

# NbS principles for MANABAS Coast

Part of the MANABAS Coast  
mainstreaming framework

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# Introduction

The European Commission<sup>1</sup> defines Nature Based Solutions (NbS) as solutions that are ‘inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience’. Within the Interreg MANABAS (MAInstreaming NATure BASed) Coast project we aim to enhance the uptake of NbS within the North Sea region (NSR). While each partner has its own unique challenges, there are also a lot of similarities which are applicable to each situation and stakeholder. One of these similarities are the underlying principles that apply to all projects while working with NbS. A lot of NbS principles are already available in literature, but within the MANABAS Coast consortium we have not yet defined a common language on this topic.

During the MANABAS Coast partner meeting in march 2024 in Bruges, a workshop was organized on NbS principles as part of Work package 1 (WP1) the Framework development team. NbS principles (Box 1) are part of NbS fundamentals and common language on NbS, and are an essential component of the generic approach & leading principles sphere (Figure 1). The goal of defining this common language and shared principles on NbS is to establish a mutual understanding between partner organizations within MANABAS Coast on the topic of NbS. For instance, what is the definition of NbS? Which goals do NbS serve? What do we define as mainstreaming? The goal of this workshop was to define NbS principles that align with the MANABAS Coast philosophy on NbS. This document provides an overview of the outcome of the workshop and the approach that was followed to come up with the NbS principles applicable for all partners within MANABAS Coast.

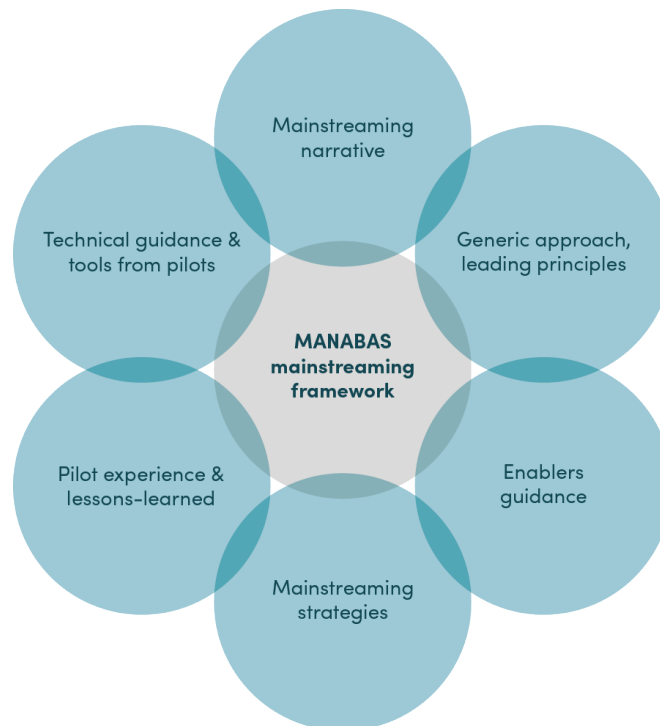


Figure 1. Outline of the framework on mainstreaming NbS that is currently being developed within MANABAS Coast as part of WP1.

### Box 1. What are NbS principles?

Principles are ‘a basic idea or rule that explains or controls how something happens or works.’<sup>2</sup> Within the context of NbS, principles set the boundary conditions on how to implement NbS. Another way of saying it: principles define the approach to achieve the NbS objectives. For instance: NbS provide societal benefits as well as ecosystems services. These principles reflect the (tactical) goals behind NbS implementation.

<sup>1</sup>European Commission, visited on 28-03-2024: [https://rea.ec.europa.eu/funding-and-grants/horizon-europe-cluster-6-food-bioeconomy-natural-resources-agriculture-and-environment/nature-based-solutions\\_en](https://rea.ec.europa.eu/funding-and-grants/horizon-europe-cluster-6-food-bioeconomy-natural-resources-agriculture-and-environment/nature-based-solutions_en) 2

<sup>2</sup>Cambridge dictionary, visited on 30-4-2024: <https://dictionary.cambridge.org/dictionary/english/principle>

## Methodology

The development of the NbS principles for MANABAS Coast is based on a two-step approach. The first step included the organization of a workshop on NbS principles during the Bruges partner meeting. During this workshop, partner organizations in MANABAS Coast were challenged to define their own set of NbS principles for MANABAS Coast. As a starter two examples were given: NbS principles by the International Union for Conservation of Nature (IUCN) and NbS principles from the Integrated System-Based Asset Management (ISBAM) framework (Table 1). As a way of structuring, NbS principles were categorized based on the three 'systems' defined within WP1 by the partner organizations: natural system, social system and governance system (Figure 2). These three systems are based on the six EcoShape enablers. These systems play an important role within the Framework on mainstreaming of NbS that is now being developed within MANABAS Coast (Figure 1). The result of the first step is an overview of all NbS principles for MANABAS Coast categorized by the three systems.

The second step took place after the Bruges meeting. In step 2, the WP1 team analyzed the NbS principles defined by the MANABAS Coast partner organizations and identified keywords (Step 2-A). The NbS principles by the IUCN were taken as a base to derive NbS principles for MANABAS Coast by the WP1 team in order to focus on application for coastal management. This approach is applied because several partner organizations mentioned during the workshop that the NbS principles by the IUCN are the standard NbS principles that are applied within their own organization. To conclude step 2, the new NbS principles for MANABAS were categorized within the three systems approach (Step 2-B).

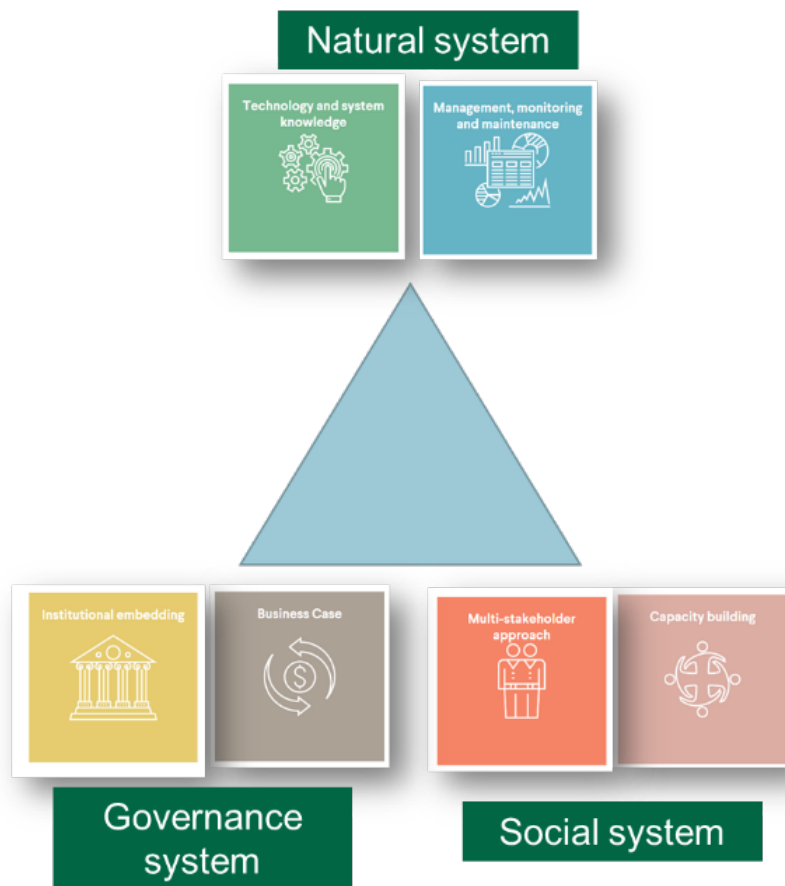


Figure 2. Three enabler systems for overcoming challenges in mainstreaming NbS: natural system, social system, and governance system. (adopted from Ecoshape)

Table 1. Two examples of NbS principles by IUCN (left column) and ISBAM (right column).

NbS principles IUCN	NbS principles ISBAM
Embrace nature conservation	Acts at a landscape scale, including both the natural and socio-economic system
Can be implemented with other solutions to societal challenges	Integrates management of multiple assets and functions within the landscape system context
Are determined by site-specific natural and cultural contexts	Embraces and leverages upon the natural dynamics of the system, providing resilience and adaptability towards future (climate change) related challenges.
Maintain biological and cultural diversity	
Produce societal benefits in a fair and equitable way	
Are applied at a landscape scale	
Recognize and address the trade-offs between immediate economic benefits for development, and future production of ecosystem services	
Are an integral part of the overall design	

## Results

### Step 1.

The results of step 1 are shown in Table 2. This table represents an overview of all NbS principles defined by MANABAS Coast partner organizations during the workshop (Appendix 1). Note: not all principles are shown in Appendix 1; this was a summary of the main findings on NbS principles.

### Step 2-A.

As part of step 2, these principles are analyzed by the WP1 team and keywords are marked in bold (Table 2). Examples of these keywords include

- Systems approach
- Natural dynamics
- Future generations
- Adaptive planning (flexibility)

Table 2. Overview of all NbS principles defined by MANABAS Coast partner organizations and categorized by using the three systems approach. Keywords defined by WP1 team are in bold and blue.

NbS Principle	System		
	Natural system	Social system	Governance system
Maintain ability to evolve ecosystem			
Make use of / leverage natural dynamics			
Allow for and <b>embrace natural dynamics</b>			
Make use of <b>time and spatial scales</b>			
Minimize need for continuous management and maintenance			
<b>Combine functions</b>			
Work at landscape / <b>system-scale</b>			
Embrace the functioning of ecosystem			
Ecosystem-based approach			
Make use of site-specific materials			
Site-specific design			
<b>Integrated design</b>			
Contribute to landscape and biodiversity			
Interconnectivity in habitat (allow species and communities to follow shifts in climate change)			
Allow natural dynamics & <b>adaptive planning (flexibility)</b>			
Social context sets the stage for NbS implementation			

Address societal challenges			
Provide <b>multiple benefits for society and nature</b>			
Think in long term benefits			
Integral approach from start to end			
Ecosystem approach for <b>future generations</b>			
Involve stakeholders in management & maintenance			
<b>Involve stakeholders from start to end</b>			
Make room for stakeholders to let them tell their stories			
Include economic benefits			
Address societal challenges			
Consult and involve stakeholders			
Mindful conservation (trigger positive emotions)			
Include habitats (plants, animals) as stakeholders			
Public acceptance and understanding			
<b>Common / integral management plan</b>			
Accept dealing with uncertainty			
Set up multilevel government & intergovernmental collaboration			
<b>Integrated design of policy</b>			
<b>Transparency in decision making</b>			
Provide <b>sustainable management of ecosystems</b>			
Adaptive strategic planning			
NbS are site-specific			
NbS are long-term no regret solutions			
Minimize need for continuous maintenance			
Use a <b>systems approach</b>			

### Step 2-B.

These keywords together with the IUCN principles (Table 1) form the base for defining the NbS principles for MANABAS Coast (Table 3). As a final step, the new MANABAS principles were also categorized based on the three systems.

Table 3. Definition of NbS principles for MANABAS Coast, and categorization of MANABAS NbS principles based on the three systems.

#	NbS principles MANABAS	System		
		Natural System	Social System	Governance System
I	Embrace natural dynamics on different temporal and spatial scales			
II	Apply a holistic systems approach to address ecological, institutional and societal challenges			
III	Combine multiple functions and provide benefits for people and nature for present and future generations			
IV	Involve stakeholders throughout the entire project, ensuring transparency, commitment, and shared ownership			
V	Support adaptivity in management, maintenance and practice			

## Conclusions

NbS principles for MANABAS COAST are jointly defined by the partner organizations. To provide a structure, these principles are categorized based on the three systems approach (natural, social and governance). Based on the feedback from the MANABAS Coast partners, the internationally recognized NbS principles from the IUCN are adapted to define NbS principles for MANABAS. The following NbS principles are identified:

- Embrace natural dynamics on different temporal and spatial scales
- Apply a holistic systems approach to address ecological, institutional and societal challenges
- Combine multiple functions and provide benefits for people and nature for present and future generations
- Involve stakeholders throughout the entire project, ensuring transparency, commitment, and shared ownership
- Support adaptivity in management, maintenance and practice

These principles are considered the best reflection of the approach that is needed for our partners within the North Sea Region to mainstream NbS, leading to a sustainable and resilient coastal zone.

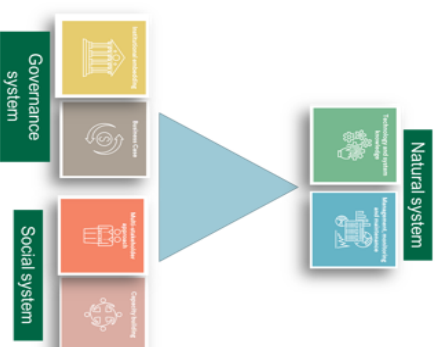
# Conclusions Nbs principles

## Group 1 (Stefan & Nils)

- Maintain ability to evolve ecosystem [Nature]
- Make use of / leverage natural dynamics [Nature]
- Make use / Consider time and spatial scales [Nature]
- Minimize need for continuous management and maintenance [Nature]
- Combine functions / Multifunctional w.r.t. integrated design i.e. combine nature restoration & coastal protection [Nature]

## Group 3 (Quirijn)

- Functioning of ecosystem [Nature]
- Landscape scale [Nature]
- Make use of existing materials, but reform to what we use
- NBS are place-based. The design of a NBS is bound site-specific.



- Common management plan – working together [Social, Governance]
- Accept dealing with uncertainty when using NBS [Governance]
- The long-term aspect, multiple benefits [Governance]
- Set-up multilevel government & intergovernmental collaboration [Governance]
- Integral design of policy >> [Governance]
- Transparency in decision making [Governance]
- Involve stakeholders in management & maintenance (from start to end) [Social]
- Make room for stakeholder to let them tell their stories [Social]
- Include economy i.e. recreation [Social]
- Address societal challenges [Social]
- Public acceptance and understanding [Social]
- Favor for IUCN principles & Use principles to check if Nbs is a NBS.**
- Favor for IUCN**

## Group 4 (Matthijs)

- Integral approach from the beginning (nature, society) throughout the whole project [Social]
- Ecosystem approach for multiple generations, also for economics and engineering.
- Prevent a lock-in [Governance]
- Allowing natural dynamics & adaptive planning [Nature]
- Multiple generations [Social]

## Group 2 (Jurje)

- Contribute to landscape and biodiversity
- Social context set stage for Nbs implementation
- Think in long term