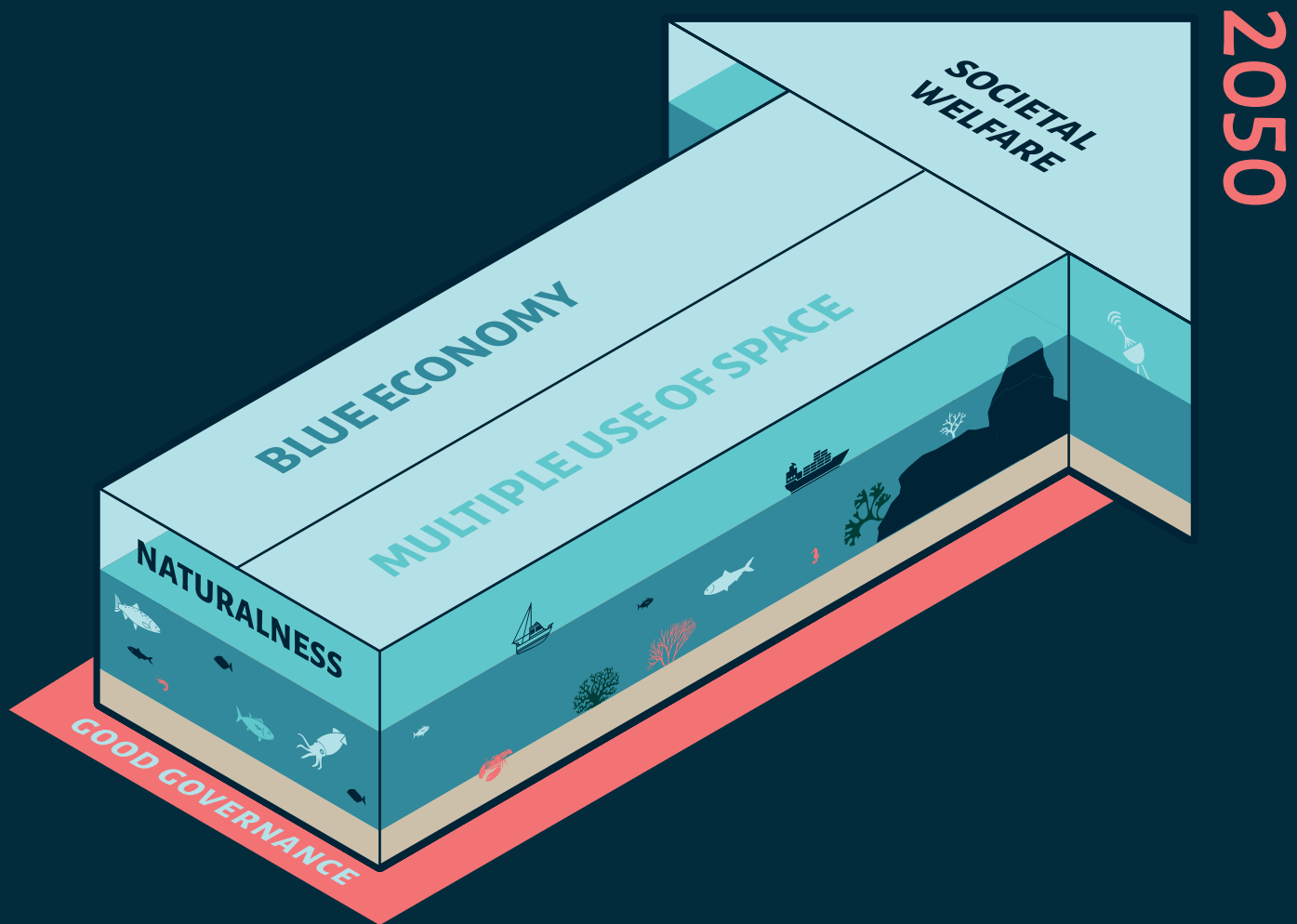


# NORTH SEA 2050

## LONG-TERM VISION



Philippe DE BACKER  
State Secretary for the North Sea  
20 December 2017

A SEA OF KNOWLEDGE  
A SEA OF POSSIBILITIES  
A BLUE FUTURE



Philippe DE BACKER  
Secretary of State for the North Sea

**M**ore than ever before, the Belgian North Sea has a **crucial role in our prosperity**. For centuries, 'the Channel' has been one of the busiest shipping routes in the world and is of great strategic importance to our country.

The maritime sector is the engine of our economy. The total direct value added by our **Belgian ports** was more than 18 billion Euros in 2015. Added to the indirect value, the total is 33 billion Euros; that's 8% of GDP. They employed 114,647 full-time workers directly, which together with the indirect employment, totals 252,394 full-time jobs or 6% of the working population of Belgium. The **offshore wind energy sector** employs 1400 people in Belgium and its target at EU level is 130 billion/year by 2020. Apart from traditional users such as the fisheries and sand extraction, we are also seeing new knowledge-driven activities in the North Sea which go beyond the Belgian sphere (aquaculture, marine biotechnology, wind and tidal energy). Finally, for our **coastal communities** the North Sea represents a significant asset in terms of tourism, sport and recreation.

Aside from the economy, the North Sea is also a very important and delicate ecosystem. If we all want to continue to be able to enjoy the North Sea, the main challenge of the coming years is to reconcile as much as possible the many activities that take place there and the great social challenges facing us with our environmental values.

In 2014, the federal government therefore drew up a **marine spatial plan** in order to harmonise the demands for space from the various users of the North Sea. This plan runs for a six-year period and includes a licensing policy that safeguards legal certainty for those wishing to carry out those activities. The revision process that should lead to a second marine spatial plan is currently underway, with the objective of being able to implement a new, balanced North Sea policy in 2020.

In this way, our country is fulfilling a unique **pioneering role in Europe**; a role that I, as Secretary of State for the North Sea, intend to strengthen and expand. Firstly, by investing in the development of a long-term vision for the Belgian part of the North Sea that will run until at least 2050. As a scientist, I can only emphasise that this North Sea 2050 **long-term vision** must rest on solid scientific foundations.

More than 100 stakeholders have contributed in the last year to the final reports that have led to the development of this vision text. I would like to thank all of the individuals and policy levels involved in working on this intensive, participatory '**Future of the Sea/Sea of the Future**' process, and to express my wish that they will also take part in the ongoing process. Only by doing so can we safeguard the crucial role of our North Sea for future generations.

**Together we know more, and with a sea of knowledge  
we create countless possibilities which can ensure a blue future.**

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# INTRODUCTION

Seas and oceans are faced more than ever with significant economic and ecological developments. On the basis of the knowledge available to us today, the preconditions are set with which these developmental activities must comply to ensure that their impact on the ecosystem services are manageable.

The one thing we can be sure of is that the future will always contain surprises. Therefore we need **a sea of knowledge** in order to be able to meet the challenges of the future. After all, a great many challenges demand, as well as a spatial approach, a general strategy in order to be able to continue to take advantage of the functions of the North Sea through the years with a focus on creating social prosperity. In Belgium, we possess a very high standard of marine knowledge and technological know-how. The North Sea Forum has tried to gather this scientific knowledge and develop it further in order to outline core principles which can be used to frame the future use of the North Sea.

This text first provides a description of the Belgian section of the North Sea (BNS), and then outlines the main principles of the final reports in order to arrive at the ground rules for good governance, from the present day to 2050.

# 1

## DESCRIPTION OF THE BELGIAN NORTH SEA<sup>1</sup>

The total surface area of the BNS is 3,454 km<sup>2</sup>. The coastline is 65 km long and its maximum seaward length is 83 km. Its depth can reach 40 metres. The BNS comprises diverse valuable habitats and a unique archaeological and paleontological archive. With over 150,000 ship movements per year, it is one of the busiest seas in the world. It is a source of offshore energy, fishery and aquaculture, and sand extraction; it provides space for military exercises and forms a powerful magnet for tourism, sport and recreation.

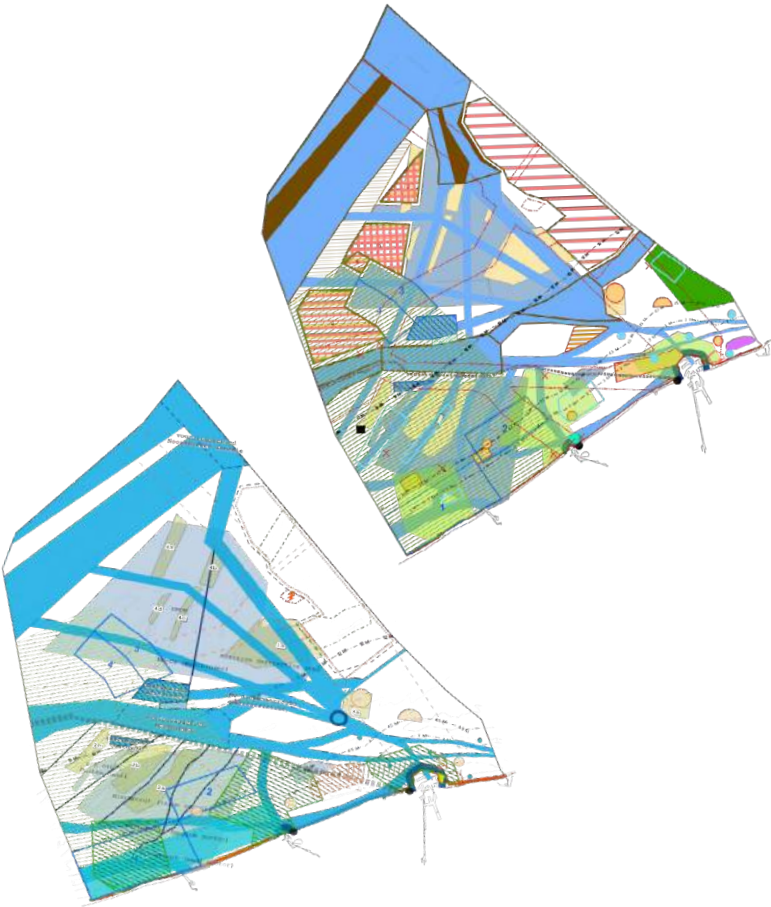


FIGURE 1  
Map: integrated vision of the Marine Spatial Plan 2020-2026.

1. For a detailed description, see the Naturalness working party final report.

# 2

## NORTH SEA 2050 LONG-TERM VISION vs. MARINE SPATIAL PLAN

In 2017, both the revision process for the maritime spatial plan and the development of the North Sea 2050 long-term vision took place. The two processes followed their own course and timing but were not entirely separate from each other.

The table below shows the main similarities and differences side by side, and clarifies the relationship between the North Sea 2050 long-term vision and other policy documents:

	NORTH SEA 2050 LONG-TERM VISION	MARINE SPATIAL PLAN 2020-2026
CONTENT	= policy vision of the development of the BNS	= plan that spatially organises the BNS
TIME-BOUND SCOPE	2050	2020 to 2026
CONTRACTING PROCESS	12/2016 to 12/2017	Spring 2017 to Spring 2019
SPATIAL SCOPE	BNS	BNS
PROCEDURE	outlined by the Secretary of State for the North Sea	established by royal decree
RESULT	directive policy document	binding regulations

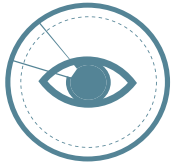
TABLE 1  
Comparison between the long term vision of the North Sea 2050  
and the marine spatial plan 2020-2026.

The interaction between the two processes is therefore crucial to the definite implementation in the field. The North Sea 2050 long-term vision should be seen as directive here, in which long-term objectives and preconditions are included. The marine spatial plan can in turn – in the shorter term – provide spatial detail to these objectives and include the preconditions in the procedures which implement specific spatial matters.

In short, the North Sea 2050 long-term vision can be viewed as an **integrated vision**, while the marine spatial plan is a tool with which to achieve the fundamental vision.

### INTEGRATED VISION

NORTH SEA 2050  
spatial aspects  
of long term vision



### TOOL

MARINE SPATIAL PLANNING  
definite plan



# 3

## VISION DEVELOPMENT FROM A PARTICIPATORY PROCESS<sup>2</sup>

Since the implementation of the first marine spatial plan, which already outlined a vision of the future, the need for an integrated process for the development of a long-term vision has become increasingly clear. The marine spatial plan created in the first place greater awareness among the various actors in this limited space. **Public participation** has also become essential, and rightly so, and not solely in the context of the implementation of European legislation.

The realisation that **strategic decisions for the future** have to be made, together with other stakeholders, is growing all the time. We are in danger of hitting the limits and boundaries of our small sea area and the policy must contain detailed information in order to be able to make the right assessments and choices.

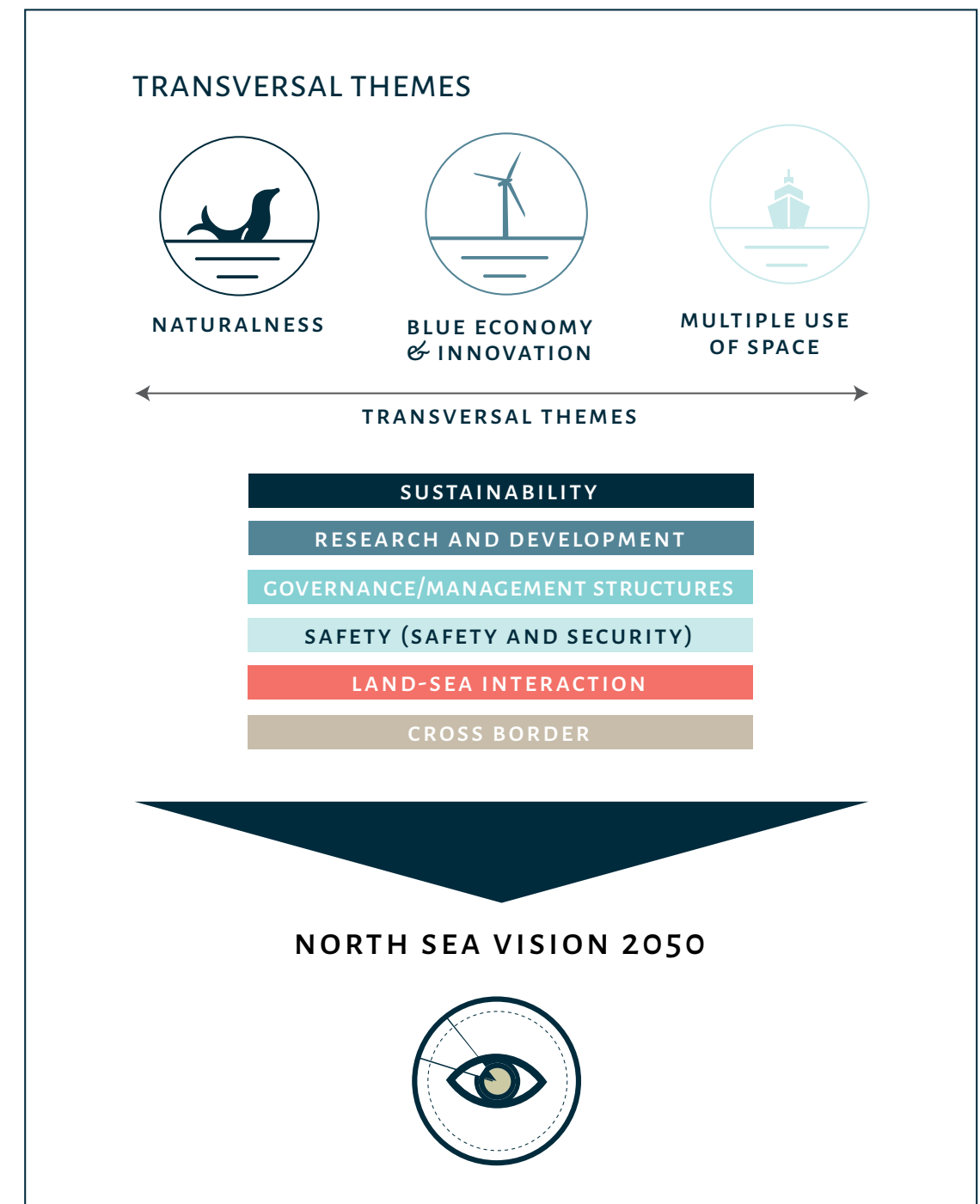
In partnership with the Directorate Natural Environment of the Royal Belgian Institute of Natural Sciences (OD Natuur/KBIN) and the Flanders Marine Institute (VLIZ) we have set out a process within which the participation and commitment of all those active at sea forms the key point.

Three core working parties were established around the themes of “Naturalness”, “Blue economy and innovation” and “Multiple use of space”.

In addition, six transversal themes were included in the process: sustainability, research and development, governance, safety and security, land-sea interaction and cross-border thinking.

<sup>2</sup>. For more information see *Terms of Reference*.

### THE CORE AND TRANSVERSAL THEMES



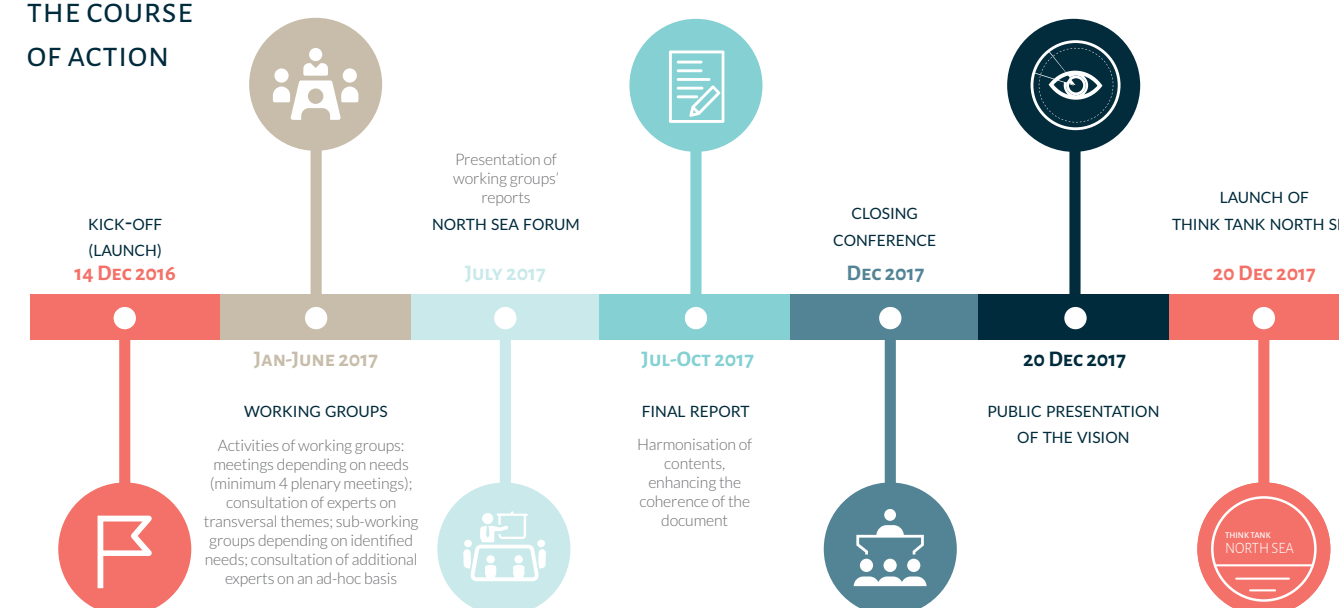
# 4

## THE PARTICIPATORY PROCESS

The process started with a kick-off event on 16 December 2016 in the naval base at Zeebrugge. The three core working parties then began their work. At least four plenary meetings per core theme have led to the compiling of three final reports, on which consensus was reached within each core working party. On 18 July 2017 these three final reports were submitted to the participants of the core working parties.

The North Sea 2050 long-term vision elaborates on the findings and conclusions described in the three final reports. The text aims, on one hand, to provide a framework against which future activities in the BNS should be tested and, on the other, to give direction to current and future BNS users and policymakers.

### THE COURSE OF ACTION





# 5

## STARTING POINTS FOR THE NORTH SEA 2050 LONG-TERM VISION

1 | The biotic and abiotic processes within the marine environment vary in four (3+1) dimensions:<sup>3</sup>

- **vertical** (underground, sea bed, water column, water surface and air)
- **horizontal** (spatial variation (marine landscape), land-sea transition)
- **in space**
- **in time** (dynamic and variability).

In order to make optimum use of the space in and on the sea in the future, we must also take into account the possibilities of this four-dimensional use. In this way we can also better take into account depth and height (water column, substratum, air) and seasonal variations in natural properties and processes (time) as well as the ‘two’ map dimensions (sea bed). Not all activities are equally intensive everywhere. To determine multiple use of space, all of these dimensions must be considered.

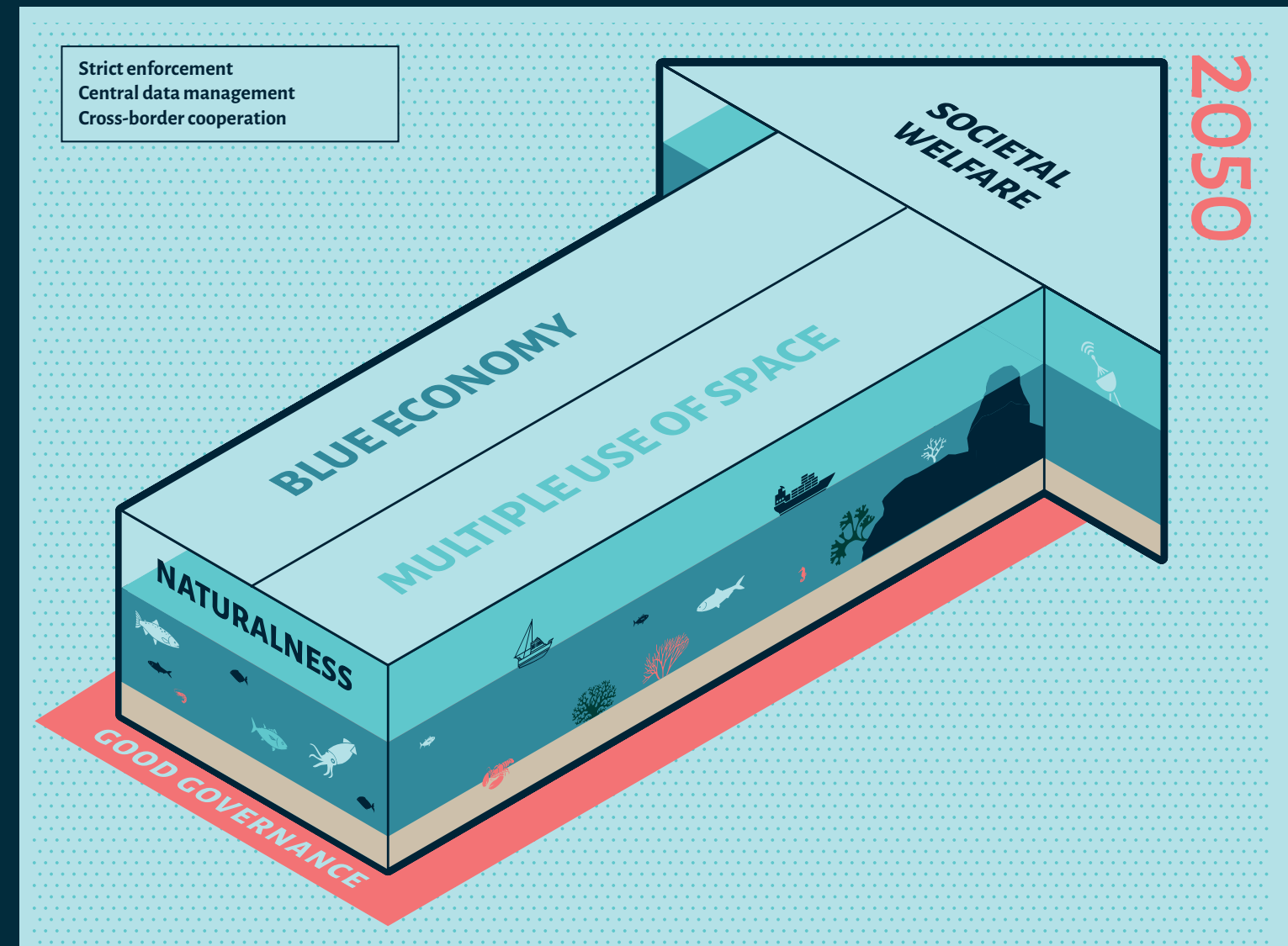
“*Working with nature*” means in this context that we implement the natural dynamics of the sea within the adopted policy.

2 | Now and in the future, there are no **private property rights** to the sea space. This space comes under the responsibility of all (the Belgian state) and remains public property.

3 | **Cooperation** at economic, ecological and scientific levels, between both adjacent nations and social actors is important in order to be able to achieve the proposed objectives.

4 | A **transparent and participatory policy** must be founded on **scientific knowledge and technology** in order to support the combining of various spatial functions.

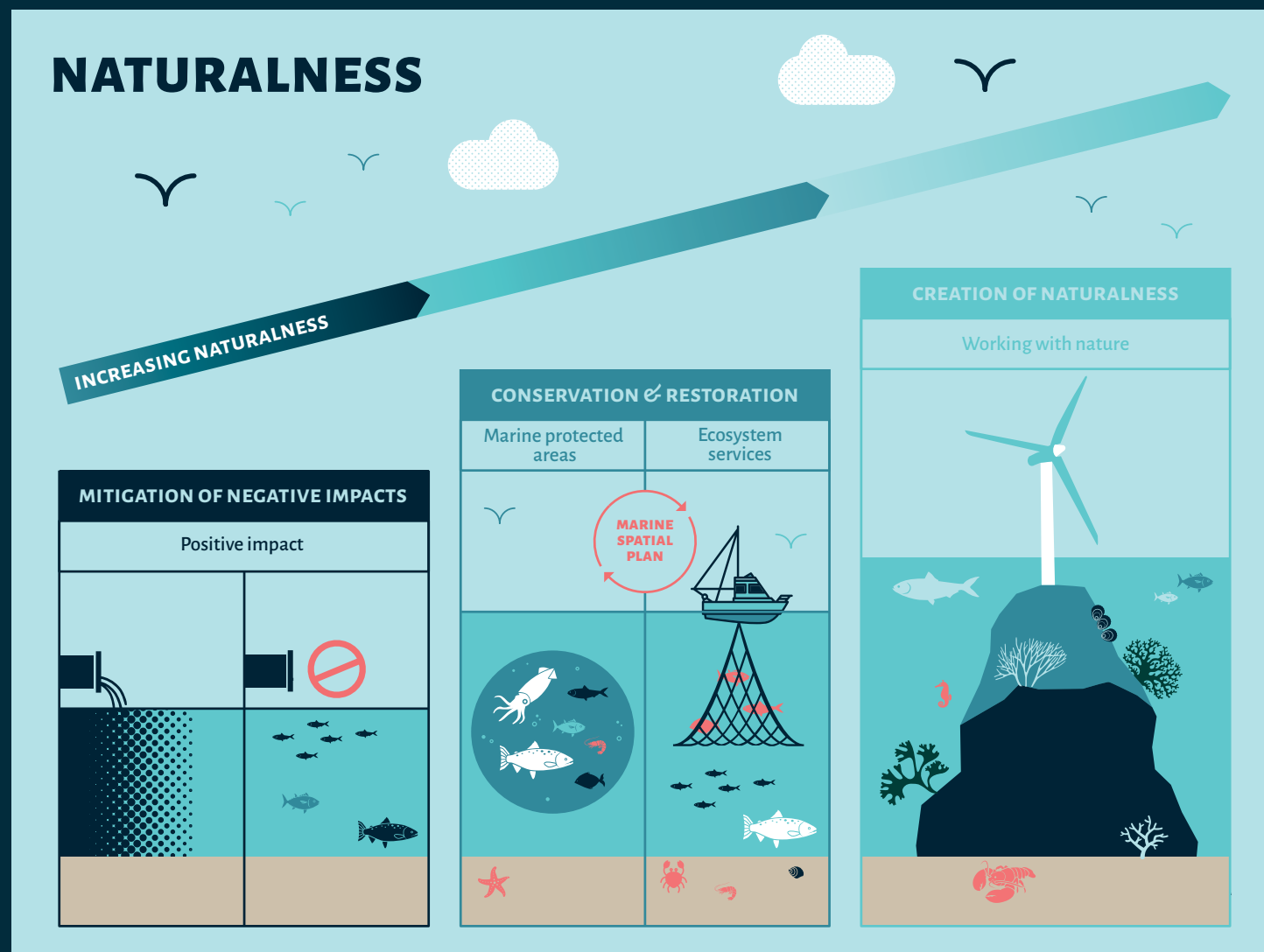
3. An ecosystem service is a service provided to humans by an ecosystem. The ecosystem services can be classified as: production services, regulatory services, cultural services and supporting services (see further on [www.thinktanknorthsea.be](http://www.thinktanknorthsea.be)).





# 6

## CORE PRINCIPLES FOR SUSTAINABLE SEA MANAGEMENT



To develop activities in the BNS we work with **three core principles** or ground rules against which all future activities should ideally be tested. These core principles can be defined as follows:

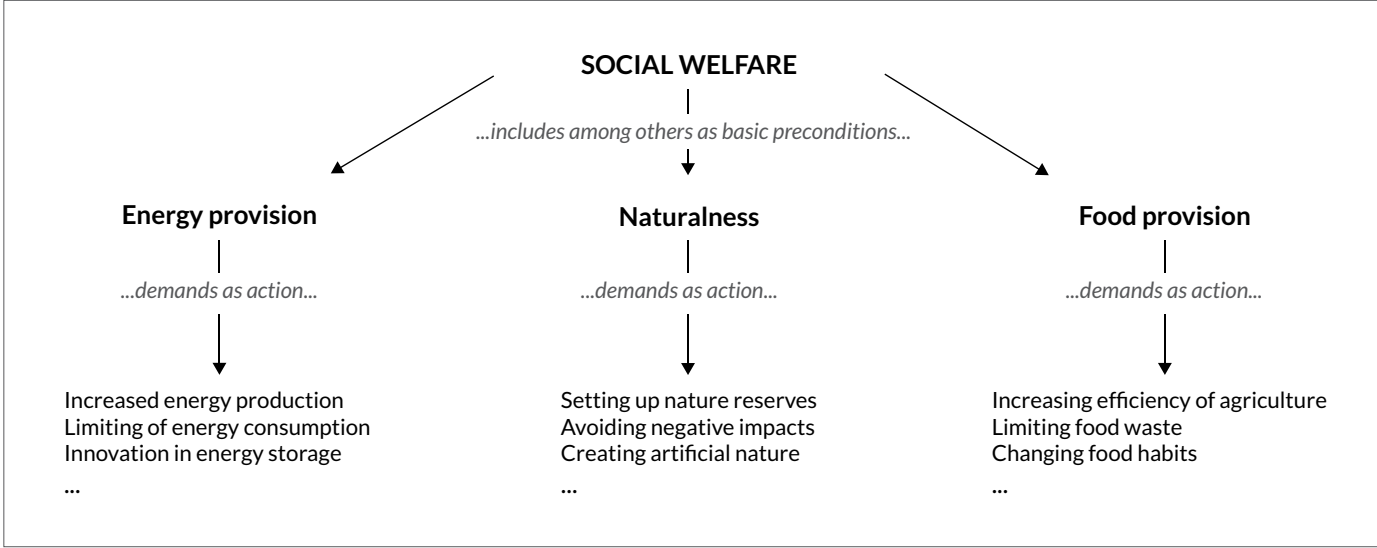
- **Naturalness** is a basic precondition for the development of the BNS in all its dimensions
- The BNS will continue to offer important **user functions** in 2050 in order to support **social welfare**
- By 2050, the principle of **multiple use of space** is the norm for all uses of space within the BNS.

### 6.1. NATURALNESS IS A BASIC PRECONDITION OF THE DEVELOPMENT OF THE BNS IN ALL ITS DIMENSIONS

**Naturalness** is defined as the scale and intensity at which biotic and abiotic processes take place and are manifested in the ecosystem. Naturalness is the basic precondition that must be met in order to safeguard social welfare today and in the future (fig. 2).

Naturalness is therefore fundamental to various goods and services in our society, now and in the future, known or as yet unknown. Within the concept of the "basic precondition", we take into account the value of regulatory and supporting **ecosystem services**<sup>4</sup> but there is also room for the maintenance, restoration and strengthening of the intrinsic value of nature. The latter comprises the so-called "option value", determined by as-yet-unknown future and optional advantages.

4. An ecosystem service is a service provided to humans by an ecosystem. The ecosystem services can be classified as: production services, regulatory services, cultural services and supporting services (see further on).



**FIGURE 2**  
Depiction of the parallel between naturalness and two other basic preconditions for social welfare. These are examples from a non-exhaustive list of basic preconditions for social welfare. Note that the actions required to comply with the three examples sometimes make a spatial claim, but not always.

The **desired quality of the marine environment** is defined on the basis of the ecosystem services to be supplied, including the intrinsic value.

In 2050, naturalness should therefore be at a level that allows for healthy ecological development without compromising the current and future ecosystem services. By definition, maximum attention is given to naturalness in the further development of human activities at sea. This does not mean working towards an ecosystem without human influence but **sustainable management of the ecosystem**.

There are currently countless forms of human activity at sea and their actual impact cannot yet be predicted. It is important to bear in mind that naturalness is not influenced solely by these activities at sea but equally by activities on land (e.g. beach tourism, the introduction of nutrients and pollutants).

HUMAN ACTIVITY	IMPACT ON NATURALNESS, including
FISHERIES	Bycatch, bed disturbance, changes to ecosystem
SHIPPING	CO2 emissions, noise emissions, domestic waste, fine dust, disturbance
DREDGING	Bed disturbance, turbidity increase (= sediment mobilisation)
POWER GENERATION	Introduction of artificial habitat, collision, noise
AQUACULTURE	Historical introduction of non-native species, eutrophication, changing dynamics of infections and parasites
TOURISM	Waste, visual disturbance, disturbance, changing bed or ground dynamics (land and sea)
COASTAL DEFENCES	Ground disturbance in coastal zone, introduction of artificial habitat, productivity changes, changing sediment balance
SAND EXTRACTION	Bed disturbance in location of reclamation, changing sand and sediment balance, changing bathymetry/topography
AGRICULTURE	Eutrophication, mineral mobilisation
HOUSING AND INDUSTRY	Pollution, changing landscape and habitat, disturbance, plastic and litter

**TABLE 2**  
Non-exhaustive list of influences on naturalness from current human activity at sea as set out during the working sessions of the Naturalness core working party.

**A. HOW CAN WE SUPPORT NATURALNESS IN THE FUTURE?**

Fulfilment or contribution to the basic precondition of naturalness can be evaluated from the following angles<sup>5</sup>:

- 1 | Maintaining and restoring natural assets (e.g. with management plans and measures for marine protected areas)
- 2 | Avoiding and preventing negative impacts (the so-called mitigating measures)
- 3 | Creating naturalness (incl. creating artificial reefs).

5. For more information, refer to the report on naturalness on the website [www.thinktanknorthsea.be](http://www.thinktanknorthsea.be)

## B. STEPS TOWARDS A SUSTAINABLE NATURALNESS BY 2050

### BI. STEP 1: ESTABLISHING THE THRESHOLDS

Achieving and maintaining the desired naturalness implies a **resilient ecosystem** with the capacity to adapt while preserving the inherent ecosystem services for each type of biotope in that ecosystem, in order to make them more resistant to human and natural disturbance.

Determining these aims and threshold remains a scientific challenge (embedded into a social basis). What is the objective? How much nature is enough? What is a healthy biodiversity threshold for infection resistance? What is the appropriate spatial scale for which this should be set? All of these questions must be answered in order to determine when an ecosystem can be considered healthy (= desired naturalness). This also provides the key to determining an **achievable and sustainable ecological state** in function of future development so that the baseline and/or threshold are no longer equated with 'back to the 1900 state'. Neither does the desired naturalness have to be set at the same level for all four separate dimensions. Spatial and/or time-bound differentiation may be designated.

Determining the threshold requires:

- **Use of scientific knowledge:** it is important to both qualify and quantify the desired state as already defined in the marine strategy framework and the habitat guideline, for the bed, water column and air. Important here is the focus on the scientific substantiation needed to estimate which activity has or may have an impact on the marine environment. The improvement and expansion of this knowledge is primary within the environmental effect assessment process (incl. how to mitigate and to what extent), which forms the basis for the management of human activity at sea.
- Identification and elimination of **knowledge gaps and uncertainties**. As well as in-house expertise, use should also be made of experience from land nature management and expertise from abroad. Accurate compliance and intensive scientific monitoring of pilot projects or testing in situ (at sea) offer maximum advantages.

- Thorough monitoring to ensure that the proposed goals are reached. This monitoring must follow scientifically founded, objective and measurable indicators. All the available resources must be put to optimum use.
- **Investing in research, development and innovation** (RD&I) of alternative and innovative monitoring strategies, techniques and activities, including in the realm of the Internet of Things, communication, big data, real time data collection, innovative materials, "*Citizen Science*"<sup>6</sup> and "*Tacit knowledge*"<sup>7</sup>, etc., which increasingly contribute to the efficient collection of data regarding the state of the marine environment.

### BII. STEP 2 : MITIGATION OF NEGATIVE IMPACTS OF HUMAN ACTIVITY AT SEA

Mitigation is the combination (in decreasing order of desirability) of preventing/avoiding (dealing with the source), reducing and compensating the impact of human activities. The ultimate goal could be that all activities are in accordance with the desired naturalness to the extent that compensation is no longer necessary.

In itself, this means:

- **Avoiding impact**, i.e. that human activity at sea is set up to have 'zero impact' or even a positive impact (see further on). The basic position here is that the **polluter avoids, limits and restores**, which goes beyond the 'polluter pays' principle.
- A far-reaching **empowerment** of sectors based on international agreements and partnership in order to avoid compromising economic developments in Belgian waters
- Aiming for low-impact activities in which mitigation is already accounted for before the activity takes place. If there is impact it has to be **reversible**. In other

<sup>6</sup>. Scientific projects in which individual volunteers or networks of volunteers, not necessarily with a background in scientific education, carry out or manage research-related tasks such as observations, measurements and calculations.

<sup>7</sup>. Subconscious knowledge that is difficult to share between persons. .

words, naturalness has to be at the heart of the design of any (new) activity. Activities can only be permitted if it can be demonstrated (on the basis of the scientific knowledge currently available) that the desired naturalness will not in all (scientific) probability be compromised.

The MER tool must be evaluated and if necessary converted into:

- 1 | a testing framework that must allow an objective distinction between those activities which are expected to have a considerable impact (= macro impact) and those expected to have minimal impact (= micro impact)
- 2 | a tool that focuses on finding opportunities for positive impacts.

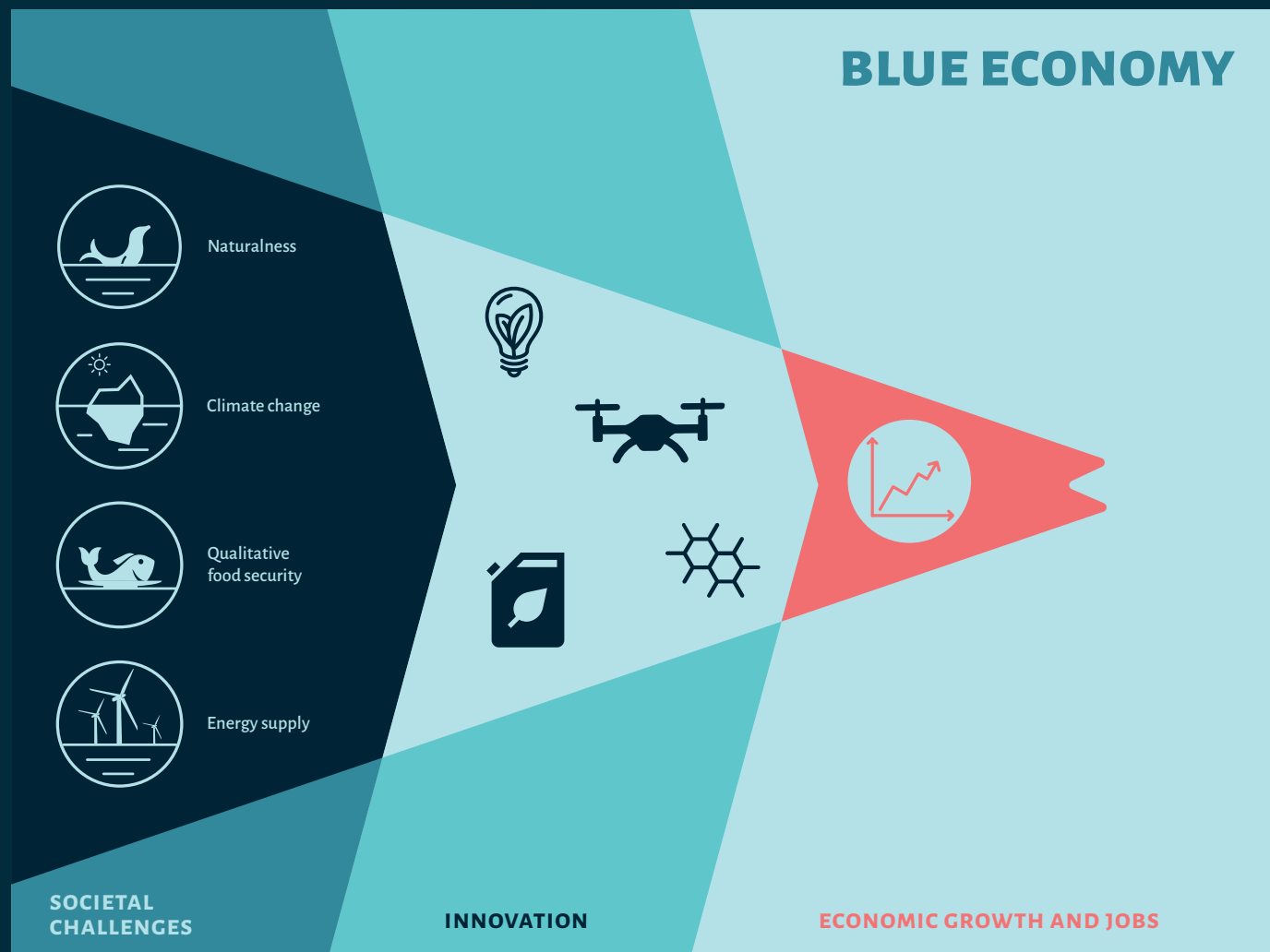
### BIII. STEP 3 : CREATING NATURALNESS IN THE BNS

Actions concerned with the maintenance and restoration of the desired naturalness in the BNS can take many forms, but an important role is of course reserved for the marine protected regions.

It is important here to:

- Ensure that the already widely tested and scientifically-based demarcation and description of the objectives of the marine protected areas continue to be a priority in the future. Only on this basis can a meaningful choice be made with regard to location, size and any opportunity for multiple use of space. This substantiation also serves immediately as a justification of “no use” marine protected areas versus marine protected areas with adapted joint use.
- Promote passive or active restoration of **lost natural habitats** (e.g. reefs of European oyster) **or ecosystem services** as their loss causes the disappearance or minimisation in turn of ecosystem services. A thorough assessment should be made regarding whether, and if so where, restoration should take place. Of course, a return to the days before human impact is not feasible.

- Consider the creation of **dynamic natural areas** in space and time in order to make the most of the interaction between maintenance objectives and any joint use. For example, areas may be closed off from human disturbance for a certain period for the purpose of temporarily prioritised nesting, breeding resting and foraging areas for mobile species such as fish, birds and marine mammals.
- Demarcate areas in order to scientifically monitor the natural evolution of existing processes. Nature reserves are important not just for their conservation value but also for **scientific research** and as **reference zones** for the estimation of the impact of human activity at sea.



## 6.2. THE BNS WILL CONTINUE TO PROVIDE IMPORTANT USER FUNCTIONS IN 2050 IN ORDER TO SUPPORT SOCIAL WELFARE

The BNS is a highly productive ecosystem. Despite its small area its spatial comprehensiveness has room for all sorts of human activities and functions, some with a direct economic result, all with a human significance: recreation and sport, tourism, shipping, research, energy, coastal defences, etc.

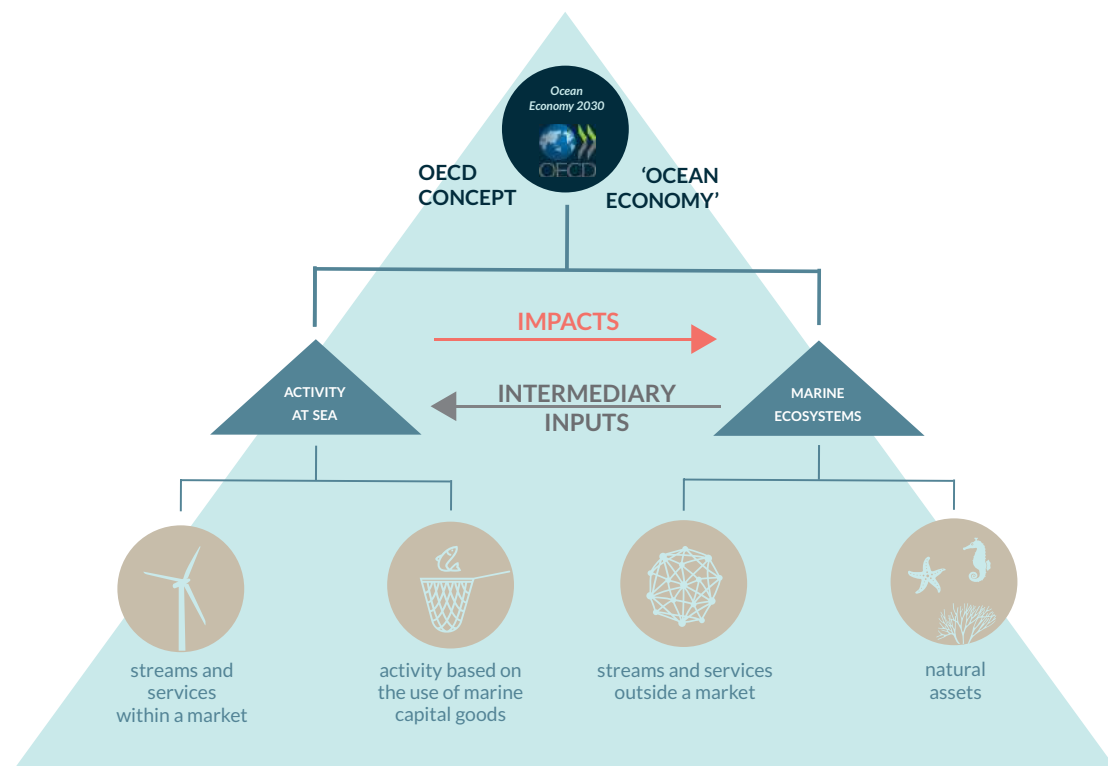
This group of economic sectors and activities, which use marine resources to a significant extent, is often referred to as the “**blue economy**”.

The blue economy is continuously subject to **innovation** at the technology (e.g. new materials), digital, policy innovation (e.g. marine spatial planning) and social levels. There is a **strong dynamic** between the Belgian knowledge centres and industry, in which information is actively exchanged around the economic potential that these actors see in relation to the spatial planning of the Belgian North Sea.<sup>8</sup>

The recent OECD report ‘*The Ocean Economy in 2030*’ outlines the possible developments and preconditions needed to ensure that the developments run smoothly. The OECD expects that the world’s ‘**ocean economy**’ will grow more strongly than the average economy, and many Belgian driving forces are working to play a part in these new markets. The OECD concept of the ‘ocean economy’ indicates that there is a strong link between the marine ecosystems (supplying ‘eco-system services’) and human activity at sea.

Many activities at sea are directly connected to land-based activities, with the **ports** as the **main access portals**.

<sup>8</sup>. See report: “Blue economy and innovation” on [www.thinktanknorthsea.be](http://www.thinktanknorthsea.be)



**FIGURE 3**  
OECD concept of the ocean economy (2016)

In the case of future developments, we must therefore look at whether they are likely and/or we want them to take place. The concept developed around this is also based on **ecosystem services**.

## A. IMPORTANT USER FUNCTIONS ACCORDING TO THE ECOSYSTEM SERVICES

Ecosystem services can be structured as follows:

- 1 | **Productive services**, e.g. aquaculture on a commercial scale, wind and tidal power, extraction of minerals.
- 2 | **Supporting services**, e.g. safety, transport.
- 3 | **Cultural services**, e.g. presence of cultural heritage, recreation.
- 4 | **Regulating services**: climate, carbon absorption.

## B. FOUR PRINCIPLES FOR FUTURE POLICY REGARDING THE BLUE ECONOMY AND INNOVATION

### BI. PRINCIPLE 1 : SOCIAL WELFARE IS PRIMARY

**Social welfare** is formed by the sum of all the ecosystem services the BNS supplies. Direct and indirect forms of economic valorisation (via the producing and supporting services) are the most obvious but the cultural and regulating services also contribute significantly to social welfare. The large-scale social evolutions and challenges (digitisation, automation, cyber security, renewable energy systems and energy security, climate change, raw material scarcity, changes in trading patterns, citizen responsibility, and the critical consumer etc.) will drive the future evolutions which may affect spatial use in the BNS. “The further development of offshore energy and the associated network infrastructure will require space. The amount required depends on the intended capacity, the technologies used and the location.” These questions must be answered, and the answers must not harm social welfare.

### BII. PRINCIPLE 2: UNCERTAINTY IS FUNDAMENTAL AND CONFIRMS THE NEED FOR AN ADAPTIVE POLICY

The unpredictability of the future is fundamental. The six-yearly revision of the maritime spatial plan goes some way towards meeting the need of industry for a sufficiently stable yet adaptive policy framework. After all, in the longer term it has to be possible to provide the necessary legal certainty, without the allocated user rights being considered self-evident: when the means no longer serve social welfare, it must be possible to free the allocated space for other functions.

### BIII. PRINCIPLE 3: THE SEA IS AN OPEN 4 DIMENSIONAL ISSUE, FOR WHICH KNOWLEDGE SHOULD BE BETTER USED

The further implementation of marine spatial planning should rest squarely on the dynamics of the North Sea, including those beyond national borders.

Because of climate change and disturbances to marine ecosystems, we must take into account higher variability (and further changes to the biosphere). In order to deal with these changes appropriately, our knowledge must be more thoroughly valorised. Technological innovations will allow a more dynamic way of dealing with the users of the sea.



BIV. PRINCIPLE 4: INNOVATIVE TECHNOLOGIES AND THEIR REPERCUSSIONS FOR THE  
SYSTEMS AND FUNCTIONS OF THE BNS

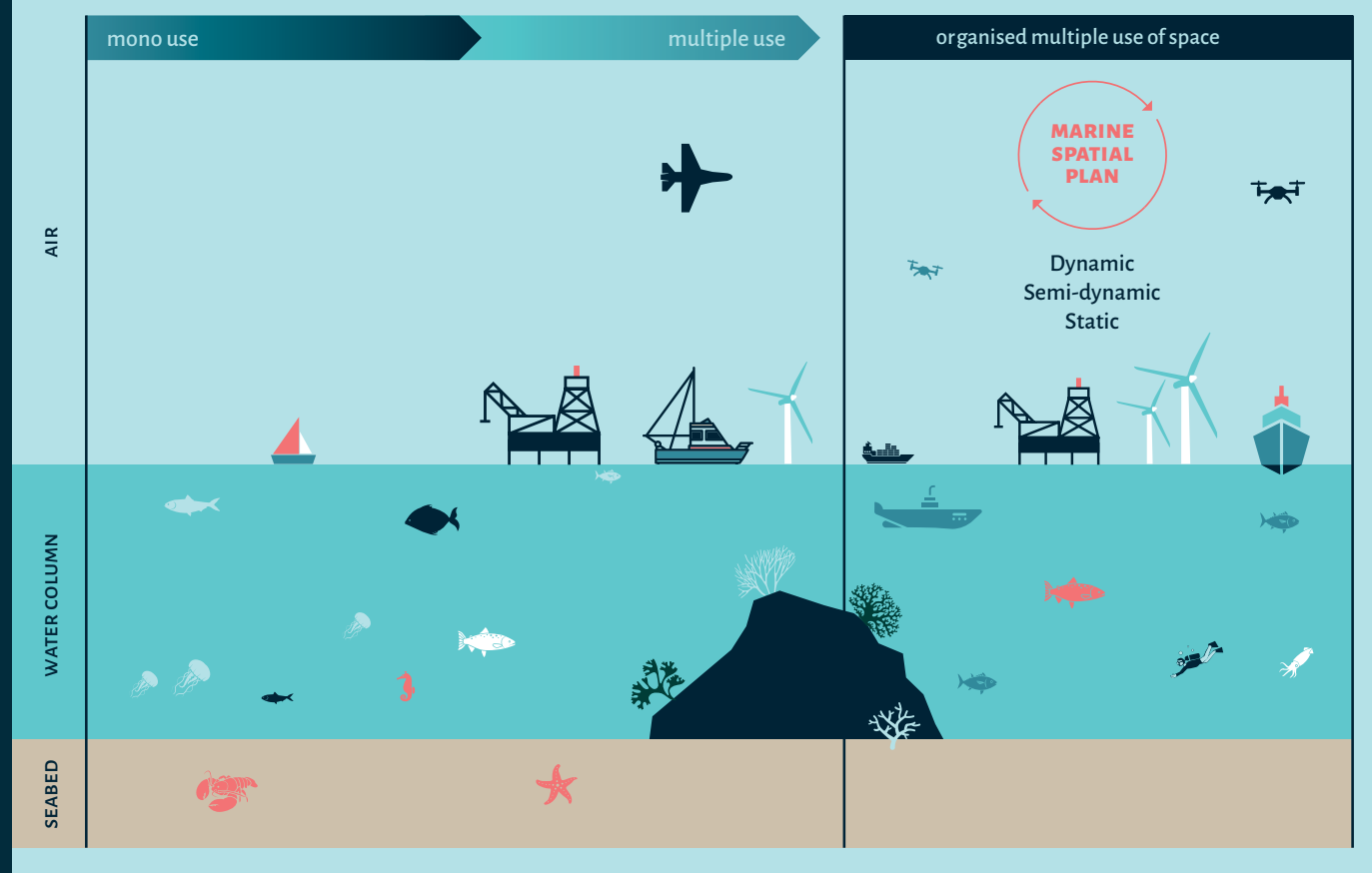
The current technological innovations bring a cascade of innovations in economic sectors and also give cause for important social innovations (e.g. social media and social repercussions), and policy innovation should take account of this. Today's pioneers (e.g. offshore energy) are the mature industries of tomorrow. Belgium and its industry possess vital strengths which enable them to play a significant part in international markets. Adapted and innovative technologies demand specialist knowledge that is gained through adapted training packages. Education must also evolve in order to continue to meet the need for new job profiles.

SECTOR	TRENDS
RENEWABLE ENERGY	Demand for offshore test zones Scaling up and combination with wind, wave and tidal energy Intensified international cooperation / North Sea network Interconnectors to have a role in energy storage Multifunctional wind farms (aquaculture, storage etc.) High voltage platform in sea for MOG Expansion of MOMG with offshore AC/DC conversion stations.
SEAWALLS AND COASTAL DEFENCES	Gain clarity on how future seawalls will look and what they can be used for multiple use of space.
FISHERY AND AQUACULTURE	Sustainable low-impact fishery focused on quality fish Technological possibility of 'fishing on demand' with short chain to customer Use of collective, sophisticated data integration and modelling Commercial aquaculture in multiple use of space with other functions.
SAND EXTRACTION	With an annual increase of 6%, 8.75 million m³ sand per year needed in 2050 (without additional large-scale requirements) Better knowledge of sediment dynamics and balances can benefit optimisation.
TRANSPORT	Larger energy-efficient ships Additional channel in front of Antwerp port? Spatial expansion possible for ports of Zeebrugge and Ostend Challenge around 'estuary shipping' to/from Zeebrugge Logistical chains in ports are automated, robotised and more efficient Nautical and logistical data is collected in "maritime logistics cloud".
RECREATION	Enjoyment of countryside, sport and relaxation remain central Beach and sports clubs must continue to invest and diversify in order to maintain customer base.
KNOWLEDGE	Smart monitoring and observations thanks to more sophisticated sensors and data systems Ships fitted with sensors to measure a range of parameters Central databank freely available Role of universities and knowledge centres remains essential.
POLICY	Ecosystem approach is guiding principle Participatory and adaptive.

TABLE 3

Some trends and tendencies up to 2050.

## MULTIPLE USE OF SPACE



### 6.3. BY 2050 THE PRINCIPLE OF MULTIPLE USE OF SPACE WILL BE THE NORM FOR ALL USES OF SPACE WITHIN THE BNS

Aiming for the desired level of naturalness will lead to healthy ecosystem services, which benefit social welfare and promote prosperity in general.

The current demand for space at sea within which these services develop gives rise not only to tensions but also opportunities, which support the demand for multiple use of space.

#### A. FORMS OF MULTIPLE USE OF SPACE

We distinguish three forms of multiple use of space:

- 1 | **Dynamic:** in which activities only use the space temporarily e.g. shipping.
- 2 | **Semi-dynamic:** between a static item and a mobile user e.g. between a marine protected area and recreation.
- 3 | **Static:** such as the concession zone for renewable energy.

The area of tension between the various user functions in the BNS can be resolved by implementing these forms of multiple use of space efficiently and thoughtfully. The Belgian sea regions, especially the coast, have enough zones where the offshore open space can remain exempt as much as possible. The impact of the activities on the landscape is therefore an ongoing point to watch when allowing MUS to develop at sea.

**Single and multiple use** of the sea are only permitted if:

- There is little or no negative impact, demonstrable by an assessment of effects per use of space including the cumulative impact on MUS, also outside the existing nature reserves.
- It involves renewable natural resources.
- The use of space is optimised both functionally and climatologically.
- The use of space fits within a **circular economy**.
- A risk analysis is made, taking into account all safety aspects.

In the case of every (existing and new) activity within the BNS, we must consider whether it should take place within a specific demarcated zone (static approach) or every place that meets previously arranged criteria (dynamic approach).

The principle of the **circular economy** is applied to the materials used, i.e. spatial decisions that ensure the safety and recyclability of the products and maintain the usability of the infrastructure from which they are built in certain circumstances. This can mean using infrastructure that remains functional for another use after the termination of the original use, including on land.

## B. THE PRINCIPLE OF MULTIPLE USE OF SPACE IN 2050

Multiple use of space should lead to:

- A considered **four-dimensional use of space** for the sea
- **Transnational and cross-border partnership** in economic, ecological, sectoral and scientific areas
- The creation of **economic value added through partnership** between various actors at sea
- **The maintenance, development and restoration** of the ecosystem or sub-ecosystems and related functions
- Optimum harmonisation of the **interaction** between land and sea.

with the aim of:

- Ensuring the use of the sea for **future generations**
- Being able to anticipate potential **threats** so as to ensure safety for nature, shipping, coastal residents, etc.

# 7

## GOOD GOVERNANCE

The core principles defined above can only be developed and applied if future policy integrates them adequately into the political decision-making process.

In order to continue to safeguard the future of our BNS, we need an **adaptive, transparent and participatory policy**, with management structures that handle the rapidly developing innovation processes flexibly.

### A. TRANSPARENT, ADAPTIVE AND PARTICIPATORY MANAGEMENT OF THE BNS

A **transparent** policy is based on scientific knowledge, deals carefully with gaps in knowledge and uncertainties and is broadly supported.

This policy must be able to adapt quickly and **flexibly** to evolutions and developments, without endangering the legal certainty required for investment and industrial developments.

The policy must also be **participatory**, asking for cooperation and advice when needed, open to new criticisms and needs where desirable. Social welfare and general prosperity should always be foremost.

### B. ESSENTIAL TASKS OF THE POLICY UP TO AND DURING 2050

#### BI. CORE TASK 1: INVEST FULLY IN GATHERING AND DISTRIBUTING KNOWLEDGE

The development of a **central databank** that is fed information, data and studies from private, public, industrial and sectoral research is a priority. The data from this databank must be accessible by the public as much as possible. It is therefore important that we invest further in **digitisation**.

Gaps in knowledge and uncertainties must be identified and filled where possible. Foreign expertise and developments should also be considered. The optimum use of monitoring budgets and collaboration between the various knowledge centres is essential to this.

Knowledge centres, universities and research centres all have an important role to play, not only by supplying knowledge but as a conduit to future generations. These future generations must be made aware of the North Sea as a unique source of various ecosystem services. New technological developments demand other –specific– functions, profiles and requirements to which the education sector must be able to respond quickly.

**BII. CORE TASK 2: CREATING ADDED VALUE BY WORKING WITH NATURE**

Distinct from the *building with nature* principle, in which nature is utilised, the *working with nature* principle means that in the case of maritime (infrastructure) developments, the socio-economic objectives are always combined with the **creation of added value** in ecological, physical and social terms. Developments in accordance with the ‘*working with nature*’ principle should always be inherently sustainable, as they take natural processes as starting points and/or provide opportunities for natural development on commencement of the design plans. Here the integrated added value of the ecosystem services provided is included as much as possible throughout the project developments.

In the case of all future developments in the BNS and on the beaches, we should aim to work according to this ‘*working with nature*’ philosophy in order to make mitigation and retroactive restoration unnecessary.

**BIII. CORE TASK 3: STRIVING FOR NATIONAL AND TRANSNATIONAL CROSS-BORDER PARTNERSHIP**

The key term in forming a participatory policy at the various administrative levels and transnationally, is **cross-border partnership**.

For example, an objective may be a single marine spatial plan for the entire North Sea, drawn up in a single planning process or through far-reaching harmonisa-

tion of the various national planning processes, with rationalisation of the spatial use a priority.

- Proactive and dynamic planning techniques must be developed. This requires:
- A shift from two-dimensional maps to the importance of a set of four-dimensional observation and prediction tools.
  - Intensive partnership between the North Sea countries in order to develop and manage a suitable ocean observation and research structure collectively.
  - Intensive scientific partnership across borders in order to develop common standards, methods etc.
  - Developing a very good cross-border observation and monitoring system that encourages proactive and dynamic management.

We must also work on 100% harmonisation of the planning zones on land and sea, between the land activities that involve the sea and vice versa. Here too, efficient partnership at management level is essential and we must constantly assess whether a certain activity is best organised on land or at sea. The nature of the activity should be the deciding factor, not the available space.

International, European and national regulations must be continuously tested for their necessity in achieving the set goal. It must be possible to deal with any regulatory setbacks quickly.

**BIV. CORE TASK 4: AN ADAPTIVE POLICY DEMANDS ADAPTED AND TRANSPARENT PROCEDURES**

As we have established, there are **no private property rights** to space at sea. This space falls under the responsibility of all and is public property. In order to allocate the use of the scarce space at sea as well as possible within a certain sector or area, adapted and transparent competition procedures must be developed. It is important that social welfare is a priority when assessing costs and benefits each time.

The necessary attention must also be paid to safety in its broadest sense when allocating permits. Multiple use of space will form one of the main **award criteria**.

Furthermore, as described above, the current **MER tool** must be thoroughly **evaluated**. If necessary, it must be adapted to an integral test framework in order to

objectively distinguish between activities with a significant impact (= macro-impact) and those with an expected minimal impact (= micro-impact).

The availability of such an **integral test framework** can help in establishing the effects of management measures and enables us to limit the impact to an acceptable level during the design phase (e.g. waste management plan). A second objective of the revision of the test framework is focused on **finding opportunities for positive impacts**, instead of the current focus on recording the negative impacts.

#### BV. CORE TASK 5: ENFORCEMENT POLICY: PROPORTIONATE MEASURES AIMED AT LEGITIMATE OBJECTIVES

Defining and striving for the desired naturalness and ‘*working with nature*’ should also go hand-in-hand with the enforcement of the (adapted) environmental and maritime regulations on land and at sea, taking into account the fact that these environmental regulations evolve with future insights, opportunities and challenges regarding the North Sea.

The competent enforcement services must therefore also be sufficiently practised in order to take action against breaches of environmental and maritime legislation. Specialised training courses must be created and provided within the new management structures.

When developing new policy lines, an efficient system of administrative sanctions will play a crucial role in combating impunity.

# 8

## AFTERWORD

This North Sea 2050 Long-Term Vision explains the core principles, which should be considered essential in order to still be enjoying all our North Sea has to offer in 2050 in terms of economy, culture, nature, recreation etc.

This vision text has only been possible thanks to the effort and cooperation of stakeholders, interested parties, organisations, administrations and citizens, who all have one thing in common: love for our North Sea.

One of the main conclusions from the process that preceded the development of the text is the great benefits that can be found in the **broad representation in the core working parties** and the **opportunities for harmonisation between stakeholders from various fields**. In that regard, this process can certainly be considered an example of good practice in order to streamline other policy processes through a similarly participatory and scientifically-founded approach.

The rapid developments taking place in, on and around the North Sea have given me, as State Secretary for the North Sea, cause to decide that the right thing to do is to continue the unique dynamic that was created during this process.

In consultation with OD Natuur/KBIN and the VLIZ I have decided to establish the **ThinkTankNorthSea**<sup>9</sup> with three objectives:

- Increasing support for and harmonising themes relating to the North Sea
- A breeding ground for vision development with regard to the North Sea
- The formulation of scientifically-founded advice for themes relating to the North Sea.

<sup>9</sup> For more information, see [www.thinktanknorthsea.be](http://www.thinktanknorthsea.be)

The intention is to launch an annual call for themes via the website and mailings and to set up working parties around the selected themes, or organise workshops, study afternoons and/or other events.

I have released an initial budget for the running of this think-tank and OD Natuur/KBIN and the VLIZ will also contribute by supplying personnel in kind.

As State Secretary for the North Sea it is my duty to develop and implement a well-thought-out policy. As a scientist, I can only base this policy on scientific knowledge and objective substantiation. It is therefore my greatest desire that future policymakers continue to guide the decisions around our beloved North Sea down the path that we have taken with this vision text.

I therefore cordially invite everyone to continue their commitment to our North Sea, for together we know more, and a sea of knowledge leads to an ocean of opportunity for a sustainable blue future.

Philippe De Backer  
*Secretary of State for the North Sea*





[www.thinktanknorthsea.be](http://www.thinktanknorthsea.be)