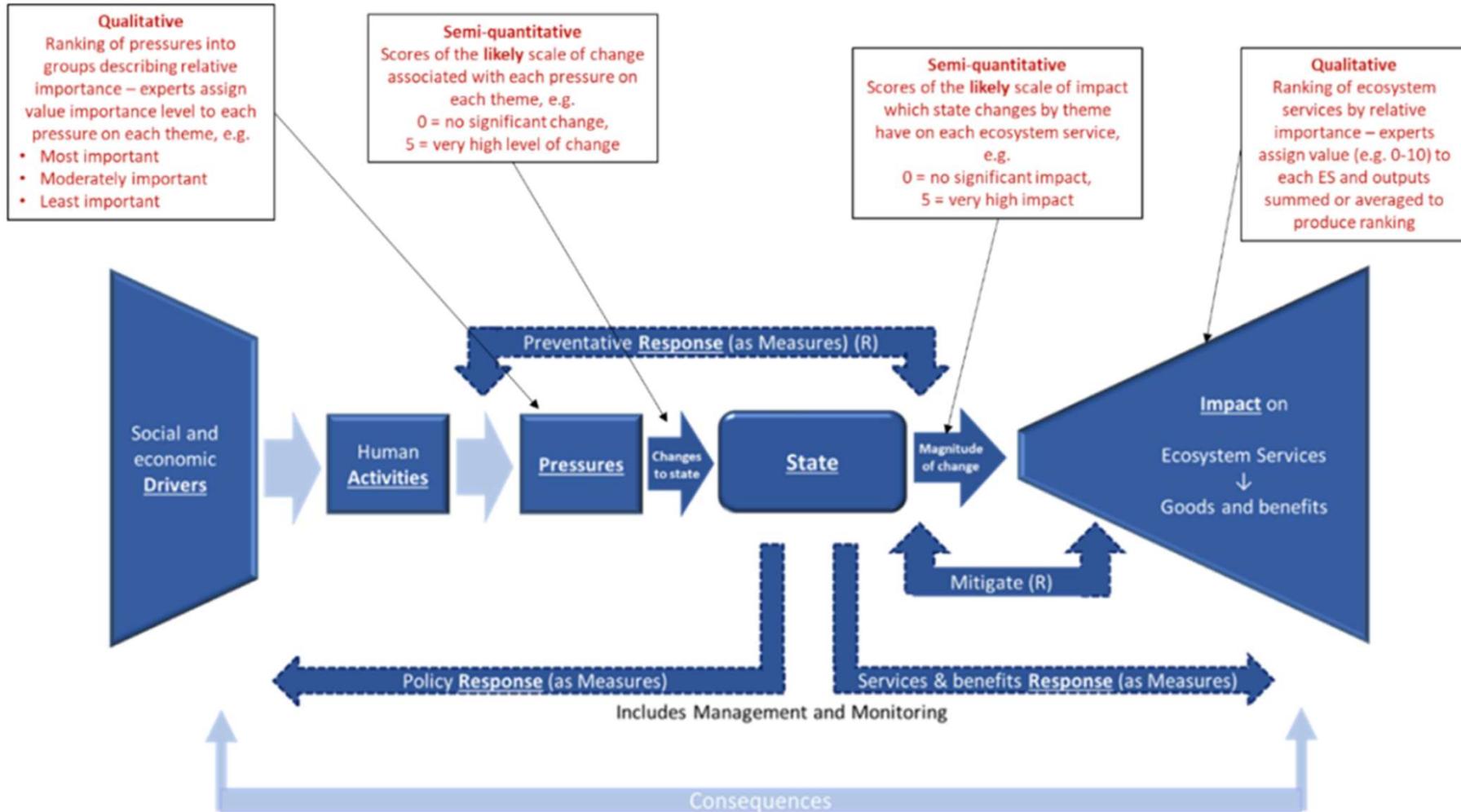




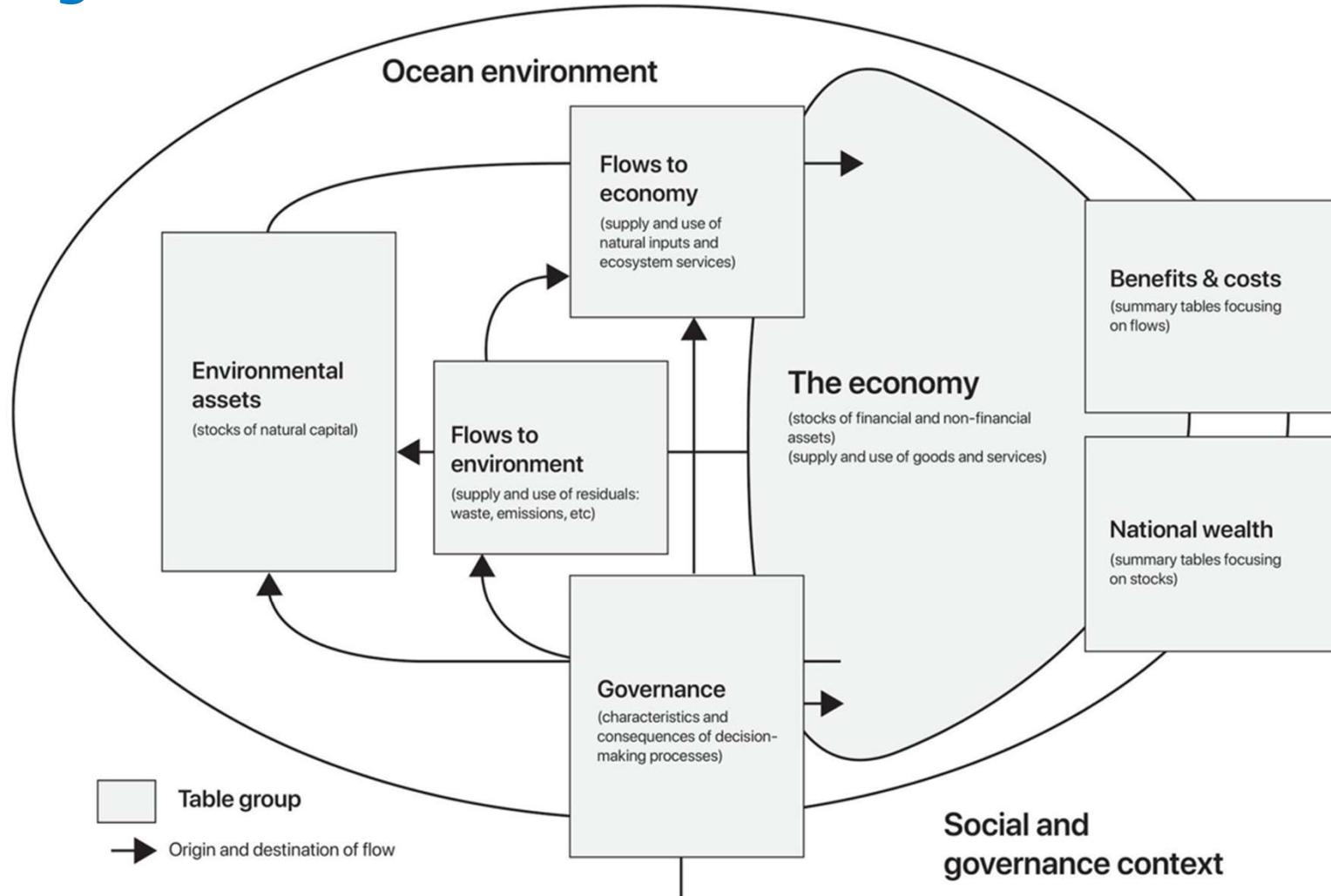
## Extra slide: Using NCA in policy making



# Extra slide: DAPSIR



# Extra slide: Ocean accounting framework



# Extra slide: MFSD



## Protecting Europe's Seas and Oceans

### The Marine Strategy Framework Directive

**Ambitious, comprehensive, effective**

The MSFD provides a strategy for the entire marine environment

- protects **marine biodiversity**
- assesses the impact of **all human activities**
- drives new **research and legal initiatives**
- aims for **Good Environmental Status (GES)** for the EU's marine waters.

**On the horizon**

To reach GES for the EU's seas and oceans, we need:

- more **ambitious and coherent definitions** of 'good environmental status'
- more **resources and collective action** to address key pressures
- coherent and effective **networks** of marine protected areas
- marine data that is **comparable** across regions.

**A seagull's view**

\*4 marine regions  
\*5,720,000 km<sup>2</sup>

- Baltic Sea**
  - White-tailed eagle populations are recovering.
  - The Baltic Proper harbour porpoise population is down to a few hundred.
  - Certain fish regularly exceed maximum dioxin limits.
- North-east Atlantic Ocean**
  - 41% of assessed fish and shellfish stocks are within safe limits.
  - Over 25% of marine bird species have declined.
  - 93% of fulmar birds assessed had ingested plastic.
- Mediterranean Sea**
  - Monk seal populations have stabilised.
  - Around 40% of sharks, rays and skates are declining.
  - 85% of turtles assessed had ingested litter.
  - 87% of fish and shellfish species are overfished.
- Black Sea**
  - Good cross-border cooperation between Romania and Bulgaria.
  - 87% of fish and shellfish species are overfished.

**Key and emerging challenges**

- underwater noise
- unsustainable fishing
- climate change
- litter
- non-indigenous species
- eutrophication
- contaminants

**Some facts & figures**

- 79% of the coastal sea bed disturbed due to **bottom trawling**.
- From 32% to 53% of sharks rays and skates are threatened by **catch**.
- Coastal waters with poor **eutrophication** status.
- Efforts to fight **chemical pollution** have led to reduced concentrations.
- The accumulation of **plastics** in marine species is a growing risk.
- Share of beach litter from **single use plastic**.

# Extra slide: NCA & SDG's



## The SEEA supports the SDGs

The SEEA provides information for 40 indicators for 9 SDGs

- GOAL 2: Zero Hunger
- GOAL 6: Clean Water and Sanitation
- GOAL 7: Affordable and Clean Energy
- GOAL 8: Decent Work and Economic Growth
- GOAL 9: Industry, Innovation and Infrastructure
- GOAL 11: Sustainable Cities and Communities
- GOAL 12: Responsible Consumption and Production
- GOAL 14: Life Below Water
- GOAL 15: Life on Land

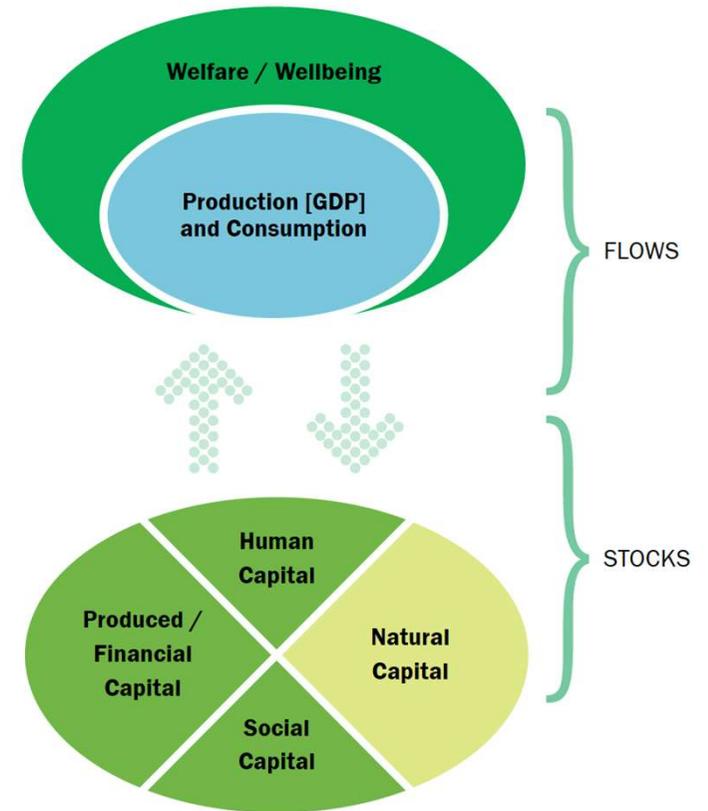


<p><b>NO POVERTY</b></p> <p>Sustainable ocean growth means sustained growth, which is able to lift and keep people out of poverty</p>	<p><b>1 NO POVERTY</b></p>	<p><b>2 ZERO HUNGER</b></p> <p><b>ZERO HUNGER</b></p> <p>Farming and fishing sustainably has the potential to produce far more protein than a 2050 population requires</p>
<p><b>GOOD HEALTH AND WELL-BEING</b></p> <p>Apart from being able to provide more nutritious food, a healthy ocean is the recharging point for billions of people</p>	<p><b>3 GOOD HEALTH AND WELL-BEING</b></p>	<p><b>4 QUALITY EDUCATION</b></p> <p><b>QUALITY EDUCATION</b></p> <p>Lifting marginalised coastal communities out of poverty increases their children's chances for a good education</p>
<p><b>GENDER EQUALITY</b></p> <p>Increasing gender equality in the ocean economy would empower millions of women</p>	<p><b>5 GENDER EQUALITY</b></p>	<p><b>6 CLEAN WATER AND SANITATION</b></p> <p><b>CLEAN WATER AND SANITATION</b></p> <p>Desalination of ocean water provides drinking water to millions of people. Additionally, improving sanitation can increase coastal water quality</p>
<p><b>AFFORDABLE AND CLEAN ENERGY</b></p> <p>Expanding the ocean's almost unlimited renewable energy potential is predicted to contribute 10% of the global electricity production increase by 2050</p>	<p><b>7 AFFORDABLE AND CLEAN ENERGY</b></p>	<p><b>8 DECENT WORK AND ECONOMIC GROWTH</b></p> <p><b>DECENT WORK AND ECONOMIC GROWTH</b></p> <p>Growing the ocean economy sustainably is projected to more than double the current ocean economy</p>
<p><b>INDUSTRY, INNOVATION AND INFRASTRUCTURE</b></p> <p>Constructing low carbon ports and renewable ocean energy will stimulate innovation and create vital infrastructure</p>	<p><b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b></p>	<p><b>10 REDUCED INEQUALITIES</b></p> <p><b>REDUCED INEQUALITIES</b></p> <p>Granting well-defined ocean access rights and sustainable resource use ensures long-term prosperity of marginalised groups</p>
<p><b>SUSTAINABLE CITIES AND COMMUNITIES</b></p> <p>Constructing blue-green storm protection infrastructure will make cities more sustainable</p>	<p><b>11 SUSTAINABLE CITIES AND COMMUNITIES</b></p>	<p><b>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</b></p> <p><b>RESPONSIBLE CONSUMPTION AND PRODUCTION</b></p> <p>Solving ocean plastic pollution drives us to build a more circular economy on land</p>
<p><b>CLIMATE ACTION</b></p> <p>Growing ocean industries sustainably can contribute up to one-fifth of greenhouse gas savings towards achieving a 1.5°C future</p>	<p><b>13 CLIMATE ACTION</b></p>	<p><b>15 LIFE ON LAND</b></p> <p><b>LIFE ON LAND</b></p> <p>Reducing ocean dead zones catalyses land-based reforms towards regenerative precision agriculture</p>
<p><b>PEACE, JUSTICE &amp; STRONG INSTITUTIONS</b></p> <p>In a sustainable ocean economy, a nation's sovereignty over its exclusive economic zone and resources is achieved</p>	<p><b>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</b></p>	<p><b>17 PARTNERSHIPS FOR THE GOALS</b></p> <p><b>PARTNERSHIPS FOR THE GOALS</b></p> <p>The ocean is a platform for collaboration and strengthens the global partnership for sustainable development</p>



## Policy applications of NCA for the North Sea:

- > The Netherlands want to measure welfare beyond GDP: *Wellbeing Economy*
- > Natural capital data can serve as data input for North Sea
- > NCA does not include social capital and "future generations"



Source: Author, adapted from UNECE et al. (2014)