



**DIRECTORATE-GENERAL FOR PLANNING HOUSING  
AND NATURE**

**DIRECTORATE OF WATER AND BIODIVERSITY**

**SOUS-DIRECTORATE FOR THE PROTECTION AND RESTORATION OF COASTAL AND  
MARINE ECOSYSTEMS**

**STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE SEA  
BASIN STRATEGY DOCUMENT  
NORTH ATLANTIC – WESTERN CHANNEL**

**OPERATIONAL SIDE OF THE DSF**

Environmental report  
submitted for consultation

February 2021



Évaluer les Politiques et Innover  
pour les Citoyens et les Espaces



## Contents

|   |     |
|---|-----|
| 1. Non-technical summary  | 2   |
| 2. Introduction   | 17  |
| 3. Brief presentation of the SBSD and the context in which it was developed                     | 22  |
| 4. Coastline environmental issues   | 38  |
| 5. Impact analysis  | 69  |
| 6. Analysis of the measures taken to Avoid, Reduce and Compensate - ERC - environmental impacts | 109 |
| 7. Impact monitoring indicators   | 113 |
| List of annexes   | 119 |

# 1. Non-technical summary

## INTRODUCTION

Sea Basin Strategy Documents (SBSDs) must be subject to an impact assessment, as mentioned in Article R122-17 of the French Environment Code.

The purpose of this environmental assessment is to ensure the relevance of the choices made with regard to environmental issues by assessing the positive, uncertain and negative impacts in a predictive manner, and by proposing, where appropriate, measures to avoid, reduce or compensate for negative impacts. This assessment was carried out by a group of independent consultancies, responsible for producing the report, and monitored by a steering committee made up of the MTES, the four DIRM and the public establishments providing scientific and technical support for the preparation of the SBSD (OFB, IFREMER and CEREMA).

The particular context of the development of the SBSD gives this SEA certain specificities:

- (1) it concerns a strategic document in the field of sustainable development at sea, which therefore pursues environmental objectives. As a result, the initial state of the environment and the objectives to be achieved in this area are consubstantial with the DSF, through its marine environmental component, constituted by the MMAP (Marine Action Plan);
- (2) it is part of an iterative consultation process, because the SBSD is involved in the implementation of two European directives that do not have the same precedent;
- (3) the fact that the SBSD was developed in two stages – strategic and then operational – each of these is subject to an environmental assessment, and the one for the operational strand, which is the subject of this report, benefits from the feedback of the Environmental Authority (EA) on the earlier one for the strategic strand.

This environmental report was produced between October 2019 and January 2021, with three main methodological approaches, largely inspired by the EA's opinion on the environmental assessment of the strategic section:

- a more precise assessment of the significant effects of the SBSD on the environment by:
  - (1) reinforcing the spatialisation of the analysis, (2) analysing more precisely and in a spatialised manner at the scale of each vocation zone, the situation of the different environmental issues with regard to the Good environmental status or in terms of level of issue and
  - (3) associating to the nature of the identified impacts a number of characteristics allowing a better comparison and analysis of them in a global way;
- a more integrated approach to environmental and socio-economic objectives by:
  - (1) seeking to analyse the overall impact of the SBSD actions through the way the actions have been organised in a combined manner in the Action Plan and through the links between the actions and (2) seeking to mobilise some of the results of the cost-effectiveness analysis and the analysis of the economic and social impacts of the proposed actions;
- an iterative approach integrated into the development process by: (1) providing for three successive iterations, each including an impact assessment and proposals for improving the way in which environmental issues are taken into account in the proposed actions and (2) developing tools and methods of representing impacts that allow for exchanges with the coastlines on the impact assessment of their action plan and for integrating changes to the action plan as they occur.

There are also four main limitations:

- (1) the existing uncertainties concerning, on the one hand, the assessment of the good status of many environmental issues and, on the other hand, the precise knowledge of the pressures exerted on the marine environment by many human activities;
- (2) the impossibility of "quantifying" the overall impact of the proposed action plan, as the different impacts can be counted and compared according to various criteria, but in no way sized in relation to each other;
- (3) the context of the health crisis in which the environmental assessment took place, which greatly hindered the iterative process that was a central methodological feature of the approach;
- (4) the same health crisis context has deeply affected many socio-economic activities in coastal areas, without it being possible to know to date whether this will constitute lasting disruptions or whether it will return to the pre-crisis situation, thus making it impossible to establish a trend scenario without SBSDs.

## BRIEF PRESENTATION OF THE SBSD AND THE CONTEXT IN WHICH IT WAS DEVELOPED

From a formal point of view, the French Environment Code stipulates (Articles R219-1-7 to R219-1-14) that the Coastline Strategic Document comprises four parts:

- the existing situation, the issues at stake and a draft vision for the future of the façade in 2030; (part 1)
- the definition of strategic objectives from an economic, social and environmental point of view and the associated indicators; they are accompanied by a vocational map which defines, within the maritime areas, coherent zones with regard to the issues and general objectives assigned to them; (part 2)
- the arrangements for evaluating the implementation of the strategy document; (part 3)
- the action plan. (part 4)

Parts 1 and 2 of the Coastline Strategic Document constitute the "**Maritime Coastline Strategy**", which was drawn up in 2018 and was the subject of an initial strategic environmental assessment. Following consultations, this Maritime Coastline Strategy was officially adopted in each coastline in September/October 2019.

Parts 3 and 4, namely the monitoring mechanism and the action plan, constitute the **operational part** of the DSF. The latter was developed between October 2020 and January 2021 and is the subject of a second strategic environmental assessment of the DSF. **This report concerns this second SEA and therefore focuses on the operational part of the DSF.**

**The Sea Basin Strategy Documents are the result of two directives:**

- **The Marine Strategy Framework Directive** (Directive 2008/56 of 17 June 2008), which aims to restore or maintain the good environmental status of the marine environment by 2020. For example, Member States must draw up Marine Action Plans to be reviewed every six years.

- **The Maritime Spatial Planning Framework Directive** (Directive 2014/89 of 23 July 2014) which establishes a framework for maritime planning and requires Member States to ensure coordination of different activities at sea. Thus, by 2021, they must develop plans that identify the spatial and temporal distribution of relevant, existing and future activities and uses in their marine waters.

**As such, they include the elements of maritime spatial planning and the marine action plan.**

The SBSD is drawn up under the guidance of the coordinating prefects: the maritime prefect and the regional prefect coordinating the coastline. This prefectural pairing is based on a façade administrative commission, the composition of which is set by inter-prefectoral order 49/2016 of 9 June 2016, and on the Conseil maritime de façade (CMF), a consultation body provided for by Article L.219-6-1 of the French Environment Code, which has been in place for each coastline since 2010. The mission of the CMF is to facilitate the coordination of the use, development, protection and enhancement of the coastline and the sea, in consultation with all governance actors.

The drafting of the SBSD is therefore part of a methodology for maritime and coastal spatial planning. The Interregional Directorate for the Sea (DIRM) is responsible for steering the project.

At the national level, coordination is ensured by the Délégation à la Mer et au Littoral (DML) and the Direction de l'Eau et de la Biodiversité (DEB), services under the authority of the Ministries of the Sea and of Ecological Transition.

With regard to the development of the operational strand in particular, the following should be highlighted:

- that the process of developing environmental actions and socio-economic actions has some differences, both in method and timing. The main one is that the development of environmental actions is steered at the national level (DEB), whereas the socio-economic actions are steered by the DIRMs;
- that the integration of the different actions into a single action plan was mainly the responsibility of the DIRMs, with the national steering committees dealing little with this issue.

Finally, a special effort has been made to link the development of maritime strategies with the water development and management master plans (SDAGE). This document also identifies other documents with which the SBSD should be linked.

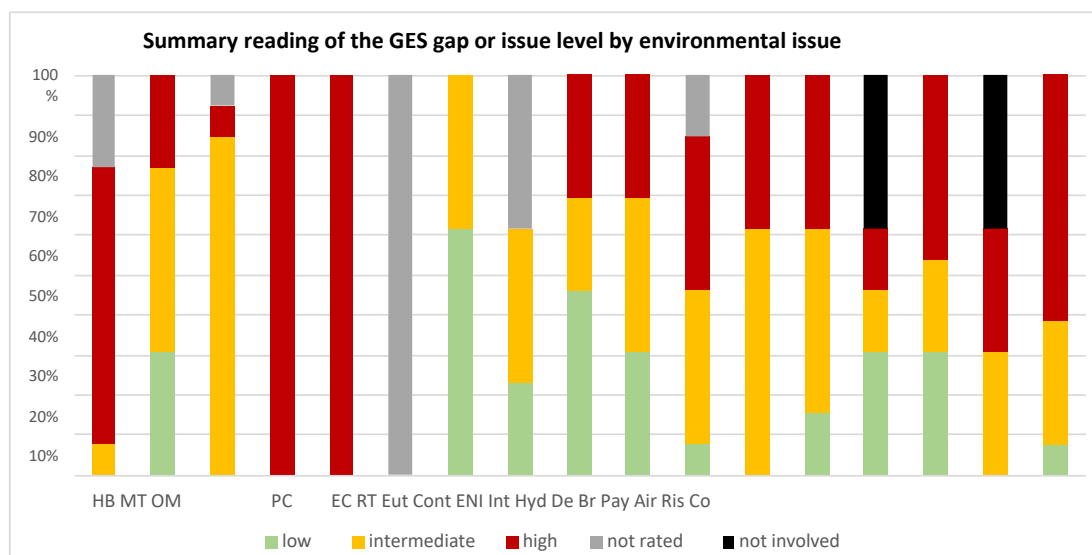
## COASTLINE ENVIRONMENTAL ISSUES

Seventeen environmental issues were identified, based in particular on the descriptors of good environmental status (GES) as defined by the MSFD. They are presented in the table below.

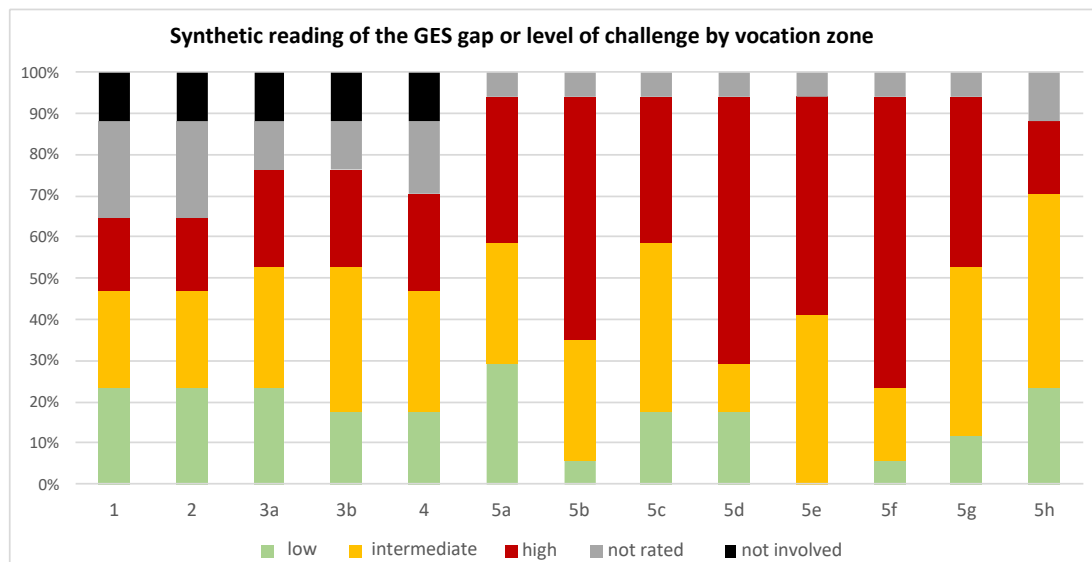
| Category of issues   | Acron. | Environmental issues                        | Correspondence to MSFD descriptors | Characteristic elements  |
|--|--------|---|------------------------------------|--|
| Issues related to the components of the marine environment | HB     | Benthic habitats                            | D1-HB                              | Quality of major biogenic, rocky, sedimentary, deep, wetland habitat types   |
|  | MT     | Mammals and turtles                         | D1-MT                              | Species distribution and abundance: home range of sedentary bottlenose dolphin groups, seal colonies, feeding areas, other cetaceans   |
|  | OM     | Seabirds                                    | D1-OM                              | Species distribution and abundance: nesting, feeding areas, colonies, wintering sites of seabirds and coastal birds, maximum density areas, functional areas   |
|  | PC     | Fish and cephalopods                        | D1-PC                              | Distribution and abundance of species: functional fishing areas (spawning grounds, nurseries), localised populations (benthic invertebrates, elasmobranchs), concentration and migration areas for amphibious fish |
|  | EC     | Commercial species                          | D3                                 | Stock status of commercially exploited fish and shellfish species  |
|  | RT     | Food webs                                   | D4                                 | Trophic balance  |
| Issues related to pressures on the marine environment      | NIS    | Non-native species                          | D2                                 | Non-native species that are invasive or disrupt ecosystems   |
|  | Eut    | Eutrophication                              | D5                                 | Human-induced eutrophication   |
|  | Int    | Integrity of funds                          | D6                                 | Integrity of the seabed and artificialisation of the coastline   |
|  | Hyd    | Modification of the hydrographic conditions | D7                                 | Hydrographic conditions  |
|  | Cont   | Chemical and biological                     | D8 and D9                          | Chemical contaminants in the environment, phycotoxins, microbiological contaminants  |
|  | From   | Waste                                       | D10                                | Amount of floating, shoreline, bottom, ingested waste and micro-waste  |
|  | Br     | Noise                                       | D11                                | Level of noise disturbance   |
| Other societal issues                                      | Pay    | Landscapes and seascapes                    | Not relevant                       | Elements of coastal (lighthouses, classifications) and underwater landscapes   |
|  | Air    | Air quality                                 | Not relevant                       | Greenhouse gases, air pollutants   |
|  | Ris    | Natural hazards and human hazards           | Not relevant                       | Climatic, natural and industrial risks   |
|  | Co     | Knowledge                                   | Not relevant                       | Production of knowledge on environments, species and socio-economic activities   |

For each of these 17 issues, the report presents: (1) a summary of their main characteristics on the coastline, (2) a summary of their current status, (3) a spatial analysis of the deviation from good status or the level of challenge at the scale of the vocation zones and (4) a summary of the links between anthropogenic activities and this status (main pressures of anthropogenic origin that can affect this status, on the one hand, and the degree of dependence of anthropogenic activities on this status, on the other).

The two graphs below present the synthesis of the spatial analysis carried out concerning the deviation from the GES or the level of challenge, the first one being a reading by environmental challenge and the second one a reading by vocation area.



The percentages are relative to the number of vocation zones (i.e. 13). For example: for benthic habitats, the GES deviation is high for about 70% of the vocation zones



The percentages are relative to the number of issues (i.e. 17). For example: in zone 5d, just over 60% of the issues have a GES deviation or a high issue level.

The most important issues for the coastline concern fish and cephalopods and commercial species, where the deviation from the GES is high for all areas of activity. The benthic habitats also show a high GES deviation, although it is still insufficiently assessed, especially in the most offshore areas. Finally, knowledge is at a high level, concerning all offshore areas but also some areas of the territorial sea. The issues of eutrophication and non-invasive species are less significant. It should be noted that food webs are the key issue

this is the environmental issue that will certainly require the most effort to assess in the future. In general, it should be noted that the reliability of the assessment of issues related to the biocenosis is generally less good than the reliability of issues related to pressures or other societal issues.

Offshore areas appear to have lower overall GES deviations or levels of concern than the territorial sea areas, but they are also less assessed or concerned. In the territorial sea, areas 5f, 5d and 5b present the most significant environmental challenges, particularly with regard to high levels of pressure.

## IMPACT ANALYSIS

### Situation in the absence of a SBSD

In order to try to clarify the evolution of environmental issues in the absence of a SBSD, one can try to analyse the trend of pressure-producing activities. The available data and indicators on the recent evolution of these activities have been researched and the synthesis that can be made in terms of trends is given in the table below.

| Activity                           | Past trends in the pressure of activity on the environment | Reliability of past developments<br>(most reliable level: +++) |
|------------------------------------|--|--|
| Beach activities                   | →  | ++   |
| Agriculture                        | ↘  | +  |
| Aquaculture                        | →  | ++   |
| Artificialisation of the coastline | ↗  | ++   |
| Underwater cables                  | ↗  | +  |
| Shipbuilding                       | ↗  | ++   |
| Defence                            | ↗  | ++   |
| Extraction of materials            | ↘  | +  |
| Industries                         | ↘  | +  |
| Recreational boating               | ↗  | ++   |
| Recreational fishing               | ↘  | ++   |
| Professional fishing               | ↘  | ++   |
| Energy production                  | ↗  | +  |
| R & D                              | →  | ++   |
| Coastal tourism                    | ↗  | +  |
| Maritime public works              | ↗  | +  |
| Maritime transport                 | ↗  | +++  |

Two important findings emerge from this table:

– on the one hand, the most important activities on the coastline had varying levels of evolution, some of which were declining (professional and leisure fishing, materials extraction), others increasing (maritime transport, energy production);

– on the other hand, the reliability of these trend estimates is not optimal, in the absence of an effective monitoring system for the evolution of pressures exerted by socio-economic activities, which has yet to be partly constructed (see impact monitoring indicators). It should be noted, however, that the NAMO coastline has a better level of reliability than the other façades due to the socio-economic summaries produced each year by activity from 2014 to 2018.



It could be deduced from the first observation that, in the absence of a SBSO, pressures will continue to be exerted on the marine environment and that the situation of a number of environmental issues is likely to continue to deteriorate. Such a forecast, based on a simple extension of recent trends, is nevertheless very risky, for at least three reasons:

- (1) a context that remains uncertain despite the Brexit agreement;
- (2) the health crisis experienced worldwide in 2020 has had a major impact on the dynamics of many economic activities (e.g. passenger transport), and it is very difficult to know today whether a return to the previous dynamics will take place or whether there will be a lasting break in the trend;
- (3) the level of uncertainty in the data and indicators mentioned above also makes this exercise of extending past trends very uncertain.

## Analysis of impacts on environmental issues

### *IMPACT OF THE DIFFERENT ACTIONS OF THE Action plan*

The main results of the analysis of the impacts of the actions at the level of the different parts of the action plan are summarised in the table below:

|  |   |
|--|---|
| Part I – A maritime identity anchored in the territory | <p>The analysis of Part I shows that the related actions of the plan are likely to generate around 59 potential impacts on environmental issues. Just over half (53%) are considered positive, 37% uncertain and 10% negative. This is the part of the plan with the most mixed picture in terms of impacts.</p> <p>With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 47% of the impacts concern issues related to the components of the marine environment, 31% concern issues related to pressures on the marine environment and 22% concern other societal issues.</p> <p>The issues most strongly concerned in this section are benthic habitats and fish and cephalopods (7 each) as well as seabirds and knowledge (5 and 6 respectively). Beyond that, many issues (11) are moderately affected (between 2 and 4 impacts per issue). Two issues are not concerned (eutrophication and risks).</p>   |
| Part II – A sustainable blue economy to be promoted    | <p>The analysis of Part II shows that the related actions of the plan are likely to generate around 86 potential impacts on environmental issues. Almost all (98%) are considered positive, this is a part of the DPA with a very high profile of positive impacts, which are also largely due to socio-economic actions.</p> <p>With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 57% of the impacts concern issues related to the components of the marine environment, 29% concern issues related to pressures on the marine environment and 14% concern other societal issues.</p> <p>The issues most strongly affected in this section are all the biocenosis issues (between 7 and 9 impacts depending on the issue) as well as pressures related to contaminants (9) and waste (8). Knowledge is also fairly well covered (6), as well as air (5) and even the integrity of the seabed (4). Two issues are not concerned (noise and risks).</p> |

|  |   |
|--|---|
| <p>Part III – A natural heritage to be enriched</p>                                | <p>The analysis of Part III shows that the related actions of the plan are likely to generate around 270 potential impacts on environmental issues. All of them are considered positive, which makes this part of the plan the one that contributes most to the positive impacts in view of its theme and the very many environmental actions that are linked to it.</p> <p>With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 62% of the impacts concern issues related to the components of the marine environment, 22% concern issues related to pressures on the marine environment and 16% concern other societal issues.</p> <p>The issues present impacts with a very sparse density (between 2 and 31 impacts). The issues most strongly affected in this chapter are all the biocenosis issues, with between 23 and 31 incidences depending on the issue (mainly PC, EC and RT). Some pressure-related issues are fairly well covered, such as contaminants (15) and seabed integrity (14) and to a lesser extent litter and hydrographic conditions (9 each). In the societal issues, knowledge is also very well covered (25) and to a lesser extent landscape (12).</p> |
| <p>Part IV – Sustainable and resilient development of marine and coastal areas</p> | <p>The analysis of Part IV shows that the related actions of the plan are likely to generate around 64 potential impacts on environmental issues. 83% are considered positive, but also 13% negative. Three impacts appear uncertain. This section has the highest profile in terms of negative impacts (in proportion), which is due to the development of aquaculture activity.</p> <p>With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 39% of the impacts concern issues related to the components of the marine environment, and then are divided equally between issues related to pressures and other societal issues (30% and 31% respectively).</p> <p>Societal issues are therefore particularly invested in this part, compared to the other parts of the action plan, and in particular risks and landscape. Knowledge is also relatively well invested, but this is the case everywhere.</p>  |
| <p>Part V – Research and innovation at the heart of the coastline's influence</p>  | <p>The analysis of Part V shows that the related actions of the plan are likely to generate around 113 potential impacts on environmental issues. Just over 75% are considered positive, and the remaining impacts are equally uncertain and negative. This section also has the highest absolute number of negative impacts (12). These are to be linked to research and innovation actions including experiments on MRE, aquaculture and ports.</p> <p>With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 41% of the impacts concern issues related to the components of the marine environment, 35% concern issues related to pressures on the marine environment and 24% concern other societal issues.</p> <p>All issues are concerned in this section, with priority given to knowledge (17). Next, issues related to the biocenosis stand out (between 7 and 9 incidences) as well as contaminants and waste for pressures, but not always positively given the profile of the section described above.</p>  |

### **CUMULATIVE IMPACT OF THE ENTIRE ACTION PLAN**

The environmental issues related to the components of the marine environment benefit from a high number of impacts, the majority of which are positive, but with a high proportion of medium to long-term occurrence and a high level of uncertainty. While the strong dominance of positive impacts, as well as the localised nature of negative impacts (MRE implementation areas, possible aquaculture development areas), lead to the conclusion that the action plan has a positive overall impact on them, it is

it is not possible to assess the extent of the problem and therefore the ability of the action plan to restore good environmental status. Moreover, these issues are not in the same situation with regard to the GES:

- three of them show a significant overall gap with the EEB which seems difficult to close at the scale of this first action plan (benthic habitats, fish and cephalopods, commercial species);
- the situation for seabirds is more favourable, and the action plan should at least support this, although the impact of future wind farms on migratory birds should be monitored with great care;
- the situation regarding marine mammals and turtles is also more favourable, although it varies greatly from one area to another. It is therefore more difficult to comment on the influence of the action plan on the achievement of the GES. Turtles are also not very present on the NAMO coast;
- for the last issue in this first group, food webs, the GES is not defined and the deviation from it not assessed, and it is therefore even more difficult to comment on the overall impact of the action plan.

On issues related to pressures on the marine environment, the impact of the FSD is expected to be less significant than for those in the first group, given the smaller number of actions impacting on these issues, although this smaller number is partly offset by a higher proportion of short-term impacts. Furthermore, the overall impact of the action plan is likely to be more or less strong depending on the different issues making up this second group:

- rather mixed on NIS, noise, hydrographic conditions and seabed integrity, which combine several actions with uncertain and negative impacts, with fewer positive impacts on these issues than on the others. The positive influence of the plan therefore seems rather modest on these issues, which could be problematic in view of their level of challenge, which is considered to be rather intermediate for offshore areas and high for areas in the territorial sea;
- rather modest for eutrophication, which has the fewest number of impacts, although none are negative. However, the NAMO seaboard is in a special situation because it is the only seaboard to have included a specific action dedicated to the issue of eutrophication in its programme: this action could thus have a positive impact on the reduction of nutrient inputs and their transfer to the marine environment, particularly in areas where the situation is unfavourable in this respect;
- more important for contaminants and waste, with a fairly large number of positive impacts despite the presence of some negative or uncertain impacts. This influence of the action plan, with a positive trend itself reinforced by synergies between actions, is all the more relevant as these two issues have fairly high levels of impact. Nevertheless, it is difficult to make a statement on the return to good status as it is not fully assessed.

The "Other societal issues" will all be positively impacted by the action plan insofar as it has a very high proportion of positive impacts on them and only one action could have a negative impact on the air quality issue. However, the overall effect of the action plan differs quite widely for each of these four so-called 'societal' issues:

- the action plan has a fair number of landscape impacts, the vast majority of which are positive. The overall effect will be all the greater if the actions with these impacts are targeted at the areas where the landscape issues are the strongest. In addition, attention should be paid to the uncertain impact on the landscape of large-scale wind farms and the development of aquaculture farms;

– the impacts on air quality and risks are much less. With regard to the fight against atmospheric pollution, it is not certain that the plan is equal to the challenges, which are quite high overall. With regard to the reduction of GHG emissions, it is difficult to give an opinion given the absence of a diagnosis of the initial situation. A potential increase in maritime traffic could also have a negative impact on these two aspects of the air quality issue. Finally, with regard to risks, the action plan could have a limited influence, although entirely positive, due to the high proportion of actions with a knowledge improvement value, whose more concrete effects on the issue (should be felt more in the next programme).

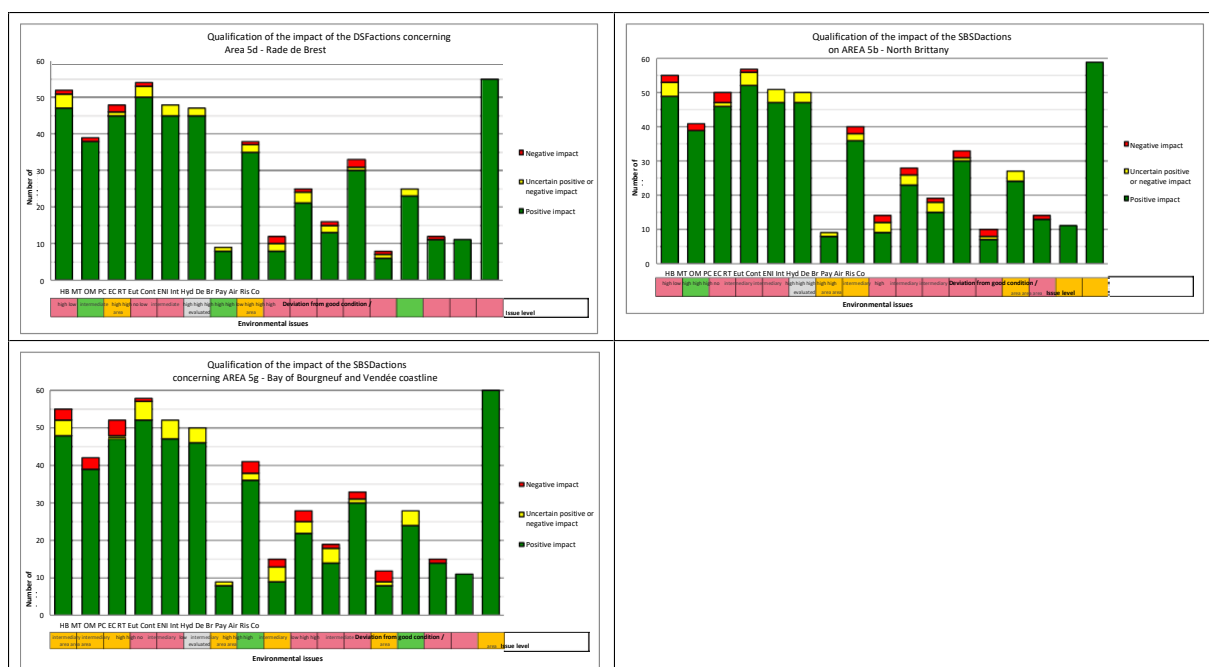
– Finally, the impacts on knowledge are numerous, all positive and mostly short-term. The action plan should therefore significantly improve the level of knowledge about the coastline, both in terms of its environmental components and its high-pressure economic activities, which is highly relevant given the existing uncertainties.

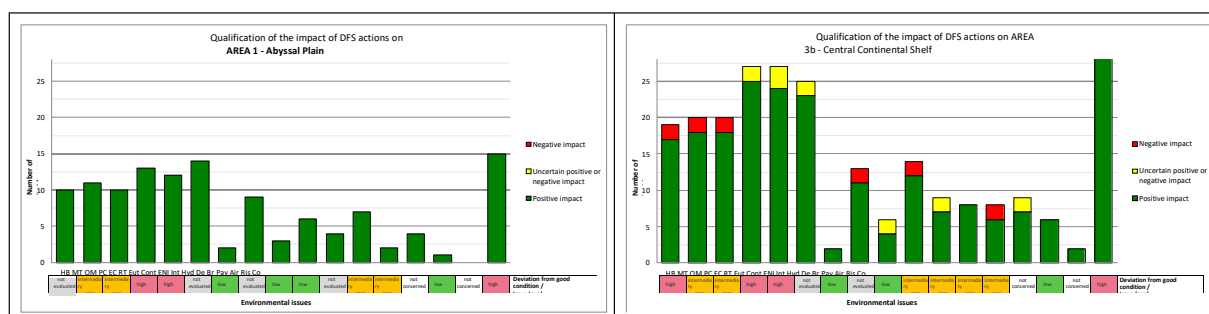
### SPATIALISED IMPACTS AT THE VOCATION ZONES LEVEL

With regard to the use areas affected by the impacts described above, two profiles of use areas can be distinguished: use areas located offshore and use areas located in the territorial sea. Indeed:

- the coastal areas all have a high number of impacts but within which three profiles can be identified: a more favourable profile (the lowest absolute numbers of impacts and proportions of negative impacts), an intermediate profile and a more unfavourable profile (the highest absolute numbers of impacts and proportions of negative impacts) (see below for an illustration of these three profiles, respectively Rade de Brest, Northern Brittany and Bay of Bourgneuf);
- the offshore areas have a much lower number of impacts, which can be linked to the lower overall stakes in these areas, but also less well assessed. However, the impact profile of the offshore areas is relatively different depending on the area (see illustration below on two offshore areas, Abyssal Plain and Central Continental Shelf).

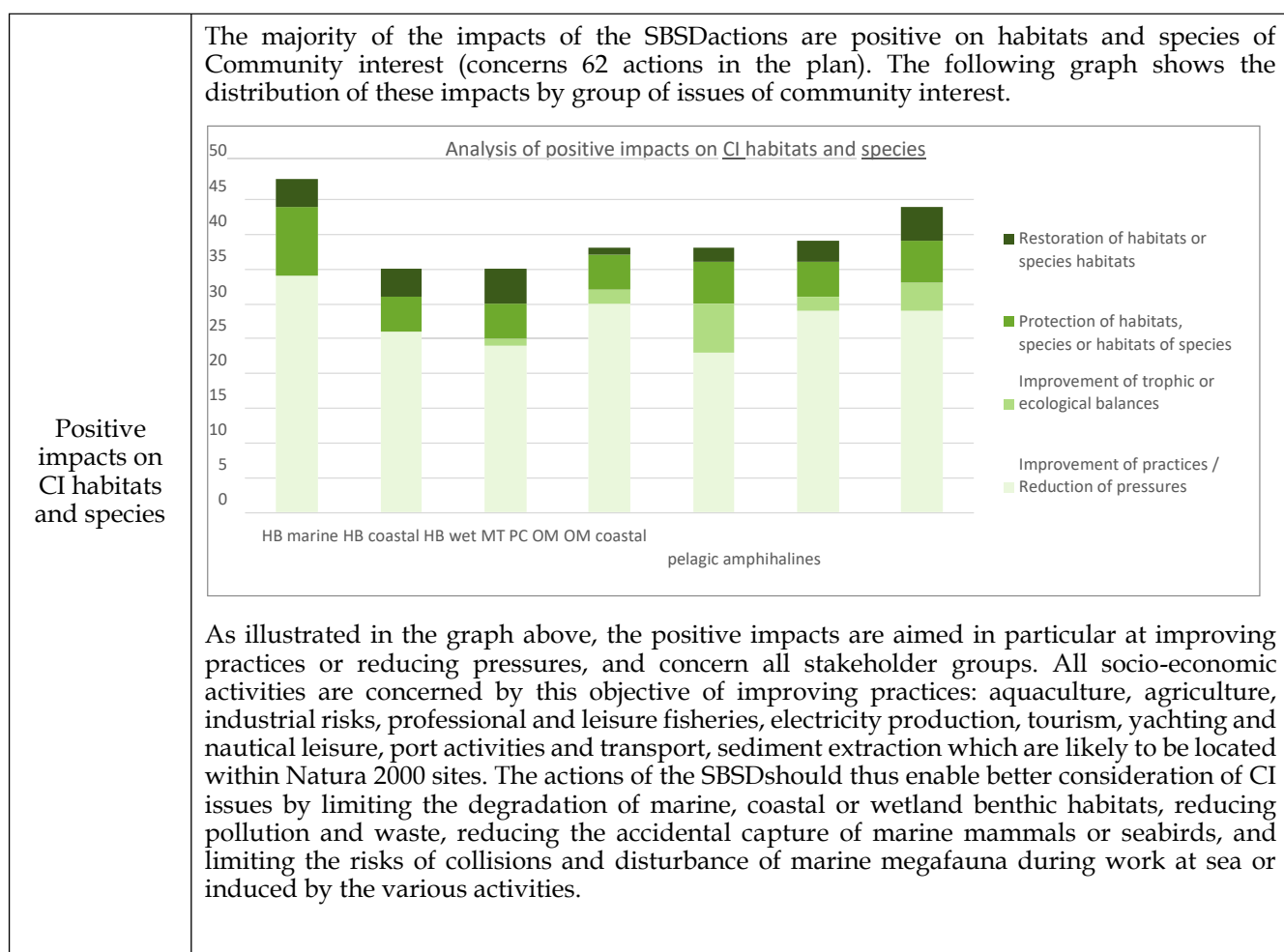
### Illustration: Impact profiles for three coastal and two offshore areas

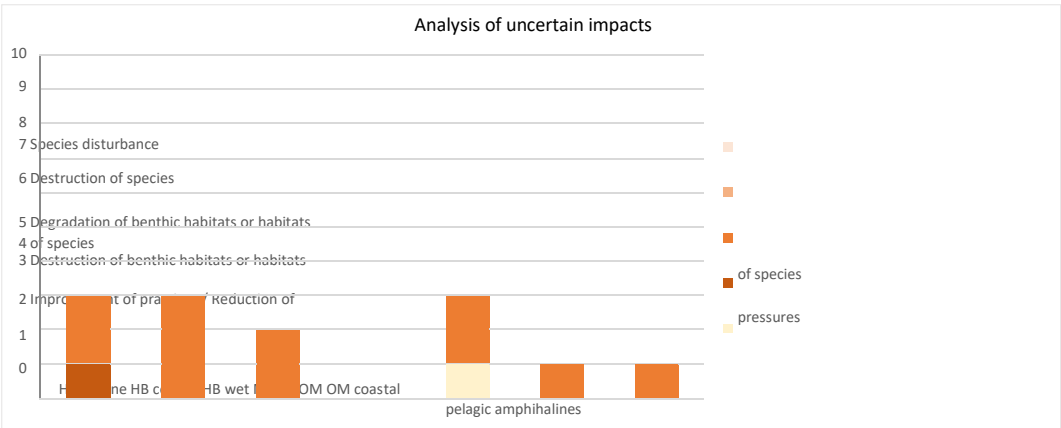
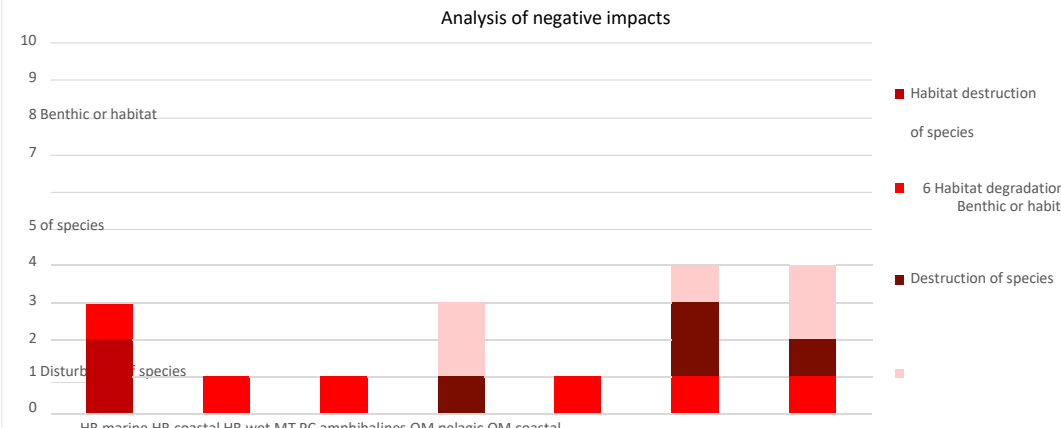




(details for all areas are given in [Annex 4](#) of the environmental report)

### INCIDENCES OF SBSD ON NATURA 2000 SITES OF THE COASTLINE



|   |   |
|---|---|
| <p>Uncertain impacts on CI habitats and species</p> | <p>Five actions may result in uncertain positive or negative impacts on CI habitats and species at this stage. The following graph shows how uncertain impacts are distributed across the CI issue groups:</p>  <p>Thus the uncertain impacts of the action plan are unlikely to be in the form of improved practices or reduced pressures (only the amphibian PC species). The nature of the impacts is otherwise mainly concerned with the degradation of benthic habitats and species habitats, and even potential destruction of marine habitats.</p> |
| <p>Negative impacts on CI habitats and species</p>  | <p>Four actions in the SBSD are likely to have negative impacts on habitats and species of Community interest. These impacts seem to affect species rather than CI habitats and the vast majority concern destruction or degradation.</p>   |

## ANALYSIS OF THE MEASURES TAKEN TO AVOID, REDUCE AND COMPENSATE - ENVIRONMENTAL IMPACTS

The iterative process of SEA has made it possible to integrate reduction or avoidance measures into certain actions that initially had potential negative or uncertain impacts. In some cases, this integration has changed the characterisation of the impacts from negative or uncertain to positive, and in others it has reduced the negative impact, although it is not possible to say to what extent.

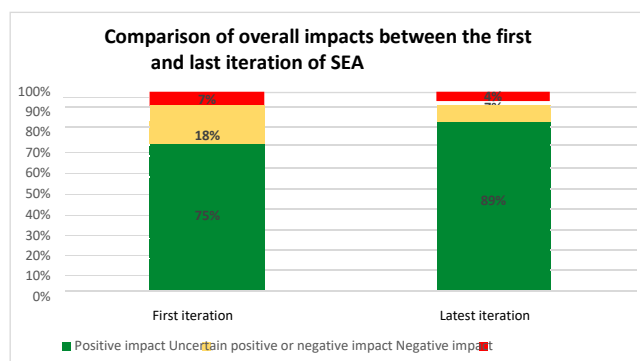
During successive iterations of the SEA:

- some 20 RE measures were proposed for socio-economic actions with potentially negative or uncertain impacts;

- about 70% of them have been integrated into the action plan sheets.

In addition to taking into account the RE measures proposed by the evaluator, the evolution of the action plan can also lead to improved impacts, in particular through two channels: 1) taking into account accompanying measures (half of the 40 or so proposed by the evaluator) and 2) the integration of new actions with positive impacts.

The product of these different developments in the Action Plan in terms of its environmental impacts is illustrated globally and in detail by environmental issue in the graphs opposite.



## IMPACT MONITORING INDICATORS

The development of the monitoring system, which, together with the action plan, forms the operational part of the DSF, enables France to meet the Community's obligations under the two framework directives on the Marine Strategy (MSFD) and Maritime Spatial Planning (MSPD). It thus defines the monitoring strategy to be put in place with the following objectives

- To update and clarify the evolution of the existing situation on the seafloor;
- To evaluate the achievement of strategic objectives specific to each coastline.

This joint monitoring system for the environmental and socio-economic strategic objectives is therefore, like the SBSD, being developed for the first time. It integrates the monitoring system of the MSFD, which was the subject of a first version during the first cycle of this directive implemented prior to the drafting of the DSF. This first version of the "DSF" monitoring system was finalised at the end of January 2021.

## Capacity of the monitoring system to improve the monitoring of the GES gap

This capacity is directly linked to the improvement of the MSFD monitoring system, which is the subject of Annex 1 of the monitoring system. The improvements for the second cycle proposed in this annex1 can be set against the assessment of the GES deviation or level of challenge that may have been made at the scale of the different vocation zones of the façade - see part 4 of this report. This is the purpose of the table below.

<sup>1</sup> And in particular in the tables in Part 3 "Summary of the devices integrated in the monitoring programme" of each monitoring programme detailed in Annex 1 of the DDS.



| Issues | Overall assessment at the level of all VZs | Overall reliability across all VZs | Monitoring system as described in Annex 1 of the DDS  |
|--------|--|------------------------------------|---|
| HB     | Overall high GES gap                       | Low                                | None operational, almost 60% not operational but expected to be at the end of this cycle and more than 40% to be established  |
| MT     | Overall average GES gap                    | Average                            | About 70% of the schemes operational, and 30% not operational but expected to be at the end of this cycle   |
| OM     | Overall average GES gap                    | Low                                | About 50% of the schemes operational, and 50% not operational but expected to be at the end of this cycle   |
| PC     | Overall high GES gap                       | Low                                | Two out of four schemes are operational, the other two should be operational by the end of this cycle<br>Furthermore, one out of four sub-programmes is to be set up and will therefore not be operational at the scale of the next cycle |
| EC     | Overall high GES gap                       | Low                                | Two thirds of the schemes are operational and one third are not operational but should be by the end of this cycle  |
| RT     | Not rated                                  | Not rated                          | No specific monitoring system targeted at this issue  |
| Eut    | Overall low GES gap                        | Good                               | All devices are operational   |
| Cont   | Overall average GES gap                    | Good (not assessed)                | Approximately 70% of schemes operational and 30% not operational but expected to be at the end of this cycle  |
| NIS    | Overall medium level of concern            | Good                               | Monitoring programme fully under development  |
| Int    | Overall medium level of concern            | Good                               | Half of the schemes are operational and the rest are not operational but should be by the end of this cycle   |
| Hyd    | Overall medium level of concern            | Average                            | 40% of schemes operational and 60% of schemes not operational but expected to be at the end of this cycle   |
| From   | Overall medium level of concern            | Good                               | Two out of nine schemes to be set up and out of the others, 50% are operational and 50% are not operational but should be at the end of this cycle  |
| Br     | Overall medium level of concern            | Good                               | One in four of the schemes to be created and of the remaining three, only a quarter are operational and three quarters are not operational but should be by the end of this cycle   |

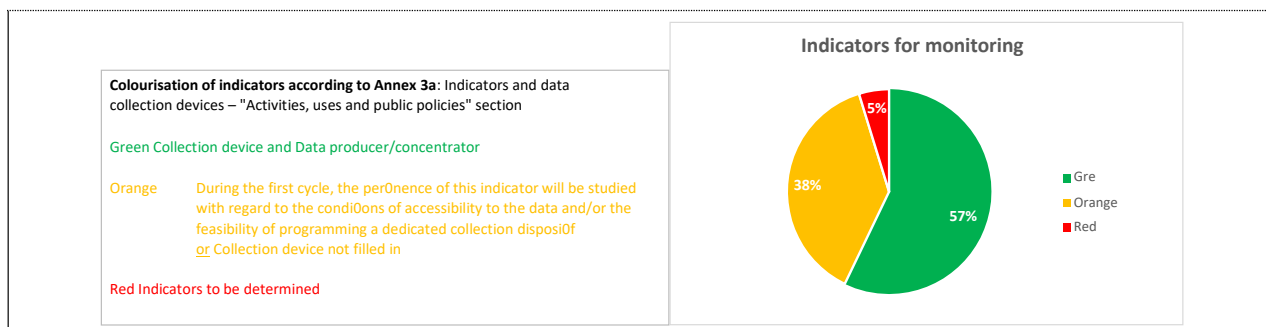
This table shows that the assessment of the GES gap is expected to improve significantly in the next cycle, provided that the currently non-operational monitoring devices are effectively operational by the end of 2026.

## Capacity of the monitoring system to report on the main impacts identified

The aim here is to understand the monitoring capacity of the main environmental impacts identified during the analysis.

|   |
|---|
| Operationality of monitoring of negative or uncertain impacts - reading on monitoring indicators linked to <b>socio-economic objectives</b>   |
| On the NAMO coast, 10 socio-economic actions are likely to have negative (26 impacts) or uncertain (40 impacts) impacts. In the monitoring system, these actions refer to 21 monitoring indicators linked to the socio-economic objectives. Their operationality can be approached according to the following typology and results for the 21 indicators concerned. |

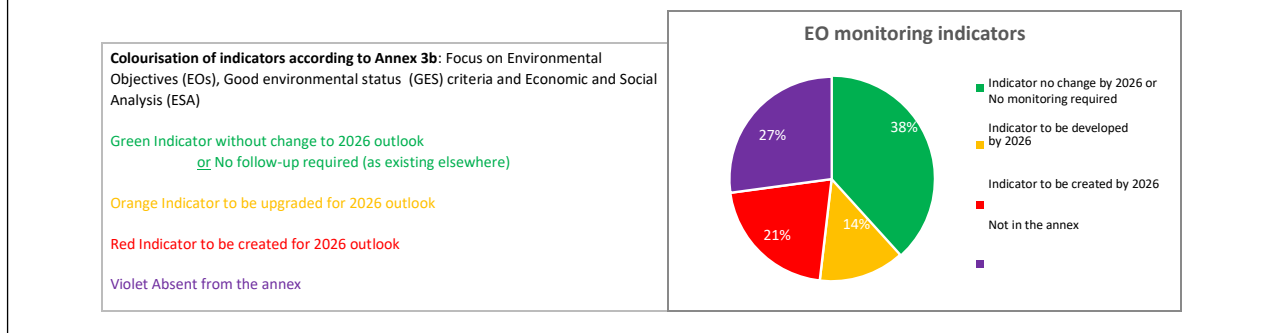




### Operationality of monitoring of negative or uncertain impacts – reading on monitoring indicators attached to **environmental objectives**

On the NAMO coast, the 66 negative and uncertain impacts concern 15 out of 17 issues (except Ris and Co), with between 1 and 7 impacts per issue. The main issues concerned are HB, Int (7 incidences), PC, ENI (6 incidences), OM, EC, Cont, Hyd (5). Other issues are less concerned: RT, Br, Pay (4 incidences), MT, De (3 incidences) and Eut, Air (1 incidence).

In the monitoring system, the issues related to the biocenosis and the pressures refer to 81 monitoring indicators linked to the environmental objectives. Their operationality can be approached according to the following typology and results for the 81 indicators concerned.



The monitoring of socio-economic actions with negative or uncertain environmental impacts seems to be less operational from the point of view of EO indicators than from the point of view of SEO indicators. In fact, barely 40% of them have an indicator that is already operational (No change by 2026 or No monitoring required under the SBSD because it is being carried out elsewhere) and just over 20% need to be created. An effort remains to be made on the other indicators: to evolve existing indicators to obtain information on finer indicators in the framework of the DSF. It should also be noted that it is not possible to comment on almost 30% of the indicators, as they are not included in Annex 3b of the monitoring scheme.

Finally, for MRE, ports and fisheries/aquaculture, which are the main activities concerned by negative and uncertain impacts, the results are rather encouraging, since the specific indicators for these activities are quite strongly operational. It should be noted, however, that there is only one specific indicator for MREs, compared to two for ports and, above all, 12 for fishing/aquaculture.

## 2. Introduction

### 2.1. What is a strategic environmental assessment?

The European Directive of 27 June 2001 on the assessment of the effects of plans and programmes on the environment<sup>2</sup> establishes the principle of an environmental assessment prior to the adoption (or "ex-ante" assessment) of those plans and programmes that are likely to have significant effects on the environment and which set the framework for subsequent decisions. The Sea Basin Strategy Documents (SBSDs) meet this definition and must therefore be subject to such an assessment, as mentioned in Article R122-17 of the French Environment Code, which lists the various plans and programmes concerned.

The purpose of this environmental assessment is to ensure the relevance of the choices made with regard to the environmental issues at stake by assessing the positive and negative impacts in a predictive manner, and by proposing, if necessary, measures to avoid, reduce or compensate for the negative impacts. More specifically, the approach has the following three objectives:

- assist in the development of the plan/programme by taking into account all environmental fields and identifying its effects on the environment. The aim is to integrate environmental considerations at each stage of the plan/programme development in an iterative process leading progressively to the environmental optimisation of the project through the study of alternative solutions;
- to contribute to the proper information of the public and to facilitate its participation in the decision-making process of the programme development;
- to inform the administrative authority that adopts the plan / programme on the decision to be taken.

While the environmental report proposed here is in line with these objectives, the particular context of the preparation of the SBSDs - recalled below - gives this SEA certain specificities:

(1) it concerns a strategic document in the field of sustainable development at sea, which therefore pursues environmental objectives. As a result, the initial state of the environment and the objectives to be achieved in this area are consubstantial with the DSF, through its marine environmental component, constituted by the MMAP (Marine Action Plan);

(2) due to the integrating nature of the SBSD, which constitutes the implementation of two European directives, and the fact that the environmental component was drawn up earlier - the MMAP having been the subject of a first implementation cycle prior to the introduction of the SBSDs - the approach is part of an iterative consultation process, since the first cycle of the MMAP has already been submitted to the environmental authority for an opinion;

(3) the fact that the SBSD was developed in two stages – strategic and then operational each subject to an environmental assessment, that of the operational component, subject to a

---

<sup>2</sup> Directive transposed into French law by order no. 2004-489 of 3 June 2004, decree no. 2005-613 of 27 May 2005 (and the circular of the Ministry of Ecology and Sustainable Development of 12 April 2006) and decree no. 2012-616 of 2 May 2012.

of this report, benefits from the feedback of the Environmental Authority on the strategic section;

(4) the proposed assignment is focused on only one part of the SEA process, the production of the environmental report, with the other parts (e.g. consultation with the environmental authority and the public) being managed directly by the developer.

## 2.2. Content of the environmental report

---

The content of the environmental report is set out in the French Environmental Code (Article R 122- 20). It includes:

- a non-technical summary;
- a general presentation indicating, in summary form, the objectives of the plan, scheme, programme or planning document and its content, its relationship with other plans, schemes, programmes or planning documents and, where appropriate, whether the latter have been, will be or may be subject to an environmental assessment;
- a description of the initial state of the environment in the area concerned, including a description of the environmental issues of the area in which the plan, scheme, programme or planning document will apply;
- a statement of the likely significant effects of the implementation of the plan, scheme, programme or other planning document on the environment, including, where appropriate, human health, population, biodiversity, fauna, flora, soil, water, air, noise, climate, architectural and archaeological cultural heritage and landscape. The likely significant effects on the environment are considered in terms of whether they are positive or negative, direct or indirect, temporary or permanent, short, medium or long term, or in terms of the cumulative impact of these effects;
- the presentation of the measures taken to avoid, reduce or compensate for the negative environmental impacts of the plan, scheme, programme or other planning document;
- presentation of the criteria, indicators and procedures, including deadlines, used to verify, after the adoption of the scheme, plan or programme, the correct assessment of the adverse effects identified;
- the presentation of the methods used to prepare the environmental impact report.

## 2.3. Methodology and conduct of the SEA

### 2.3.1. The methodological choices

They are of three types and result both from the nature of the programme evaluated - the operational part of the SBSD and in particular its action plan (PDA) - and from the consideration of the feedback from the Environmental Authority (EA) on the environmental assessment of the strategic part of the FSD3.

#### a) A more accurate assessment of significant effects

The environmental assessment carried out by EPICES & ASCA on the strategic component of the SBSDs identified a large number of potential impacts of this planning document, but did not conclude on its ability to promote the achievement of Good environmental status (GES) by 2026 as required by the MSFD. The opinion of the Environmental Authority on this first assessment clearly pointed out these limitations and called for progress in the accuracy of this assessment of the overall impacts of the SBSD in terms of achieving good status. Three methodological approaches have been used in this assessment to improve the accuracy of the impact assessment in relation to the achievement of the GES:

- the first is to strengthen the spatialisation of the analysis, i.e. to complete the overall assessment at the scale of the entire coastline with an assessment of the impacts at the scale of each vocation zone defined during the first phase of the preparation of the SBSD;
- the second is to analyse more precisely, and also spatially at the level of each vocation zone, the situation of the various environmental issues in relation to the Good environmental status (deviation from GES) or in terms of the level of issue if GES is not defined;
- the third is to associate with the nature of the identified impacts (positive or negative) a certain number of characteristics (time scale in which the impacts will appear, level of uncertainty associated with their appearance, more or less perennial/irreversible character, etc.) allowing them to be better compared and analysed in an overall manner.

However, even if the implementation of these methodological choices has made it possible to improve the accuracy of the analysis, it is still methodologically difficult to conclude on the capacity of the operational part of the SBSD to promote the achievement of the GES by 2026 at the latest, given the persistence of certain limitations mentioned below.

#### b) A more integrated approach

During the preparation of the strategic section of the SBSD, the stakeholders in the front line were led to question the coherence of the two types of objectives included in this planning document (environmental objectives and socio-economic objectives). In some cases, they have even tried to merge the two categories of objectives in order to develop a truly integrated marine policy. However, despite the efforts made, it has not always been possible to make these objectives fully coherent and the question of the necessary trade-offs and compromises has often been postponed until the definition of actions and their implementation criteria. The issue of the truly integrated nature of the SBSD is therefore central to the development of its operational component, and the environmental assessment of the SBSD must take this into account. Two methodological approaches were used to promote this more integrated approach:

<sup>3</sup>Opinions no. 2018 104, 2018 105, 2018 106 and 2018 107 of 20 February 2019.

– the first is to seek to analyse the overall impact of the SBSD's actions, whether these actions are environmental or socio-economic in nature. In order to do this, it is necessary not only to analyse the actions according to the objectives to which they refer (environmental or socio-economic), but also to look at 1) the way in which the actions have been organised in a combined manner in the DPA and 2) the links that exist between actions of a different nature - for example, an environmental action may "compensate" in terms of impact for a socio-economic action;

– the second was to seek to mobilise in this environmental assessment some of the results of the other analyses carried out in parallel by the group of service providers selected to support the development of the operational part of the SBSD (cost/effectiveness analysis and analysis of the economic and social impact of the proposed actions)<sup>4</sup>. However, this mobilisation was lessened by the narrower scope of these other analyses, which were only requested on the environmental actions of the SBSD.

### c) A more iterative process

The aim of environmental assessment is to integrate environmental considerations at each stage of the plan's development in an iterative process leading progressively to the environmental optimisation of the project. In the environmental assessment of the strategic component of the SBSD, this iterative process was relatively limited due to a particularly tight timeframe. In its opinion on this first evaluation, the EA recommends improving this iterative nature. Two methodological approaches were used for this purpose:

– on the one hand, a process involving three successive iterations, each of which includes an impact assessment and proposals for improving the way in which environmental issues are taken into account in the proposed actions (Avoid and Reduce measures);

– on the other hand, from the first iteration onwards, tools and methods of representing impact analyses (Excel grids, maps, etc.) were developed which made it possible to (1) discuss the impact assessment of their action plan with the coastlines, and (2) progressively integrate the plan's changes into the same methods of representation, which saved time during the last iterations, which were often constrained by the final deadline.

## 2.3.2. A four-phase SEA process

First, it should be recalled that this SEA took place in a very specific context: that of the global health crisis linked to Covid19. The constraints linked to this crisis, in particular the deterioration of working conditions and the need to adapt the consultation processes, greatly disrupted its progress. The initial timetable for the project was adjusted to take account of the crisis, and it took 16 months to complete instead of the 10 months initially planned.

Four phases, of widely varying duration, can be distinguished in the conduct of this SEA:

- a scoping phase, mainly concerning the spatial analysis of the situation of the various environmental issues with regard to the GES and the development of impact analysis grids and tools, took place over approximately 6 months (October 2019 / March 2020);
- a first iteration of the impact analysis of the actions proposed in the first version of the action plan took place between April and September 2020;

---

<sup>4</sup>The summary results of these different analyses carried out in parallel with this SEA are provided in [Annex 6](#) of this environmental report.

- a second iteration of the impact assessment, incorporating changes in the proposed actions between the first and second versions of the action plan, took place between October and December 2020;
- a third and final iteration based on the final version of the action plan was carried out in January 2021, in parallel with the finalisation of the environmental report.

### 2.3.3. The main limitations encountered

Four main limitations can be highlighted in relation to this environmental assessment:

- the first concerns the existing uncertainties concerning, on the one hand, the assessment of the good status of many environmental issues and, on the other hand, the precise knowledge of the pressures exerted on the marine environment by many human activities (for example, withdrawals linked to fishing on foot or recreational fishing);
- the second limitation is that it is not possible to 'quantify' the overall impact of the proposed action plan, as the different impacts can be counted and compared according to various criteria, but in no way scaled in terms of magnitude in relation to each other. Added to the first, this second limitation explains in particular the difficulties encountered in reaching a precise conclusion as to whether the action plan will restore the GES by 2026 at the latest;
- the third limitation that can be cited results from the context of the health crisis in which the environmental assessment took place, which greatly hindered the iterative process that constituted a central methodological bias of the approach. Indeed, the disruptions linked to the crisis led (1) to a lengthening of the deadlines for drawing up the content of the action plans, thereby postponing the impact analyses that could be carried out, and leading to a very significant 'compression' of the deadlines for the second and third iterations of the analysis, and (2) to a deterioration in the working conditions of the DIRM teams, thus limiting the time that could be devoted to taking account of the analyses carried out in the context of the successive iterations of the SEA;
- a fourth and final limitation is also linked to the context of the health crisis, which has profoundly affected many socio-economic activities in coastal areas, without it being possible to know to date whether this will constitute a lasting break or whether the situation will return to that of before the crisis. As a result, the elaboration of a trend scenario in the absence of a SBSB, which could serve as a reference for the analysis of impacts, an already particularly complex exercise, was made impossible by the crisis context.

### 3. Brief presentation of the SBSD and the context in which it was developed

#### 3.1. Origin and development of the SBSDs

With its maritime and coastal areas, France has a remarkable natural heritage and a significant potential for socio-economic development. The sea and coastline are already subject to numerous uses, but they are also subject to numerous pressures due to climate change, land-based pollution or the impact of activities. In order to ensure good environmental status and better economic and social development of the sea and coastline, a national strategy was adopted in February 2017.

For each of the maritime coastlines in mainland France and for each of the ultra-marine maritime basins, a planning document - the strategic document for the façade or ultra-marine maritime basin - must specify the conditions for implementing the national strategy, taking into account local specificities. It will include spatial planning in the form of a map of the uses of maritime spaces. In mainland France, the façade strategy document is drawn up by the State in consultation with the maritime and coastal stakeholders meeting within the Conseil maritime de façade. It is subject to prior consultation with the public.

The establishment of strategic façade documents is part of the implementation of the two framework directives "Marine Strategy" and "Maritime Spatial Planning" at European level.

An initial consultation with the public concerned the proposed vision of the future of the coastline, prior to the definition of the coastline strategy. It took place for two months from 26 January 2018. A further consultation phase is planned for 2021.

**The four maritime coastlines in mainland France**





## The legal and political framework of the Sea Basin Strategy Document

### THE NATIONAL AND COMMUNITY FRAMEWORK

France ranks first among nations for the richness of its marine ecosystems. The excellence of its oceanographic research is recognised throughout the world, certain industrial sectors such as shipbuilding, freight transport and boating are at the cutting edge, its flag is recognised for the quality, technicality and reliability of its ships and crews, its national navy is present on all seas, and changes or impulses are being launched for historical or emerging sectors. Finally, its expertise in the management of natural marine protected areas is widely recognised throughout the world.

Since 2007, following the Grenelle Environment Forum and the Grenelle Maritime Forum, France has been committed to a maritime policy aimed at integrated management of the sea and coastline. It aims at both the sustainable development of maritime and coastal activities and the preservation of the marine environment, as well as a better articulation between land and sea. The French Environmental Code provides the legislative framework for the implementation of this policy in Articles L219-1 to L219-18. In particular, it establishes a national strategy for the sea and the coastline and its implementation in strategic documents for the coastline and maritime basin.

**The national strategy for the sea and the coast** is responsible for providing a reference framework for public policies concerning the sea and the coast. It is linked in particular with the National Strategy for the Ecological Transition to Sustainable Development, the National Research Strategy and the National Biodiversity Strategy, to which it contributes and for which it is the reference for the sea and the coast.

The national strategy for the sea and the coast (adopted by the decree of 26 February 2017) sets four long-term, complementary and inseparable **objectives**:

- ecological transition for the sea and the coast;
- the development of the sustainable blue economy;
- the good environmental status of the marine environment and the preservation of an attractive coastline;
- the influence of France as a maritime nation.

**At the European level**, considering that the seas and oceans are drivers of the European economy through a strong potential for innovation and growth, the EU Member States have agreed to promote an **integrated maritime policy**. It aims to address maritime issues in a more coherent way and to strengthen coordination between the different areas of activity. The aim is to promote the "blue growth", i.e. sustainable growth, in the marine and maritime sectors as a whole. It is part of the Europe 2020 strategy for **smart** (knowledge and innovation based), **sustainable** (more resource efficient, greener and more competitive) and **inclusive** (high employment and social and territorial cohesion) **growth**.

The European Integrated Maritime Policy encourages authorities at all levels (international, national, regional and local) to exchange data and cooperate rather than working in isolation on different aspects of the same problem and establishes close cooperation between policy makers in different sectors and at all levels of decision-making. It is based in particular on two framework directives:

- **The Marine Strategy Framework Directive** (Directive 2008/56 of 17 June 2008), which aims to restore or maintain the good environmental status of the marine environment by 2020. For example, Member States must draw up Marine Action Plans to be reviewed every six years.



- **The Maritime Spatial Planning Framework Directive** (Directive 2014/89 of 23 July 2014) which establishes a framework for maritime planning and requires Member States to ensure coordination of different activities at sea. Thus, by 2021, they must develop plans that identify the spatial and temporal distribution of relevant, existing and future activities and uses in their marine waters.

**The Sea Basin Strategy Documents are the implementation of these two directives. As such, they include the elements of maritime spatial planning and the marine environment action plan.**

#### THE SCALE OF THE COASTLINE

The **Sea Basin Strategy Documents** specifies and completes the guidelines of the national strategy for the sea and coastline with regard to the economic, social and ecological issues specific to the coastline. It includes proposals for the development of activities and the regulation or reduction of human pressure on marine and coastal environments. For the first time, a set of maps summarises the issues for the general public and specifies the sectors to be favoured for the establishment of activities and for the preservation of the marine and coastal environment. The aim is to coordinate activities and prevent conflicts linked to the diversification and densification of uses of the sea and coastline.

Given the **interaction between land and sea**, not everything is settled at sea. Watersheds and land areas have an influence on maritime and coastal areas through issues of water quality, land use, major urban, tourist and agricultural developments, projects for activities at sea, etc. The strategic documents for the coastline are intended to provide guidelines for everything that has an impact on the sea and the coastline in the coastal regions. One of the challenges is to link them with land-based planning, the most important of which are the master plans for water development and management (SDAGE), the regional plans for sustainable development and territorial equality (SRADDET), the territorial coherence plans (SCOT) and the local urban plans (PLU).

The Sea Basin Strategy Documents **must** be taken into account for any project, plan or programme that has an influence on the sea. For those that would be located exclusively at sea, this obligation becomes a **compatibility** requirement.

From a formal point of view, the French Environmental Code stipulates (Articles R219-1-7 to R219-1-14) that the Coastline Strategic Document comprises four parts:

- the existing situation, the issues at stake and a draft vision for the future of the façade in 2030; (part 1)
- the definition of strategic objectives from an economic, social and environmental point of view and the associated indicators; they are accompanied by a vocational map which defines, within the maritime areas, coherent zones with regard to the issues and general objectives assigned to them; (part 2)
- the arrangements for evaluating the implementation of the strategy document; (part 3)
- the action plan. (part 4)

Parts 1 and 2 of the Coastline Strategy Document constitute the "**Maritime Coastline Strategy**". The latter was developed in 2018 and was subject to an initial strategic environmental assessment. Following subsequent consultations, this

Maritime Coastline Strategy was officially adopted in each coastline in September/October 2019.

Parts 3 and 4, i.e. **the monitoring system** to assess compliance with the objectives, and the **action plan**, which sets out all the concrete and operational actions to be implemented at national and local level to meet the strategic objectives set beforehand, constitute the **operational part** of the DSF. The latter was developed between July 2019 and January 2021 and is the subject of a second Strategic Environmental Assessment of the DSF. **This report concerns this second SEA and therefore focuses on the operational part of the DSF.**

## The process of developing SDBS's

At the national level, coordination is ensured by the Délégation à la Mer et au Littoral (DML) and the Direction de l'Eau et de la Biodiversité (DEB), services under the authority of the Ministries of the Sea and of Ecological Transition.

At local level, the integrated maritime policy involves all institutional partners on land and at sea, and coordination of administrative structures and consultation bodies is necessary. This is carried out by two coordinating prefects: the maritime prefect and the regional prefect coordinating the coastline.

This prefectural pairing is based on a façade administrative commission, the composition of which is set by inter-prefectoral order 49/2016 of 9 June 2016, and on the Conseil maritime de façade (CMF), a consultation body provided for by Article L.219-6-1 of the French Environment Code, which has been in place for each coastline since 2010. The mission of the CMF is to facilitate the coordination of the use, development, protection and enhancement of the coastline and the sea, in consultation with all governance actors.

The drafting of the SBSDis therefore part of a methodology for maritime and coastal spatial planning. The Interregional Directorate for the Sea (DIRM) is responsible for steering the project.

## The process of developing the SBSDis Action Plan

As the process of developing the environmental and socio-economic actions differed in some respects, both in method and timing, they are described in turn below.

First of all, the main stages in the development process of **environmental actions** can be characterised as follows:

- an inventory of existing actions that already contribute to the achievement of the objectives of the SBSDis, not only by the State but also by local and regional authorities and other partners, and by the implementation of European and international policies. The Water and Biodiversity Directorate (DEB) contributed to this inventory by drawing up a list of national and international actions that will be communicated to the coastlines in May 2019<sup>5</sup>;
- analysis of the sufficiency of these existing actions in relation to the achievement of the strategic objectives set out in the first part of the SBSDis. This analysis, carried out in each coastline by experts, does not constitute a robust assessment<sup>6</sup> of the capacity of existing actions to achieve the objectives set, and generally concludes that it is necessary to strengthen the

---

<sup>5</sup> This inventory only covers actions adopted as of 2016. It thus completes the one carried out in the framework of the first cycle of implementation of the MSFD.

<sup>6</sup> Which would have been methodologically very difficult to achieve anyway.

existing shares by new shares. As a result of this analysis, the coastlines proposed new actions;

- proposal of new actions by the "State" sphere (MTES and OFB) on the basis of (1) the harmonisation of sufficiency analyses carried out on the coastlines, (2) proposals for new actions from the coastlines, and (3) the expertise of the DEB, the OFB and other central administration directorates;

- consultation meetings on these proposals for new actions, involving the DIRM, the DREAL, the MTES departments and associated experts (OFB in particular). Six one-day national meetings were held from November 2019 to January 2020;

- a front-of-house consultation phase was then planned in the process, which was largely disrupted by the onset of the health crisis. Feedback from the coastlines on this first version of the environmental action sheets, which may include proposals for new actions, was provided in spring 2020;

- a national harmonisation was carried out in May-June 2020 and validated by the Blue NOC on 1 July 2020;

- following this national harmonisation, a new version of the environmental action plan was sent by the MTES to the facades in July 2020, accompanied by a draft financial model and decision support elements (cost effectiveness analysis in particular). The objective of the financial model was to identify the costs, pilots and potential financiers to ensure the operability of the actions and to retain only the actions with a pilot and financing;

- a new phase of consultation was then carried out in the front of the building and led to a return to the DEB in October/November 2020;

- a second and final national harmonisation was carried out in November 2020 and validated by the Blue NOC in December 2020.

Then, concerning the **socio-economic actions**, the development process can be described by the following steps:

- work by the State departments responsible for maritime and coastal issues was carried out in 2019 to identify courses of action. From the outset, these considerations took account of the opinions of the authorities and the public expressed in the consultations relating to the development of the Maritime Coastline Strategy. These exchanges made it possible to refine the initial proposals for action by comparing them with the projects carried out locally. In absolute terms, courses of action (without drafting complete sheets) have been determined locally at the level of each coastline in autumn 2019;

- development of action proposals by the coastlines, in consultation with socio-economic actors and associations. The timing of this first proposal differs widely depending on whether or not the coastlines had time to carry out the necessary consultation before the health crisis began. As a result, the drafting of this first proposal for socio-economic action sheets was spread out between March 2020 and July 2020, depending on the coastlines;

- At the request of the coastlines to pool certain actions, particularly in certain areas that also fall under national jurisdiction, national consultation meetings were organised by the DML in July 2020 and led to the production of around ten national action sheets in autumn 2020;

- a second phase of consultation with the stakeholders according to the procedures specific to each coastline took place from October to December 2020.

This difference in the timetable for the production of environmental and socio-economic actions, which varies according to the coastline, has led to successive iterations of the SEA being carried out at different stages of progress for the two types of action.

Finally, **the integration of the various actions into a single action plan** was essentially the responsibility of the DIRMs, as the national steering committees did not deal with this issue much. This integration work suffered from the time lag between the development of the environmental actions and the development of the socio-economic actions, and at the end of the work, from the late arbitrations made on certain environmental actions.

## 3.2. The specific context of the NAMO coastline

### 3.2.1. The legacy of multi-stakeholder governance

The Façade Administrative Commissions (FACs) of the four coastlines were entrusted with the task of drawing up the future SBSDs in the summer of 2014, but on the North Atlantic Channel West façade, numerous uncertainties led to the postponement of the consultation process on the SBSD pending clarification of the regulatory framework, even though the services were making progress on the substance of the diagnoses, clarification of the issues at stake, etc. One of these uncertainties was the possible merger of the NAMO and SA coastlines into a single Atlantic coastline, a decision which conditioned the framework for discussion and preparation of the SBSD.

In addition, the coastline is characterised by a strong policy of local and regional authorities in relation to the sea and the coastline, which has added political uncertainties to the regulatory uncertainties. Indeed, the Brittany Region has had a Regional Sea and Coastal Conference (CRML) since 2007 and the Pays de la Loire Region has co-chaired the Regional Sea and Coastal Assembly (ARML) with the State since June 2017. The départements (Finistère, Loire Atlantique and Vendée, etc.) are also setting out guidelines and actions in the maritime and coastal field.

Finally, the organisation of consultation at local level has already been taking place for many years within the framework of the Marine Action Plan (MAP), initiated by the Marine Strategy Framework Directive. The technical secretariat of the MMAP (ST MMAP) is configured at the Bay of Biscay-Celtic Sea (GoG-MC) scale and, as such, is co-led by the DIRM NAMO and SA.

### 3.2.2. From the vision to the action plan of the SBSD

Work on the SBSD thus began in the second half of 2017 at a particularly fast pace to meet the timetable. The work was based on a diagnosis and the formulation of issues integrating the work carried out over the years as part of the monitoring of the MMAP and the discussions held with the regions. They were shared in 20 meetings, with users or citizens, held between October 2017 and January 2018. At the end of this first stage, the NAMO coastline had a vision for the future of the coastline up to 2030. Drawn up by the State and then discussed by the Permanent Commission of the Conseil maritime de façade (CP CMF), this vision was again debated and enriched by the regional maritime and coastal conferences and assemblies in Brittany and Pays de la Loire. It was also brought to public debate through a regulatory procedure of the public debate commission, which took place over 2 months (from 26 January to 25 March 2018) by mobilising two modes of public expression:

- a participatory platform on the internet allowing the public to inform themselves, leave comments and exchange with other contributors.
- citizens' workshops limited to 50 people to facilitate exchanges and which took place in various locations along the coast (Brest, Les Sables d'Olonne, Saint-Brieuc, Saint-Malo, Lorient, Saint-Nazaire).

In a second step, this vision was used as the basis for the process of developing the strategic objectives of the SBSD. For example, since March 2018, the Administrative Front Commission (CAF), the body that ratifies the State's position, has met twice (once in

technical seminar and once in plenary, on 6 and 20 April 2018). The Permanent Commission of the Conseil maritime de façade (CP CMF), on which the consultation is based, met four times (in restricted or extended format, on 23 May, 4 June, 2 July and 17 September 2018). The Conseil maritime de façade (CMF) was officially presented with the draft SBSDon 11 June 2018. In addition, the Regional Sea and Coastal Conference (CRML) of Brittany met to discuss the SBSDon 6 June.

The first two parts (strategic section) of the SBSDonAMO were approved by the coordinating prefects of the coastline on 24 September 2019, after a good part of the year devoted to consultation on the final draft: opinion of the Environmental Authority (20 February 2019), opinion of the public consultation (4 March to 4 June 2019) and opinion of the bodies mentioned in I of article R. 219-1-10 of the French Environment Code (6 March to 6 June).

With regard to the development of the SBSDonAction Plan, three important elements should be noted:

- the renewal of the CMF at the end of 2019, with a meeting on 25 November 2019 devoted to this topic (election of the new presidency and members of the standing committee), even though it provided an opportunity to introduce the forthcoming work on drawing up the action plan. The permanent commission, after having been chaired by an elected member of the Brittany Region, is now chaired by an elected member of the Pays de la Loire Region;
- for the environmental component, preliminary work was carried out at the level of the ST MMAP during the summer of 2019, in consultation with the ST MMAP referents (Water Agency, DREAL, AFB), in particular on the inventory of the existing situation and the initial ideas for new measures. This work was consolidated at the ST MMAP GoG-MC plenary meeting on 23 September. The DEB had indeed asked the facades to submit proposals for environmental actions by 30 September 2019;
- for the socio-economic component and the integrated approach between environmental and socio-economic objectives, preliminary work carried out within an internal State project team (DREAL, DDTM, DRJSCS, AFB and CEREMA), led by the DIRM NAMO, has been underway since the first half of 2019 to identify the existing actions that will contribute to achieving the objectives.

It is also worth underlining the strong specificity of the NAMO façade concerning the step-by-step association of the PC members, under mandate from the CMF. Thus, since December 2019, the Chair of the CMF CP has been meeting monthly (outside the summer season) with this body to continue the work of drawing up the SBSDonAction plan, making it possible to identify, collegially, with the stakeholders of the maritime front, the existing and new actions in the service of the DSF's strategic objectives. The PC members remained strongly involved despite the health context of 2020. The work of the PC was presented for information to the CMF on 23 November 2020.

### 3.3. The operational component of the NAMO coastline's SBSDon

The version of the action plan of the North Atlantic-Western Channel strategic document which is the subject of version V1 of the environmental report is the version submitted to the CMF on 23 November 2020.

This document consists of a preamble recalling the European framework and the development process, content and implementation of the DFS and its action plan, and then of 5 parts constituting the backbone of the action plan. The parts consist of between two and five chapters, each of which describes:

- 1) the context;
- 2) actions in place: list of related SEO and EO objectives and description of the main actors and actions in place;

- 3) the new measures provided for in the action plan: list of these measures with reference to the action sheets and description of the main prospects opened up by these measures.

A summary of this is as follows:

| <b>Table of contents</b>  |           |
|---|-----------|
| <b>Preamble</b>   | <b>4</b>  |
| A. The European and national framework.....   | 4         |
| B. SBSDNAMO and its action plan: development process, content and implementation..... | 5         |
| <b>Part 1 - A maritime identity anchored in the territory</b>                         | <b>9</b>  |
| 1.1 A dynamic coastal region.....   | 10        |
| 1.2 Coordination of human activities.....   | 12        |
| 1.3 Islands, an attractive maritime identity and a showcase for innovation.....       | 15        |
| <b>Part 2 - A sustainable blue economy to be promoted</b>                             | <b>17</b> |
| 2.1 A blue economy that creates jobs.....   | 18        |
| 2.2 A blue economy that makes sustainable use of marine resources.....                | 20        |
| 2.3 A blue economy driven by the ecological transition.....                           | 22        |
| <b>Part 3 - A natural heritage to be enriched</b>                                     | <b>25</b> |
| 3.1 Protection of species and their habitats.....                                     | 26        |
| 3.2 Pollution control.....  | 28        |
| 3.3 Reduction of anthropogenic pressures.....   | 31        |
| <b>Part 4 - Sustainable and resilient development of marine and coastal areas</b>     | <b>35</b> |
| 4.1 Coastal risk management and maritime safety.....                                  | 36        |
| 4.2 A planning and resilience strategy.....   | 39        |
| <b>Part 5 - Research and innovation at the heart of the coastline's outreach</b>      | <b>43</b> |
| 5.1 Research and innovation.....  | 44        |
| 5.2 Mobilising scientific expertise.....  | 46        |
| 5.3 Raising awareness and sharing knowledge.....                                      | 48        |
| 5.4 Digital access to information.....  | 50        |
| 5.5 A coastline open to the world.....  | 51        |

This summary document, which is intended for educational purposes, is supplemented by all the action sheets, as well as the list and cartographic atlases of the study sectors of the strong protection zones, documents which are also studied in this report.

### 3.4. The challenges of coordination with other plans and programmes in the area

The search for plans, programmes and strategies (PPSs) that could be linked to the SBSDis identified that this is a pivotal period, with most PPSs expiring between 2020 and 2022 and thus largely in the process of being developed (SDAGE,



SRADDET, Grand Port Strategy, etc.). Consequently, the group worked on the most recent versions, either transmitted by the DIRM or available on the internet.

### 3.4.1 THE PPS WHOSE ARTICULATION IS "FUNCTIONAL"

#### **MASTER PLAN FOR WATER DEVELOPMENT AND MANAGEMENT (SDAGE)**

The Master Plan for Water Development and Management (SDAGE) is the tool for implementing the Water Framework Directive (WFD), which aims to achieve or maintain good surface and groundwater status throughout Europe. As mentioned above, the SBSDD is the implementation document for the MSFD, which aims to achieve or maintain good environmental status of marine waters on European territory, and which is implemented in France through the Marine Action Plans (MMAP) initiated in 2012 and integrated into the SBSDD from 2018.

These two directives therefore have a common objective of achieving good status in the waters to which they apply, waters which partially overlap. Furthermore, analysis of the good status of marine waters requires an analysis of the pressures that are exerted on them, some of which are linked to "terrestrial" surface and groundwater (land-based inputs of physical or biological contaminants, freshwater flow, etc.). The articulation of these two directives is therefore a key issue, which the EC insisted on in its communication of 14 November 2012 on an "Action Plan to safeguard Europe's water resources" (the so-called Blueprint).

At national level, this coordination was the subject of a government instruction dated 17 February 2014, then a technical note from the DEB on 24 November 2020, which replaces the February 2014 circular by taking into account the new issues arising from the entry into force of the law for the reconquest of biodiversity, nature and landscapes of 8 August 2016 and the integration of the action plans for the marine environment (MMAP) into the Coastline Strategic Documents.

This technical note specifies in particular:

(1) the governance arrangements to promote a coherent implementation of the two directives:

- reciprocal participation of the deconcentrated services and the competent authorities in the basin and coastline administrative commissions;
- active participation of the DREALs and the Water Agencies in the technical secretariats responsible for drawing up the SBSDDs and the DIRMs in the technical secretariats responsible for drawing up the SDAGEs;
- reciprocal information of the Basin Committees (BC) and the conseils maritimes de façades (MCF) on the SDAGEs and SBSDDs under preparation;
- articulation of the timetables for the different stages of consultation of the assemblies and making the information available to the public.

(2) coordination in the development of the implementation elements of the two Directives:

- articulation of the SBSDD monitoring system and the SDAGE monitoring programme;
- articulation of the environmental component of the strategic objectives and action plans of the SBSDDs with the orientations of the SDAGE(s) and their programme of measures. This linkage involves in particular (i) the partial coupling of the timetables for the action plans of the SBSDDs, the SDAGEs and their programmes of measures, (ii) the categorisation of the sources of pressure on the marine environment targeted by the strategic objectives and action plans of the SBSDDs and the

definition of measures and associated actions in the SDAGE(s) programmes of measures and SBSD action plans. Three types of pressure sources were thus defined: sources of pressure giving rise to measures that are only detailed in the SDAGEs and their programmes of measures (e.g. nutrient inputs from catchment areas), sources of pressure giving rise to actions that are only detailed in the action plans of the SBSDs (e.g. underwater noise disturbance linked to maritime transport), sources of pressure giving rise to measures and actions that must be detailed simultaneously in the action plans of the SBSDs and in the SDAGEs and/or their programmes of measures (e.g. loss of functional seabird habitats in coastal wetlands), (iii) the setting of complementary targets associated with the environmental objectives of the SBSDs and concerning the SDAGEs;

- articulation of the environmental component of the status of the existing SBSDs and the WFD status report: definition of a harmonised method for the initial MSFD assessment and the WFD status report, which will be used, among other things, for the preparation of the third cycle MSFD assessment from November 2022.

These different elements of articulation detailed in this technical note have had concrete consequences on the elaboration of the operational part of the SBSD and its strategic environmental assessment:

(1) in terms of timetable, the date of referral to the EA has been set for the beginning of February 2021 in order to allow a joint consultation period for the operational part of the SBSD and the SDAGE;

(2) in terms of process, the Water Agencies have been involved in the various national meetings of the environmental action development process described above (notably the Blue WG).

At the **level of the NAMO coastline**, the coordinating prefects, in conjunction with their departments, ensure consultation with the stakeholders for the two plans, via the Loire-Brittany Basin Committee and the NAMO Conseil maritime de façade (CMF). At the time of the CMF's renewal, at the end of 2019, the appointment to the CMF of members who also sit on the Basin Committee was sought in order to take better account of the respective land/sea issues.

Internally, the technical secretariat preparing the environmental proposals for the SBSD (ST MMAP Golf of Gascogne Celtic Seas) is co-led by the DIRM NAMO and SA missions for the coordination of sea and coastal policies (MCPML) and involves the same representatives of the DREALs and Water Agencies as those who are drafting the coastal chapter of the SDAGE Loire Bretagne 2022-2027 within a dedicated working group. The MCPML of the DIRM NAMO is also a member of this "SDAGE volet littoral" working group.

Since 2018, this organisation has made it possible to identify the common objectives between the strategic environmental objectives of the SBSD (descriptors) and the guidelines and provisions of the draft SDAGE Loire-Bretagne. In summary, the links between the MMAP and the SDAGE can be classified into three categories:

**1. Descriptors with a strong link to the SDAGE:** control of eutrophication (*9 orientations of the draft SDAGE concerned*) and of contamination in the environment or in products (*15 orientations of the draft SDAGE concerned*).

**2. The descriptors to which the SDAGE contributes in part:** preservation of biodiversity (*12 orientations of the draft SDAGE cross-referenced with benthic habitats, 9 with fish and cephalopods*), control of non-indigenous species (*3 orientations of the draft SDAGE*), respect for the integrity of the seabed (*4 orientations of the draft SDAGE*), hydrology and hydromorphology (*10 orientations of the draft SDAGE*).

**3. Descriptors with no apparent link to SDAGE policies:** limiting noise pressure, controlling fishing pressure at sea and reducing the amount of marine waste, environmental objectives of the MMAP that have little or no direct link to SDAGE policy, except for waste management in sewage systems.



This is reflected in the correspondence table presented in the draft SDAGE part  
The following is a summary of the "Legal context and scope of the SDAGE - Articulation with other plans and programmes":

|  | D01-HB                | D01-MM                   | D01-OM        | D01-PC                    | D3                      | D4             | D5                   | D8-D9               | D2                      | D6                            | D7                                       | D10          | D11        |
|--|-----------------------|--------------------------|---------------|---------------------------|-------------------------|----------------|----------------------|---------------------|-------------------------|-------------------------------|--|--------------|------------|
|  | Benthic habitats (HB) | Mammals and turtles (MT) | Seabirds (OM) | Fish and cephalopods (PC) | Commercial species (EC) | Food webs (RT) | Eutrophication (Eut) | Contaminants (Cont) | Nonnative species (NIS) | Integrity of the seabed (Int) | Changes in hydrographic conditions (Hyd) | Waste (From) | Noise (Br) |
| <b>CHAPTER 1 - Rethinking river development</b>  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 1A - Prevent further degradation of the environment  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 1B - Preserve flood flow capacities and flood and sea-submergence expansion areas                                    |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 1C - Restore the physical and functional quality of watercourses, estuarine areas and hydraulic annexes              |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 1D - Ensuring the longitudinal continuity of watercourses  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 1E - Limit and control the creation of water bodies  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 1F - Limit and control the extraction of alluvial aggregates in major river beds                                     |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 1G - Raising awareness   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 1H - Improving knowledge   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 2 - Reducing nitrate pollution</b>  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 2A - Combating marine eutrophication due to inputs from the Loire catchment  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 2B - Adapt action programmes in vulnerable zones on the basis of regional diagnoses                                  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 2C - Developing incentives in priority areas   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 2D - Improving knowledge   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 3 - Reducing organic and bacteriological pollution</b>  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 3A - Continue to reduce point source discharges of organic pollutants, particularly phosphorus                       |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 3B - Prevent diffuse phosphorus inputs   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 3C - Improve the efficiency of wastewater collection   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 3D - Controlling rainwater by implementing integrated management in urban planning                                   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 3E - Rehabilitate non-compliant non-collective sanitation installations  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 4 - Controlling and reducing pesticide pollution</b>  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 4A - Reduce the use of pesticides  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 4B - Develop catchment areas to reduce the transfer of diffuse pollution   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 4C - Promote pesticide-free practices in communities and on public infrastructure                                    |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 4D - Develop training for professionals  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 4E - Supporting non-farming individuals to eliminate the use of pesticides   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 4F - Improving knowledge   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 5 - Controlling and reducing pollution from micropollutants</b>   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 5A - Continuing to build knowledge   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 5B - Reduce emissions by focusing on preventive actions  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 5C - Involve regional and departmental players and major urban areas   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 6 - Protecting health by protecting water resources</b>   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 6A - Improve information on resources and facilities used for drinking water supply                                  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 6B - Finalise the implementation of protection perimeter orders on water catchments                                  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 6C - Fight against diffuse pollution by nitrates and pesticides in catchment areas                                   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 6D - Set up alert schemes for water catchments   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 6E - Reserve certain resources for drinking water  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 6F - Maintain and/or improve the quality of bathing water and other sensitive uses in continental and coastal waters |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 6G - Improve knowledge of discharges, behaviour in the environment and the health impact of micropollutants          |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 7 - Controlling water abstraction</b>   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 7A - Anticipate the effects of climate change through balanced and economical management of water resources          |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 7B - Ensure the balance between the resource and the needs at low water level  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 7C - Manage withdrawals collectively in the water distribution zones and in the basin concerned by provision 7B-4    |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 7D - Change the spatial and temporal distribution of winter storage withdrawals                                      |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 7E - Managing the crisis   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 8 - Preserving wetlands</b>   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 8A - Preserve wetlands to maintain their functions   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 8B - Preserve wetlands in projects for installations, works and activities   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 8C - Preserve large coastal marshes  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 8D - Raising awareness   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 8E - Improving knowledge   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 9 - Preserving aquatic biodiversity</b>   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 9A - Restore the functioning of migration circuits   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 9B - Ensure balanced management of heritage species and their habitats in aquatic environments                       |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 9C - Enhancing the fishing heritage  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 9D - Controlling invasive species  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 10 - Preserving the coastline</b>   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10A - Significantly reduce eutrophication in coastal and transitional waters   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10B - Limit or eliminate certain discharges into the sea   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10C - Restore and/or protect the sanitary quality of bathing waters  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10D - Restore and/or protect the sanitary quality of water in shellfish farming and professional fishing areas       |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10E - Restore and/or protect the sanitary quality of recreational angling areas                                      |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10F - Develop the coastline taking into account the environment  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10G - Improve knowledge of coastal environments  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10H - Contributing to the protection of coastal ecosystems   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 10I - Clarify the conditions for the extraction of certain marine materials  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 11 - Preserving the headwaters</b>  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 11A - Restore and preserve the headwaters  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 11B - Promote awareness and enhancement of river basin headwaters  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 12 - Facilitating local governance and strengthening the coherence of territories and public policies</b> |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 12A - Wise people wherever necessary   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 12B - Strengthen the authority of local water commissions  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 12C - Strengthen the coherence of public policies  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 12D - Strengthen the coherence of neighbouring Wise  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 12E - Structuring territorial project management in the water sector   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 12F - Use economic analysis as a decision-making tool to achieve good water status                                   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 13 - Setting up regulatory and financial tools</b>  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 13A - Better coordinate the State's regulatory action and the financial action of the water agency                   |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 13B - Optimise the financial action of the water agency  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| <b>CHAPTER 14 - Informing, raising awareness, encouraging exchanges</b>  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 14A - Mobilise stakeholders and encourage the emergence of shared solutions  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 14B - Raising awareness  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |
| 14C - Improve access to water information  |                       |                          |               |                           |                         |                |                      |                     |                         |                               |  |              |            |

Source: Draft SDAGE 2022-2027 for the Loire-Brittany basin, adopted by the CB in October 2020 and submitted for consultation

On the basis of these correspondences, the State services have internally defined the major lines of action to be carried out either by the SDAGE, or by the SBSDor by both.

On the SBSDside, the ST MMAP first identified the provisions of the SDAGE currently in force that would contribute to achieving the strategic environmental and specific objectives of the DSF. It has also carried out this work, in conjunction with the DEB of the MTE, on all the actions, plans and programmes in force in order to identify, on the basis of expert opinion, the sufficiency of the existing situation and to propose, if necessary, new complementary actions. This work made it possible, in a second phase, to identify which new actions were more likely to be supported by the SDAGE and thus to feed into the work of the group drafting the coastal chapter of the SDAGE (WG described above) in order to highlight certain major provisions. Then, as work progressed on the action plan of the SBSDon the one hand and the coastal chapter of the SDAGE on the other, the proposals for new provisions and actions were presented to the stakeholders, discussed and amended within the "coastal" commission of the Loire-Brittany Basin Committee and the standing commission of the CMF NAMO.

A hearing was also organised at the request of the members of the CMF NAMO standing committee on the subject of water to identify any shortcomings in the adequacy of the actions carried out under the SDAGE to meet the needs of the marine environment, coastal waters and human uses. From these exchanges, it emerged that it was important to include in the draft SBSDaction plan an action specific to the NAMO coastline (not included in the plans of the other coastlines) concerning the reduction of nutrient inputs to the sea for descriptor D5 (eutrophication). This action has been selected within the framework of the GT Bleu of 3-4 December 2020, a national coordination body between the MTES and the coastlines aiming at national harmonisation (national arbitrations, integration of feedback from the coastlines) and at the CNP Bleu7 of 17 December 2020, which is the official body for validating the work of the DSF.

This work on linking the two documents will be continued in 2021: public consultation period and joint bodies for the two plans, opinion issued by the Conseil maritime de façade and the Basin Committee on the two documents.

### ***DOCUMENT OF MARINE AGGREGATES GUIDANCE AND MANAGEMENT (DOGGM)***

This document has a special status in relation to the SBSDas it provides a framework for the management of marine aggregates extraction. As such, it constitutes an annex to the NAMO maritime façade strategy adopted by the coordinating prefects on 24 September 2019 (annex 9).

The DFS DPA recalls that the DOGGM for 2030 (12 years):

- was developed from the needs and volumes of marine aggregates required for the various uses of the Breton and Loire regional quarry plans;
- stipulates that the existing siliceous and shellfish aggregates extraction authorisations allow the supply of the various sectors that depend on them to be satisfied.

Nevertheless, it will be necessary to update the assessment of needs midway through the DOGGM, i.e. in 2025, as part of the revision of the DSF, while remaining in the spirit of sustainable management of mineral raw materials.

Furthermore, SDAGE guideline 10I "Specify the conditions for the extraction of certain marine materials" indicates the need to establish a spatial management of the activity taking into account all the issues of the marine environment, and thus refers to the DOGGM NAMO.

---

7 National Steering Committee for the Implementation of the Marine Directives

### 3.4.2 THE PPS WHOSE ARTICULATION IS "STRUCTURING"

#### REGIONAL PLAN FOR PLANNING, SUSTAINABLE DEVELOPMENT AND EQUALITY OF TERRITORIES (SRADDET)

The progress of the SRADDETs on the NAMO coast is heterogeneous between the two regions. In Brittany, after a long period of concerted preparation (2016 to 2019), the Regional Council approved the SRADDET project (by deliberation on 28 November 2019). This project was then sent for opinion to the environmental authority, the regional prefect, the CTAP (Conférence territoriale de l'action publique), the CESER (Conseil Économique, Social et Environnemental Régional), the local authorities, the EPCIs and the Pays. The public enquiry took place from 18 August to 18 September 2020 and its conclusions were delivered on 2 November 2020. In Pays de la Loire, the process is much less advanced and the draft SRADDET has not yet been finalised.

The articulation between the SRADDET Bretagne and the SBSO NAMO has the following characteristics:

- The SRADDET is an enforceable document with a hierarchy of compatibility with the SDAGE and consideration with the DSF. It is in this capacity that the SBSO is mentioned in the draft SRADDET (but only once).
- The objectives of the SRADDET are divided into five main sections: 1 - Connecting Brittany to the world, 2 - Accelerating our economic performance through transitions, 3 - Bringing to life a Brittany of proximity, 4 - A Brittany of sobriety and 5 - A united and supportive Brittany. Strands 2 and 4 speak most strongly and specifically about the sea and the coast. Strand 2 includes dedicated objectives that are closely linked to the FSD's ESOs: Objective 4 "Achieving efficient multimodality for freight transport"<sup>9</sup>, Objective 8 "Make the sea a lever for sustainable development for the economy and employment at regional level"<sup>10</sup> and objective 9.3 "To position Brittany as a leading region in the MRE market". It is also in this area that the Region is implementing its Regional Sea and Coastal Strategy. Strand 4 targets environmental sobriety and adaptation to climate change, and even if it does not have a dedicated objective concerning the sea and the coast, it diffuses on these themes (passenger and freight traffic, taking into account the risks of marine submersion and erosion in the management of the coastline, waste management, biodiversity at sea, circular economy, etc.).
- DIRM NAMO is an associated partner in the development of the SRADDET. In addition, existing thematic bodies or those set up during the preparation of the SRADDET were mobilised as forums for information and/or consultation on the process. This is the case of the Regional Conference on the Sea and the Coast, which has existed in Brittany since 2007.
- The SEA of the SRADDET Bretagne produced in May 2019 analysed the articulation with the SBSO (on a version transmitted in October 2018) in a table with three columns: column 1) OSE or OE of the DSF, column 2) consideration in the objectives of the SRADDET and column 3) consideration in the rules of the SRADDET. The SEA concludes that: *"The objectives and rules of the SRADDET link well with the 15 environmental objectives of the DSF. Specific measures have been added in the objectives and*

<sup>9</sup> which absorbs the Regional Waste Prevention and Management Plan (PRPGD), the Regional Climate Air and Energy Plan (SRCAE), the Regional Ecological Coherence Plan (SRCE), the Regional Infrastructure and Transport Plan (SRIT), the Regional Intermodality Plan (SRI)

<sup>9</sup> 4.1 "Achieve significant development of containerised maritime transport from/to Brittany", 4.3 "Develop new innovative and virtuous maritime logistics chains"

<sup>10</sup> 8.1 "Accelerating the sustainable development of the fisheries and marine biotechnology sectors", 8.2 "Ensure simultaneously the preservation of marine and coastal ecosystems, the sustainable development of maritime activities and the free access of all to the sea by implementing a spatial planning of the coastal zone" and 8.3 "Consolidate and develop the industrial-port economy, through the determined orientation of the major Breton ports as platforms at the service of the sectors"

*"rules to ensure this linkage with marine ecosystems and coastal biodiversity. The only negative point raised concerns noise pollution, which is likely to increase with the development of maritime transport. The enforceability of Objective O30 should help to limit these impacts. With regard to the 14 socio-economic objectives, the Regional Outline Plan is also linked to the North Atlantic-Western Channel SBSDD while remaining within its areas of competence."*

- On the SBSDD side, it can be noted that the sufficiency analysis sheets mention the SRADDET several times in relation to the socio-economic objectives DE-OSE-I Research, DE-OSE-III Circular economy, DE-OSE-V Ports, TE-OSE-I Risks or TE-OSE-II Island territories. The action sheets and the DPA also mention it several times, particularly on the subjects of ecological transition, the circular economy, access of economic activities to the sea and maritime spatial planning, and coastline management.

The relationship between the SRADDET Pays de la Loire and the SBSDDNAMO is more complex to analyse insofar as the project has not been finalised and is therefore not available. However, it can be noted that:

- Five ambitions were put forward for debate during the drafting process: 1 - Building a "Greater West" dynamic, generating attractiveness and development for the Pays de la Loire, 2 - Affirming an ambition that reconciles blue growth and protection on the two key axes of our region's identity: the Loire and the Atlantic coastline, 3 - Strengthening territorial balance by reducing the risks of a territorial divide, 4 - Preserving our natural environment and taking action for a positive ecology geared towards green growth and innovation, and 5 - Mobilising all of the players in the Loire region in order to build policies that are adapted to the challenges of each area. It is therefore likely that ambition 2 will be the one that talks most about the sea and the coast. There are also likely to be minimal articulations in ambition 4.
- The Pays de la Loire Region has been co-chairing the Regional Assembly of the Sea and the Coast (ARML) with the State since June 2017 (see below).
- On the SBSDD side, it can be noted that the sufficiency analysis sheets mention the SRADDET several times in relation to the socio-economic objectives DE-OSE- III Circular economy, TE-OSE-I Risks or TE-OSE-II Island territories. The action sheets and the DPA also mention it several times, particularly on the subjects of ecological transition, the circular economy, access of economic activities to the sea and maritime spatial planning, and coastline management.

### REGIONAL, SEA AND COASTLINE STRATEGIES (SRML)

The draft action plan presented to the CMF on 23 November 2020 states that the SBSDD is linked to the regional sea and coastal strategies (SRML) of the Pays de la Loire and Brittany regions, which are drawn up, implemented and monitored through dedicated bodies, the Regional Sea and Coastal Assembly (ARML) in the Pays de la Loire and the Regional Sea and Coastal Conference (CRML) in Brittany.

The Pays de la Loire Region published the Ambition Maritime strategy in June 2018. Its development was based on the ARML, which was set up in 2017 and co-chaired with the State, as well as on the work of the CESERs of the Pays de la Loire and the Atlantic. The strategy covers the period 2018-2022 and is built around three pillars: 1 - Raising awareness - Raising awareness: promoting our maritime identity, 2 - Developing - Innovating: the challenges of blue growth and 3 - Protecting - Safeguarding: preserving and enhancing the sea and coastline. It refers to the SBSDDNAMO to specify *"locally these orientations through spatialised socio-economic and environmental objectives in the form of a vocational map."*

The CRML also published Brittany's strategy for the sea and coastline in June 2018. Its development was led by the State and the Region and co-constructed by and with all Breton stakeholders. It is the culmination of ten years of experience of the CRML, the territorial workshops of 2017-2018 and the prospective work carried out by the CESER of Brittany in 2017 - Brittany and the sea by 2040. The SML has set itself five major challenges for the future:

1 - To have marine and coastal ecosystems that are in good ecological condition and productive, 2 - To make the sea a development lever for the economy and employment on a regional scale, 3 - To promote resilient maritime territories that are welcoming and accessible to all, 4 - To make the sea a vector of openness to the world and a marker of identity, and 5 - To guarantee a regional governance adapted to an integrated maritime policy. The strategy is implemented through five-year action plans defining the priorities and the work to be carried out. It is the maritime component of the Breizh Cop<sup>11</sup> and the SRADDET which will be its regulatory version. As such, the Breton SML is an annex to the SRADDET. It is linked to the SBSDNAMO and states: *"All these priorities are consistent with the seven integrating issues of the SBSDNAMO. These priorities do not cover all the actions to be carried out, but should be considered as "gateways" to achieving these five major challenges."* The signing in February 2019 of the public action contract for Brittany has strengthened the role of the CRML and initiated the operational implementation of the SML concerning fisheries, marine renewable energies and ports.

It should be noted that the SBSDis also linked to the strategies developed by the departments where they exist.

### GRAND PORT NANTES-SAINT-NAZAIRE STRATEGY

The draft action plan presented to the CMF on 23 November 2020 emphasises that it will accompany the implementation of the strategic project of the Grand Port Maritime Nantes Saint-Nazaire (GPM NSN) in its ecological transition dimension. Indeed, an action sheet is dedicated to this support and includes several sub-actions aiming at 1) the deployment of alternative fuels and the electrification of quays, 2) the operational implementation of the coastal section of the Cordemais CTE (social issue of reclassification and development of hydrogen) and 3) the rise of the NSN MOC as a showcase for industrial and territorial ecology (circular economy and new port business models).

The NSN MOC 2020-2025 strategy is still being developed. In a working document of May 2020 entitled "A strategy for the Great Western National Port", we find this axis concerning the energy and ecological transition as one of the three major objectives of the port system and a major key to the success of the strategy. At this stage, it does not cite the DSF.

It should be noted that the Economic, Social and Environmental Council (CESER) of Pays de la Loire made a specific contribution for the NSN MOC entitled "What strategy for the future of the Port" which was presented at the October 2020 session<sup>12</sup>. He writes in particular that *"the announced reduction in fossil fuels is undoubtedly the main challenge for the Port of Nantes Saint-Nazaire since these currently represent 70% of its traffic. However, the decline in consumption and traffic of these energies could be accelerated by the economic crisis."* The CESER also advocates developing the circular economy and industrial and territorial ecology. The report does not mention the SBSDeither.

### OTHER STRUCTURING DOCUMENTS

The flood risk management plan (PGRI) for the Loire Bretagne basin 2016-2021 is coming to the end of its life and the plan for the 2022-2027 cycle has been the subject of an SEA for which the deliberate opinion of the Environmental Authority has recently been issued (October 2020). The PGRI must take into account the SBSDand must be compatible with the objectives of the MMAP. It reads: *"The dossier considers that the PGRI makes it possible to limit or avoid anthropic disturbances (flood protection works) affecting coastal environments and that it contributes to the preservation of coastal wetlands, with positive consequences for the natural purification of water and the maintenance of habitat areas for birdlife. Similarly, the option of favouring rainwater infiltration is*

<sup>11</sup> A process to mobilise the Breton territory, launched in 2017 by the Brittany Region, to respond to the climate and environmental emergency

<sup>12</sup> Report presented by Charles GENIBREL on behalf of the inter-commission working group on the Grand Port Maritime de Nantes Saint-Nazaire

*favourable to the quality of marine waters. According to the dossier, the PGRI thus contributes to the achievement of the strategic objectives of the strategic façade documents and the action plans for the marine environment.*

Other strategies or plans are coming to an end and the timetable for their revision is not known. This is the case in particular:

- the migratory fish management plan (PLAGEPOMI) for eels, salmon, shad, lampreys and sea trout for the Loire basin, which has been extended until the end of 2002;
- the regional economic development, innovation and internationalisation plans (SRDEII) for Brittany 2014-2020 and the Loire 2017-2021;
- the regional tourism and leisure development plans (SRDTL) for Brittany 2012-2015 and the Loire 2016-2020;
- regional strategies for integrated coastline management. In Brittany, there is a 2017-2019 action plan, while that of the Pays de la Loire appears to be even older.

Finally, it should be noted that the Regional Aquaculture Development Schemes (SRDAM) for the Pays de la Loire and Brittany remained at the draft stage at the end of the preparatory work, and that the continuation of this work will be closely linked to an action by the SBSDs dedicated to the definition of areas suitable for the development of marine aquaculture.



## 4. Coastline environmental issues

### 4.1. Structuring the issues to be considered

The sources mobilised to carry out the initial state of the environment and identify the environmental issues to be taken into account are mainly derived from the scientific production carried out in the context of the implementation of the second cycle of the MMAPs (initial assessment of the state of the marine environment and analysis of the environmental impact of human activities). Four main sources, partly annexed to the DFS's Maritime Frontage Strategy (MFS), have been mobilised in this production:

- the scientific and technical summary of the initial assessment of the ecological status of marine waters with regard to the 11 descriptors of the MSFD (Annex 2a of the SBSDSFM);
- the sheets associated with the environmental objectives (Annex 6a of the SBSDSFM, p31-298);
- the environmental issues map, including the mapping of ecological issues as well as the description of the sectors with identified ecological issues (Annex 5 of the SFM of the DSF);
- the environmental report of the strategic environmental assessment of the façade maritime strategies carried out in 2018 (hereafter referred to as "SEA1").

As the notion of environmental issue in the SEA sense is broader than the notion of ecological issue, we have taken up the structuring of issues established during the SEA1 proposing the consideration of 17 environmental issues divided into three categories, which are listed in the table below:

| Category of issues   | Acron. | Environmental issues                        | Correspondence to MSFD descriptors | Characteristic elements   |
|--|--------|---|------------------------------------|---|
| Issues related to the components of the marine environment | HB     | Benthic habitats                            | D1-HB                              | Quality of major habitat types biogenic, rocky, sedimentary, deep, wet  |
|  | MT     | Mammals and turtles                         | D1-MT                              | Distribution and abundance of species: home range of sedentary bottlenose dolphin groups, seal colonies, feeding areas, other cetaceans   |
|  | OM     | Seabirds                                    | D1-OM                              | Distribution and abundance of species: nesting, feeding areas, colonies, wintering sites of seabirds and coastal birds, areas of maximum density, functional areas  |
|  | PC     | Fish and cephalopods                        | D1-PC                              | Distribution and abundance of species: functional fishing areas (spawning grounds, nurseries), localized populations (benthic invertebrates, elasmobranchs), areas of concentration and migration of amphihaline fish |
|  | EC     | Commercial species                          | D3                                 | Stock status of commercially exploited fish and shellfish species   |
|  | RT     | Food webs                                   | D4                                 | Trophic balance   |
| Issues related to pressures on the marine environment      | NIS    | Non-indigenous species                      | D2                                 | Non-native species that are invasive or disrupt ecosystems  |
|  | Eut    | Eutrophication                              | D5                                 | Human-induced eutrophication  |
|  | Int    | Integrity of funds                          | D6                                 | Seabed integrity and artificialisation of the coastline   |
|  | Hyd    | Modification of the hydrographic conditions | D7                                 | Hydrographic conditions   |
|  | Cont   | Chemical and biological contaminations      | D8 and D9                          | Chemical contaminants in the environment, phycotoxins, microbiological contaminants   |
|  | From   | Waste                                       | D10                                | Amount of floating waste and micro-waste on the shore, on the seabed, ingested  |
|  | Br     | Noise                                       | D11                                | Level of noise disturbance  |
| Other societal issues                                      | Pay    | Landscapes and underwater landscapes        | Not relevant                       | Elements of coastal (lighthouses, classifications) and underwater landscapes  |
|  | Air    | Air quality                                 | Not relevant                       | Greenhouse gases, air pollutants  |
|  | Ris    | Natural hazards and human hazards           | Not relevant                       | Climatic, natural and industrial risks  |
|  | Co     | Knowledge                                   | Not relevant                       | Production of knowledge about the environment, species, socio-economic activities   |

It should be noted that this reference framework of 17 issues was discussed and validated by the national SEA steering committee.

To complement the initial environmental assessment of the DSF, the initial environmental assessment detailed below seeks to further spatialise the components of the 17 environmental issues. For this purpose, a methodology based mainly on the FMS appendices of the DSF, and applicable zone by zone, was developed in order to differentiate the deviation from good environmental status (GES) by zone<sup>13</sup>.

<sup>13</sup> Annexes 2a and 6a of the SBSDSFM are the only studies available to date that have sought to



accurately assess the good environmental status of the 11 MSFD descriptors.

- In the case where the GES is assessed at the coastline scale (whole or part), two inputs were used to spatialise the GES gap:
  - the distribution of habitats/species at stake, specific to each area (case of: HB, MT, OM, PC, EC),
  - the existence of spatialised maps of the results enriching the GES (case of: Eut, Cont).
- In the case where the GES could not be assessed, the choice was made to define a "level of challenge" based on the distribution of anthropogenic activities, which makes it possible to: either qualify the level of pressure exerted by anthropogenic activities on the challenge (case of: ENI, Art, Hyd, De, Br, Air, Ris), or to assess this level on the basis of elements favourable to the issue (case of: Pay, Co).

Thus, the spatialisation obtained is the object of a cross between the results on the status of the good environmental status given at the scale of the façade and the specificities of each vocation zone partly criticized and qualified in the appendices of the SFM of the SBSD<sup>14</sup>.

These results are accompanied by a reliability parameter summarised by issue and by zone.

The detailed methodology is presented in the annexes to the environmental report (Annexes 1 and 2).

## 4.2. Issues related to the components of the marine environment

The NAMO coastline is characterised by:

- ▢ a vast natural public maritime domain linked to the strong tidal range and very indented coasts, with numerous roadsteads, bays, abers and rias, the Gulf of Morbihan and important wetlands in the south with the Loire estuary, the Guérande salt marshes, the Brière, the Breton marshes of the Vendée, etc.
- ▢ a shallow continental shelf (0 to -200 m) limited by a continental slope cut by numerous canyons, which join the abyssal plain (- 5000 m).
- ▢ more than a dozen islands sometimes located at a distance from the coast (Yeu Island more than 20 km from the mainland, Belle-île 14 km from Quiberon).

It includes the Celtic Seas Marine Sub-Region (MRS) and the northern part of the Bay of Biscay MRS and concerns 11 key areas<sup>15</sup>. It should be noted that these sectors do not correspond identically to the vocational zones: several vocational zones may be located at the interface between two or even three MMN sectors, or conversely be included in a larger MMN sector.

<sup>14</sup>Scientific assessment of the status of the GES carried out in 2018 presented in Annex 5 of the SBSDSFM (detailed analysis, incorporating assessment criteria) and Annex 6a of the SBSDSFM (summary of results by sheet); distribution of habitats and species at stake by MMN sectors presented in Annex 5.

<sup>15</sup>Gulf of Normandy (Emerald Coast and Bay of Saint Briec) / Seven Islands - Pink Granite Coast - Trégor Goëlo / Bay of Morlaix - Pays des Abers / Iroise (including the Bay of Brest) / Celtic Sea and Western Channel / North Slope, meriadzeck terrace and Trevelyan escarpment / Bay of Biscay plateau - Grande Vasière / Cornish coast / Lorient/Groix coast / South-East Brittany - Mor Braz / Loire estuary and Vendée coast

### 4.2.1. Benthic habitats

#### LOCALISATION OF HIGH-ISSUE HABITATS AND EVALUATION OF THEIR STATUS AT THE COASTLINE LEVEL

On the coast, **rocky habitats** cover large areas abundantly colonised by wrack and kelp, particularly in the Iroise Sea, off Noirmoutier and in the Loire estuary. These seaweed belts play a key role in providing a habitat for a range of animal species (including commercially important species such as abalone, shrimp and edible crabs) and plant species (red algae). The ecological issue of rocky habitats is reported in 7 of the 11 sectors of the NAMO coast (strong in 3 sectors). The good environmental status (GES) of these habitats is not known on this coastline, but the conservation status of the reefs (intertidal and subtidal combined) was assessed as inadequate in the Atlantic Channel area, under Natura 2000 in 2012.

These rocky environments are interspersed with mainly coarse **sedimentary bottoms** where large banks of maerl, eelgrass beds and hermella reefs develop. Similarly, the Northern Bay of Biscay sub-region is particularly representative of sublittoral mudflats, with three quarters of the national surface area. The main mudflats are located opposite the Vilaine and Loire estuaries and to the north-east of the Glénan, to which must be added the mudflats of the Gulf of Morbihan and the Loire estuary. It is also worth noting the large mudflat located on the Bay of Biscay plateau sector, a vast area extending over nearly 20,000 km<sup>2</sup> from the tip of Penmarc'h to the Rochebonne plateau at a depth of 50 to 120 metres. It is an outstanding area of the marine region (OSPAR Convention habitats) and a key habitat for many species, including Norway lobster and hake. This area is home to the pennate vases which are evidence of less disturbed areas. The ecological issue of sedimentary habitats is reported in 10 out of 11 sectors of the NAMO coast (major/strong in 3 sectors). The good environmental status (GES) of sedimentary habitats is not known on the NAMO coast, but their conservation status was assessed as poor (3 habitats) or inadequate (3 habitats) in the Atlantic Channel area, under Natura 2000 in 2012. In addition, of the 35 habitats assessed in the Atlantic in the framework of the European Red List of Habitats<sup>16</sup>, 1 is critically endangered, 11 threatened, 7 vulnerable and 6 near threatened, none of which is classified as non-threatened.

In addition, the majority of the French surface area of **biogenic habitats**, maerl, eelgrass, hermella reefs, as well as kelp and shellfish sands, are located on this coastline (Celtic Sea MMN), which gives it a particular responsibility for their conservation. The ecological issue for these habitats is reported in 9 out of 11 sectors and is really significant (major/strong in 4 sectors): in particular, major on the maerl banks in the Iroise sector or on the Cornish coast or the Lorient coast. Intertidal hermit crab reefs are near-threatened at the European level.

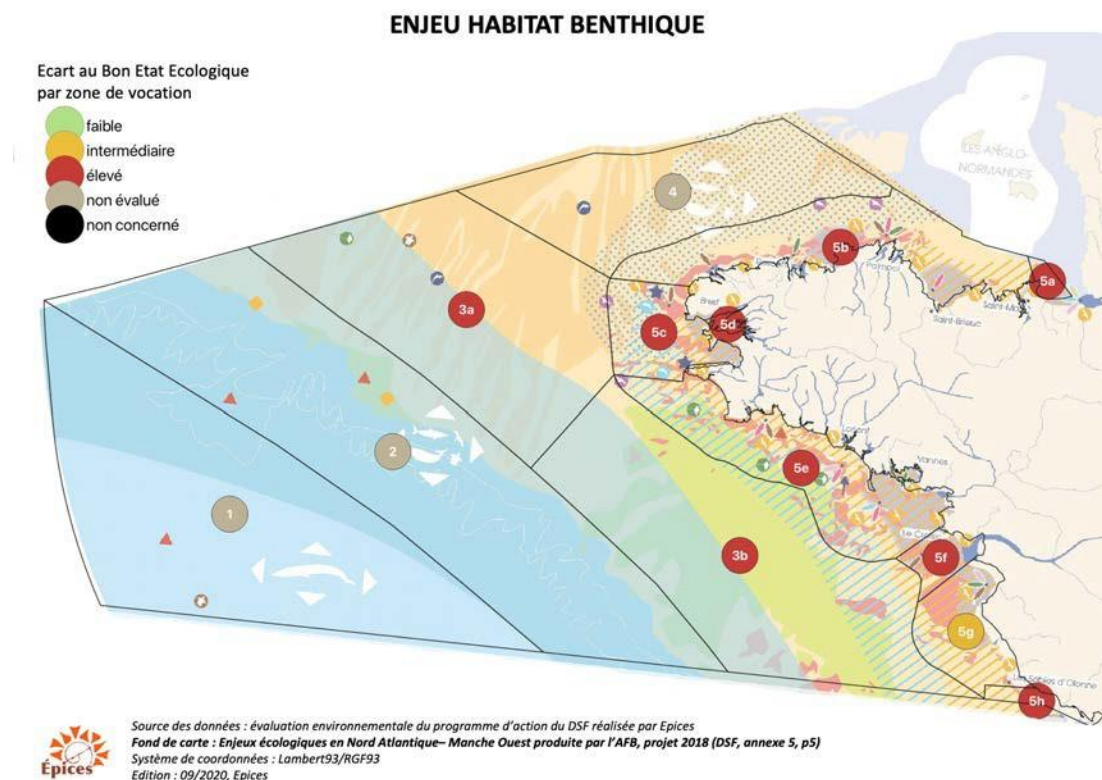
The issue concerning specifically the **Atlantic salt meadows and the pioneer salicornia vegetation** is more remote on the coast (reported as strong only in the mer des Pertuis sector and the Gironde plume on the South Atlantic coast), associated with other biogenic habitats such as the dwarf eelgrass beds. The good environmental status (GES) of these habitats is not known on this coastline, but their conservation status was assessed as poor (1 habitat) and inadequate (4 habitats) in the Atlantic Channel area, under Natura 2000 in 2012. In addition, the Atlantic salt meadows are threatened on the European red list of habitats.

Further offshore, the seabed is made up of coarse sediments and heterogeneous bottoms that form large **underwater dune** systems in the central English Channel and off the tip of Brittany. The oceanic slope has a remarkable biodiversity, including the largest coral mass observed on the Atlantic slope, in particular in the Sorlingue and Petite Sole canyons. Biodiversity can be three times greater than on the

<sup>16</sup> European Commission 2016

surrounding soft sediments. The ecological issue of the hydraulic dunes of the plateau and the top of the slope comes back in 8 sectors out of 11 and is always strong (hydraulic dunes of shell sands for the plateau). The achievement of good environmental status (GES) for these habitats is not known on the NAMO coast, but the conservation status of the Atlantic subtidal sandbanks was assessed as poor under Natura 2000 in 2012, even though it is broader than just shellfish sands. In addition, on a European level, the coarse sands of the near circalittoral zone are threatened.

#### SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: DEVIATION IN GES



In terms of deviation from good environmental status, only the vocation zone 5g Baie de Bourgneug- littoral vendéen stands out from the other zones by having a deviation from GES classified as "intermediate" on the contrary to the other zones with a "high" deviation when assessed. However, it is important to note that of the 15 habitat types at stake in ZV5g (MAPM sector 20), none is in good condition: most are classified in conservation status "Inadequate" under Natura 2000, or 'vulnerable' under the European Red List or not assessed.

For three areas it was not possible to approach the GES gap due to the lack of data on the status of the habitats of concern in that area. For the remaining 10 areas, the reliability of the results obtained is considered low as the deviation from the GES is mainly based on Natura 2000 data and the European Red List classification of habitats where possible, as the status of the GES could not be assessed on its own.

#### PRESSURES ON HABITATS

The **main pressures exerted by human activities on benthic** habitats are as follows (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

| Benthic habitat type<br>Pressure-generating activity | Intertidal rocky habitats | Subtidal and circalittoral rocky habitats | Sedimentary habitats | Eelgrass beds  | Salt meadows   |
|--|---------------------------|---|----------------------|----------------|----------------|
| Maritime public works                                | No <b>Yes</b>             | No <b>Yes</b>                             | No <b>Yes</b>        | No <b>Yes</b>  | No <b>Yes</b>  |
| Artificialisation of the coastline                   | No <b>Yes</b>             | No <b>Yes</b>                             | No <b>Yes</b>        | No <b>Yes</b>  | No <b>Yes</b>  |
| Agriculture and industry                             | No <b>Yes</b>             |   |                      |                | No <b>Yes</b>  |
| Professional fishing                                 | Yes <b>Yes</b>            | Yes <b>Yes</b>                            | Yes <b>Yes</b>       | Yes <b>Yes</b> |                |
| Recreational fishing                                 | Yes <b>Yes</b>            |   | Yes <b>Yes</b>       |                |                |
| Aquaculture  |                           |   |                      | Yes <b>Yes</b> |                |
| Extraction of materials                              |                           |   | No <b>Yes</b>        |                |                |
| Coastal tourism                                      |                           |   |                      | Yes <b>Yes</b> | Yes <b>Yes</b> |
| Beach activities and beach use                       |                           |   | No <b>Yes</b>        | Yes <b>Yes</b> |                |
| Boating and water sports                             |                           |   |                      | Yes <b>Yes</b> |                |

Caption:

- ✓ Activity generating pressure for the habitat type (most contributing)
- ✓ Activity dependent on the ecological status of the habitat type

#### 4.2.2. Mammals and turtles

##### LOCATION OF MAJOR ISSUES CONCERNING MARINE MAMMALS AND TURTLES AND ASSESSMENT OF THEIR CONDITION AT THE SCALE OF THE COASTLINE

With its rocky coastline and numerous islets, the Celtic Sea marine sub-region is by far the most important for **grey seal** breeding. In addition, the archipelagos in areas of strong currents and tides are particularly suitable functional areas for grey seal colonies (Seven Islands Archipelago and Iroise Sea) and sedentary groups of **bottlenose dolphins** (Normandy Breton Gulf and Iroise Sea). Indeed, the ecological issues concerning these marine mammals are notified as follows: 1) in 3 sectors out of 11 as home range of sedentary bottlenose dolphin groups (major in the Normandy-Breton Gulf sector and strong in the Iroise sector) and 2) in 4 sectors out of 11 as seal colonies and feeding areas (major for the grey seal in the above sectors).

Further offshore in the Celtic Sea sub-region, the thermal front (Ouessant) is an important area in summer for marine mammals (**harbour porpoise and common dolphin**), with a high concentration at European level for the latter species. The Celtic Sea shelf and slope is also an important area for cetaceans and the **leatherback turtle**. In the Northern Bay of Biscay sub-region, in winter, delphinids and porpoises are particularly present in areas between 50 and 100 metres deep. The ocean slope area is a major functional area on a European scale for marine megafauna. All the cetacean species of the Bay of Biscay can be seen here (delphinids, pilot whales, Risso's dolphin, sperm whales, beaked whales and orcas). The ecological issues concerning these species are reported as follows:

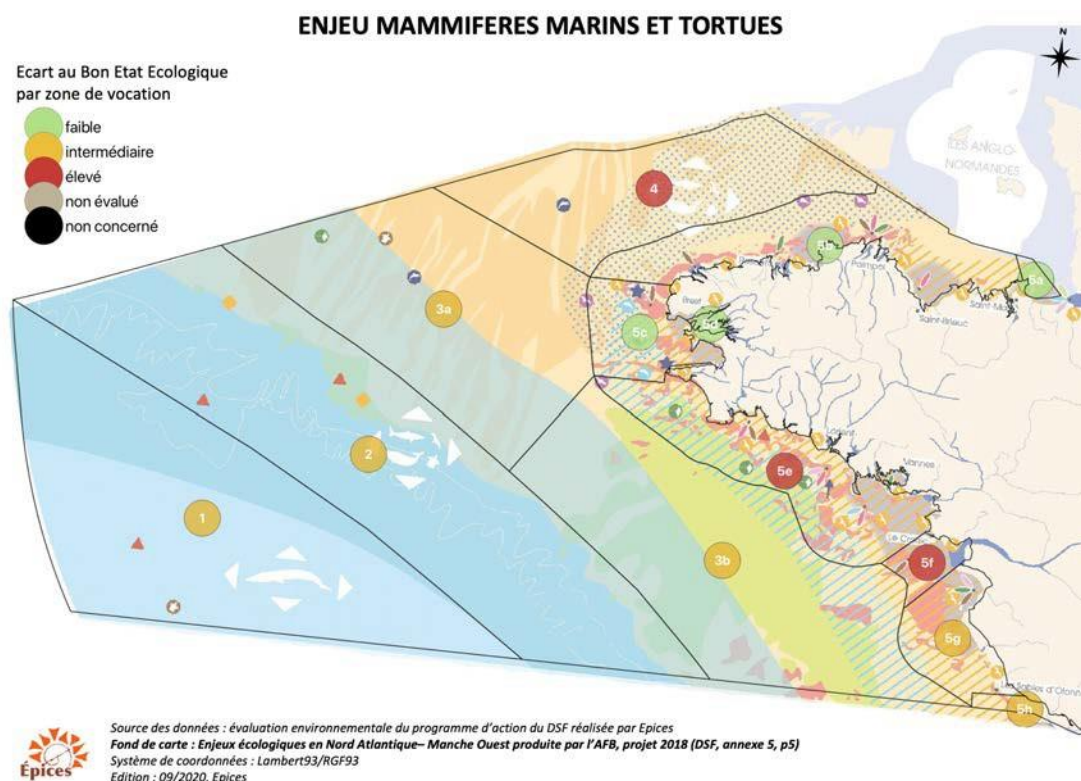
1) in 4 sectors out of 11 as an area of maximum density for harbour porpoise (strong for the Celtic Sea and Western Channel and North Slope sectors), 2) in 7 sectors out of 11 for other cetaceans (strong for the Celtic Sea and Western Channel and North Slope sectors for maximum diversity, transverse for several sectors in the Northern Gulf



of Biscay) and 3) in 1 out of 11 sectors for marine turtles (strong for the Celtic Sea and Western Channel sector).

The good environmental status (GES) of leatherback turtles is not known on the NAMO coast. On the other hand, it is a species classified as vulnerable on the IUCN world red list, with major issues and in particular an unfavourable population status. The pressures on grey seal colonies are compatible with good environmental status. Conversely, good environmental status is not achieved for dolphins and harbour porpoises on the scale of the NAMO coastline, due to high accidental catch rates.

#### THE SYNTHETIC SPATIAL DISTRIBUTION OF THE SCALE OF THE VOCATION ZONES: DEVIATION IN GES



It is possible to observe large spatial differences in GES deviation between areas, as a result of the spatial analysis of high stakes for mammal and turtle populations. Offshore areas with a high presence of small cetaceans and a high stake, the GES deviation is classified as "intermediate". The only offshore area with a high GES gap is ZV4 Western Channel where the leatherback turtle weighs more heavily in the list of species at stake and thus increases the GES gap on the MT issue. With regard to the eight VZs in the Territorial Sea, there is a clear difference between the VZs to the north and south of the coastline. Indeed, the GES deviation is rather low in the Celtic Sea while it is rather high in the Bay of Biscay. This is due to the fact that in the Celtic Sea, mammal and turtle populations are in better condition (presence of seal populations in good condition, harbour porpoise in better condition than in GoG).

Except for ZV5f where the reliability of the results is considered low<sup>17</sup>, the reliability of the GES deviation classification by zone is considered medium.

<sup>17</sup> Low reliability: only one species of concern is identified (Annex 5 of the SBSDSFM) for which only one criterion out of 4 for the assessment of status has been evaluated (Annex 2a of the SBSDSFM).

**PRESSURES ON MARINE MAMMALS AND TURTLES**

The **main pressures exerted by human activities on marine mammals and turtles** are as follows (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

| Pressure-generating activity           | Marine mammals and turtles |
|--|----------------------------|
| Maritime transport and ports           | No Yes                     |
| Professional fishing                   | No Yes                     |
| Power generation                       | No Yes                     |
| Coastal tourism                        | Yes Yes                    |
| Beach activities and beach use         | Yes Yes                    |
| Agriculture                            | No Yes                     |
| Boating and water sports               | Yes Yes                    |
| Defence and public intervention at sea | No Yes                     |
| Industries                             | Yes                        |

Caption:  
 ✓ Activity generating pressure for marine mammals and turtles (the most contributory)  
 ✓ Activity dependent on the ecological status of marine mammals and turtles

**4.2.3. Seabirds****LOCATION OF MAJOR ISSUES FOR SEABIRDS AND MARINE MAMMALS AND EVALUATION OF THEIR STATUS**

With its rocky coasts and numerous islets, the Celtic Seas marine sub-region is the most important for nesting **seabirds** (alcids, gannets, storm-petrels, crested cormorants and great black-backed gulls) and, to a lesser extent, **coastal waders** (oystercatchers and great grey herons). The bays and estuaries (Bay of St Brieuc, Lannion, Goulven, Douarnenez and the Bay of Brest) are important shelter and feeding areas for marine species (Balearic Shearwater, Red-breasted Merganser and Arctic Loon). Further offshore, the thermal front (Ouessant) is an important area in summer for bird species (gannets, northern fulmars, shearwaters, alcids).

The coastal waters of the northern Bay of Biscay are an important area for the concentration of marine avifauna, particularly in summer, especially for the globally threatened Balearic shearwater. Seabirds are much less numerous at sea. The Gulf of Morbihan and the Loire estuary are nevertheless important wintering sites at international level and the numerous islands and islets distributed along the coastal strip are important sectors for the nesting of marine avifauna (terns, gulls, crested cormorants and Mediterranean gulls). In the hinterland, the Breton marsh is a major site for breeding shorebirds (avocets, white stilts and redshanks), while the Breton coastline is frequented by the red-necked gravelot.

At the scale of the coastline, the ecological issues concerning seabirds are described as follows:

- Eight sectors out of 11 present a challenge for colonies and feeding areas for seabirds, 6 of which are classified as major/strong (notably major for the common murre in the Normandy-Breton Gulf, for the gannet, the Atlantic puffin, the razorbill



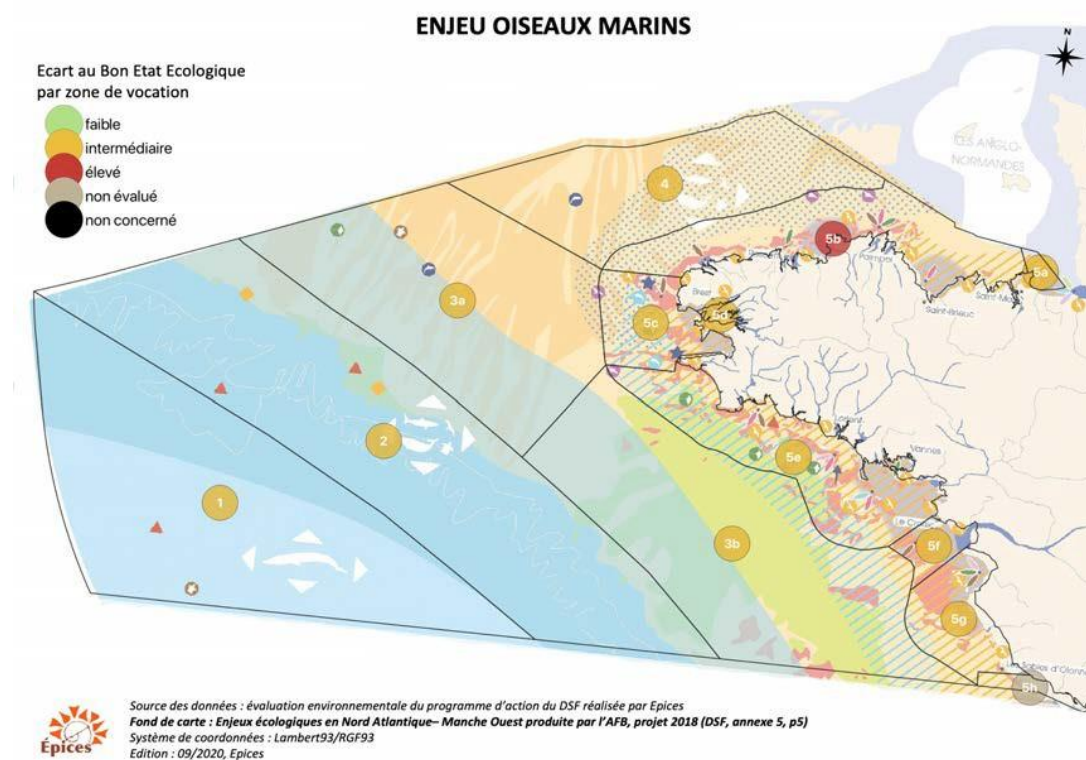
and the English shearwater in the Seven Islands sector, for the storm-petrel in the Iroise, for the roseate tern on the Cornish coast, for the brown gull in South East Brittany).

- ▢ Nine sectors out of 11 present a maximum density issue and functional areas identified for seabirds during the breeding season, always qualified as major/strong (in particular major for all species in the Iroise, on the Cornish coastline, in South East Brittany).
- ▢ Six sectors out of 11 present a challenge for nesting and feeding areas for waders, 2 of which are classified as major/strong (particularly major in the Loire estuary and Vendée coast sector).
- ▢ Five out of 11 areas have a wintering site issue for waterbirds, all of which are rated as strong. The Normandy-Breton Gulf is home to 20,000 wintering waterbirds.

It is difficult to have an overall perception of the ecological status of seabirds on the NAMO coast. Indeed, it is based on four criteria, with different bird assessment rates for different marine sub-regions. However, a quick summary can be attempted:

- ▢ On the abundance of breeding seabirds: mixed ecological situation;
- ▢ On the abundance of coastal shorebirds: favourable ecological status (GES - good environmental status - achieved);
- ▢ On the abundance of seabirds: no assessment in the Celtic Sea so difficult to specify even if the situation seems favourable in the Bay of Biscay;
- ▢ On the production of young seabirds: also difficult.

#### SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: DEVIATION IN GES



Between areas, the fine GES assessment of different seabird species is quite variable (i.e. it is not necessarily the same species for which the GES is good or bad). After applying the weighted assessment on the species with the highest stakes in each area, they all have the same "intermediate" GES deviation except for ZV5b where a majority of species with major and high issues do not reach the GES (high GES deviation).

The reliability analysis shows two groups of zones: ZV1, ZV2, ZV3a and ZV4, for which the reliability of the results obtained for the GES deviation is medium, while the other zones have low reliability. For the former, a small number of species at stake are identified and they are on the whole rather well evaluated on several GES criteria, thus making it possible to obtain a relatively reliable result. In contrast, for the other areas, there are more species at stake, but unfortunately, most of them are not assessed under the GES. Zone 5h is the extreme case, as only 2 out of 20 identified species are assessed under the GES, leading to the issue being classified as 'not assessed'.

#### PRESSURES ON SEABIRDS AND COASTAL BIRDS

The **main pressures on seabirds from human activities** are as follows (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

| Pressure-generating activity       | Seabirds             |
|------------------------------------|----------------------|
| Coastal tourism                    | Yes <span>Yes</span> |
| Beach activities and beach use     | Yes <span>Yes</span> |
| Boating and water sports           | Yes <span>Yes</span> |
| Artificialisation of the coastline | No <span>Yes</span>  |
| Professional fishing               | No <span>Yes</span>  |
| Power generation                   | No <span>Yes</span>  |
| Recreational fishing               | No <span>Yes</span>  |

Caption:  
 ✓ Pressure-generating activity for seabirds (most contributing)  
 ✓ Activity dependent on the ecological status of seabirds

#### 4.2.4. Fish and cephalopods

##### *ALL SPECIES <sup>18</sup>*

#### LOCALISATION OF MAJOR ISSUES CONCERNING FISH AND CEPHALOPODS AND EVALUATION OF THEIR CONDITION

For fish species, knowledge is rather patchy due to the absence, until very recently, of regular fishing campaigns.

Nevertheless, functional areas have been identified:

- **Spawning grounds** in the central Channel (spider crab, sea bass, brill, lemon sole, sardine, sole, sprat, etc.), on the coast (curly ray, grey mullet and cuttlefish) or on the slope (horse mackerel,

<sup>18</sup> Corresponding to descriptor D1 GES

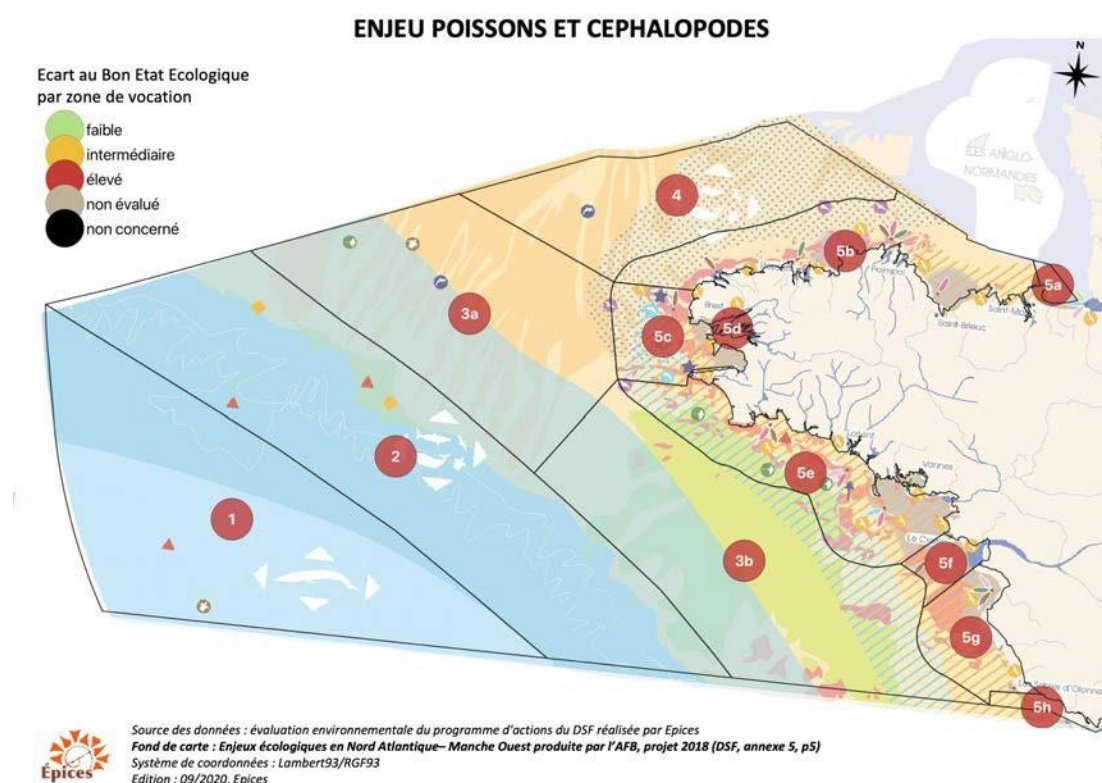
mackerel, hake, sardines). The ecological issue of functional fishing areas  
The "spawning grounds" are notified for all sectors of the coastline and always strongly.

- ▣ **Nurseries** on the coast for many species of fish (pollack, sea bass, brill, curly ray) and crustaceans (edible crab, spider crab, lobster). The ecological issue of functional fish "nursery" zones is notified for almost all sectors of the coastline and always strongly so. The GES of spawning and nursery grounds is not known to have been reached on the NAMO coast.
- ▣ The large mudflat in the Bay of Biscay is a major spawning ground and nursery for hake and langoustine.
- ▣ The Loire and the Vilaine are the two major rivers for **amphihalines** (shad, lamprey, salmon and eel). These same species are also distributed in the small rivers of Brittany. The ecological issue concerning the concentration and migration sectors for amphihaline fish is reported for 9 out of 11 sectors (major/strong for four sectors, particularly major for eels in the Loire estuary. Good environmental status is not achieved for any of the species. The trend in overall status is downward for the European eel, the only species for which the trend is known.

The GES of **fish and cephalopods** is not well known on the coast, with the exception of sea bass, common dentex, brown grouper and corb, for which good environmental status has not been achieved and is in decline. The risk of extinction for all other species is considered to be of "minor concern" by the UICN (International Union for Conservation of Nature).

Several species of **elasmobranchs** with very unfavourable conservation status are present on the NAMO coast (white skate, angel shark and skate). The Glénan area is a sector for the small grey skate. The coastal waters of the northern Bay of Biscay are an important area for basking sharks in spring and summer. This is probably linked to the hydrographic structures (cold bulge, upwellings and estuarine plumes). The ecological issue of locally important elasmobranch populations is notified for 8 sectors out of 11 (strong in 6 sectors: brown skate in the Normandy-Breton gulf, skate and basking shark in several sectors, porbeagle shark on the northern slope, curly skate in the Iroise) The ecological status of elasmobranchs is very poorly known, but good environmental status is noted as not being achieved for basking and porbeagle sharks and angel sharks.

## SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: DEVIATION IN GES



Regardless of the area of vocation, there are too few fish and cephalopod species for which the GES is achieved. Thus, there is a high deviation from the GES on the overall issue of fish and cephalopods on the entire coastline. Furthermore, the reliability of these results is low because for many of the species identified in Annex 5 of the SFM of the DSF, the status of the GES has not been assessed.

### PRESSURES ON FISH AND CEPHALOPODS

The **main pressures exerted by human activities on fish and cephalopods** are as follows (source: detailed EO datasheets in Annex 6a of the SBSDSFM):

| Type of fish and cephalopods<br>Pressure-generating activity | Fisheries functional areas | Coastal fish and cephalopods | Areas of concentration and migration of amphihalines | Elasmo branches |
|--|----------------------------|------------------------------|--|-----------------|
| Maritime transport and ports                                 | No Yes                     |                              |  |                 |
| Maritime public works  | No Yes                     | No Yes                       |  |                 |
| Power generation   | No Yes                     |                              |  |                 |
| Extraction of materials                                      | No Yes                     |                              |  |                 |
| Professional fishing   | Yes Yes                    | Yes Yes                      | Yes Yes  | No Yes          |
| Recreational fishing   | Yes Yes                    | Yes Yes                      | Yes Yes  | Yes Yes         |

|                                    |                |                |                |                |
|------------------------------------|----------------|----------------|----------------|----------------|
| Artificialisation of the coastline | No <b>Yes</b>  | No <b>Yes</b>  | No <b>Yes</b>  | No <b>Yes</b>  |
| Coastal tourism                    | Yes <b>Yes</b> |                | Yes <b>Yes</b> |                |
| Boating and water sports           | Yes <b>Yes</b> | Yes <b>Yes</b> | Yes <b>Yes</b> |                |
| Beach activities and beach use     |                |                | Yes <b>Yes</b> | Yes <b>Yes</b> |

Caption:

- ✓ Pressure-generating activity for fish and cephalopods (**most contributory**)
- ✓ Activity dependent on the ecological status of the type of fish and cephalopods

### COMMERCIAL SPECIES <sup>19</sup>

Stock status is assessed on the basis of 1) fishing mortality and 2) spawning stock biomass <sup>20</sup>:

- In the Celtic Sea marine sub-region, out of 64 species surveyed, 17 stocks could be assessed (26%): Seven reach the GES (sole, plaice - West Channel stock, whiting, hake, blue ling, Atlantic bluefin tuna, swordfish) and 10 do not (sea bass, cod, haddock, megrim, plaice - South West Ireland stock, horse mackerel, mackerel, blue whiting, albacore tuna, dogfish);
- In the Bay of Biscay marine sub-region, out of 56 species surveyed, 10 stocks could be assessed (18%): Three achieve GES (hake, Atlantic bluefin tuna, swordfish) and seven do not (megrim, sole, horse mackerel, mackerel, blue whiting, albacore, dogfish).

However, the results obtained over the past decade show that conditions are improving for many of the stocks surveyed. In addition, the number of fish stocks assessed quantitatively has increased significantly on the NAMO coast (2.5-fold).

With regard to the deviation from the GES spatialised to the vocation areas, as the assessment of the GES status is too fragmented for the stock, the results for descriptor D1-PC fish and cephalopods have been transposed to the commercial species issue: the deviation from the GES is therefore considered to be high in all vocation areas (see map above). This is fairly consistent with the few species whose stock GES has been assessed (see paragraphs above), where it can be seen that the majority do not reach the GES in either MC or GoG.

## 4.2.5. Food webs

### LOCATION OF MAJOR ISSUES CONCERNING FOOD WEBS AND EVALUATION OF THEIR STATUS

The NAMO coastline has several specific **pelagic habitats** : the land-sea interface zones (Bay of Saint-Brieuc, Bay of Lannion, Bay of Brest, Bay of Dournenez), the zones of strong currents (Iroise) and strong tidal ranges (Bays of Mont Saint Michel and Saint Brieuc), the frontal zone associated with the oceanic slope, the zone of the cold bulge and the upwellings of Southern Brittany, the estuary plumes (Loire and Vilaine), the large sheltered bays (Gulf of

<sup>19</sup> Corresponding to descriptor D3 GES

<sup>20</sup> The reference value is calculated by the scientific expert groups for each stock according to the principle of maximum sustainable yield



Morbihan and Bay of Bourgneuf). These habitats are the site of important **primary and secondary production** that structures the **food webs**. Planktonic communities (high planktonic biomass associated with the Ouessant front) on the one hand, and small pelagic fish (particularly mackerel and sardines) on the other, occupy a central place.

The ecological issue concerning particular hydrological structures is reported for 7 out of 11 sectors of the coastline and that concerning land-sea interface zones for 6 sectors, and almost always a strong issue. The ecological status of pelagic habitats and food webs is not qualified. However, some areas (Bay of St Brieuc, Bay of Goulven, Bay of Brest, Loire River plume) present a medium to high risk with regard to turbidity modification.

#### SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: DEVIATION IN GES

The GES status has not been assessed for this issue. Especially, it was not possible to spatialise the GES deviation at the level of the vocation zones.

## 4.3. Issues related to pressures on the marine environment

### 4.3.1. Non-native species

#### ORIGINS OF PRESSURE ENI AND ASSESSMENT OF THE ISSUE LEVEL

The **main activities generating the introduction/proliferation of non-native species** are the following (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

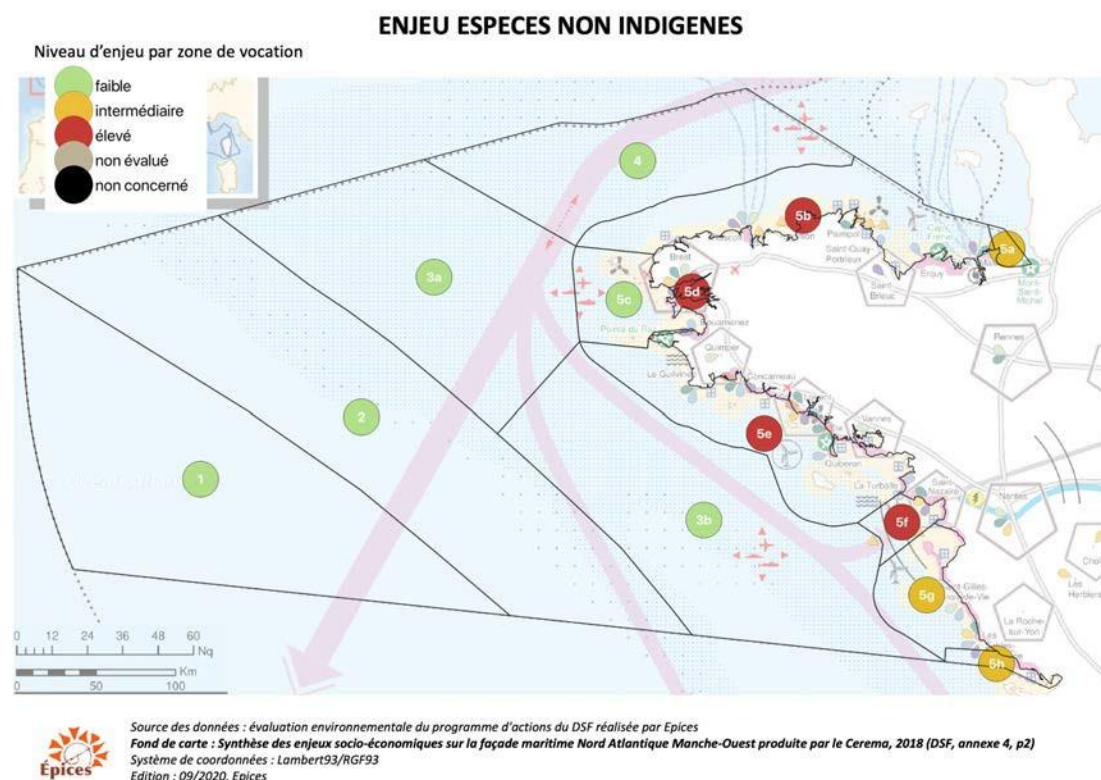
| Pressure-generating activity           | Non-native species |
|--|--------------------|
| Maritime transport and ports           | No <b>Yes</b>      |
| Defence and public intervention at sea | No <b>Yes</b>      |
| Aquaculture                            | Yes <b>Yes</b>     |
| Boating and water sports               | No <b>Yes</b>      |
| Recreational fishing                   | Yes <b>Yes</b>     |
| Artificialisation of the coastline     | No <b>Yes</b>      |

Caption:

✓ Activity leading to the introduction of non-native species (**most contributory**)

✓ Activity dependent on the state of proliferation of non-invasive species

The state of disturbance of ecosystems by non-native species is not known on the NAMO coast, so the GES is not assessed on this issue. However, 7 new non-native species have been reported in the Celtic Seas (two ascidians, one amphipod, one polychaete, one alga and two gastropod molluscs), and 7 also in the northern part of the Bay of Biscay (two ascidians, one amphipod, one polychaete, one copepod and two red algae), of which two are common (one ascidian and one polychaete).

**SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL**

Spatialisation of the NIS issue by vocation area was based on the distribution of activities that could exert pressure on the issue to determine a higher or lower level of issue. Four vocational zones have a high level of concern regarding NIS: ZV5b, 5d, 5e and 5f, because they combine the presence of shellfish farming areas, aquariums and commercial ports, and even a large commercial port in the case of ZV5f, where the large port of Nantes Saint-Nazaire is located. ZV5d is also affected by the presence of military bases. Finally, with the exception of the Iroise PNM, which is classified as a low-risk area due to the absence of each of these pressures, the other VZs are classified as intermediate, mainly due to the presence of shellfish farming areas. The offshore areas are less affected by NIS and are classified as low risk.

Concerning the assessment of the costs of degradation in this chapter, only the costs of monitoring and information could be correctly entered (approximately €705 and 545 K respectively for the Celtic Sea and Bay of Biscay marine sub-regions). Mitigation costs are often included in the overall costs of shellfish farm clean-up and little information is provided on residual impacts. Thus, it seems that we are still in a phase of characterisation of the pressure and not of implementation of management actions for non-native species.

### 4.3.2. Eutrophication

#### ORIGINS OF EUTROPHICATION AND ASSESSMENT OF THE ISSUE LEVEL

The **main eutrophication-causing activities** are the following (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

| Pressure-generating activity | Eutrophication |
|------------------------------|----------------|
| Agriculture                  | Yes            |
|                              | No             |



|   |     |     |
|---|-----|-----|
| Artificialisation of the coastline  | No  | Yes |
| Maritime transport and ports  | No  | Yes |
| Industries  | No  | Yes |
| Coastal tourism, seaside activities and beach use, boating and water sports | Yes | No  |
| Aquaculture   | Yes | No  |
| Extraction of materials   | No  | Yes |
| Recreational fishing  | Yes | No  |

Caption:

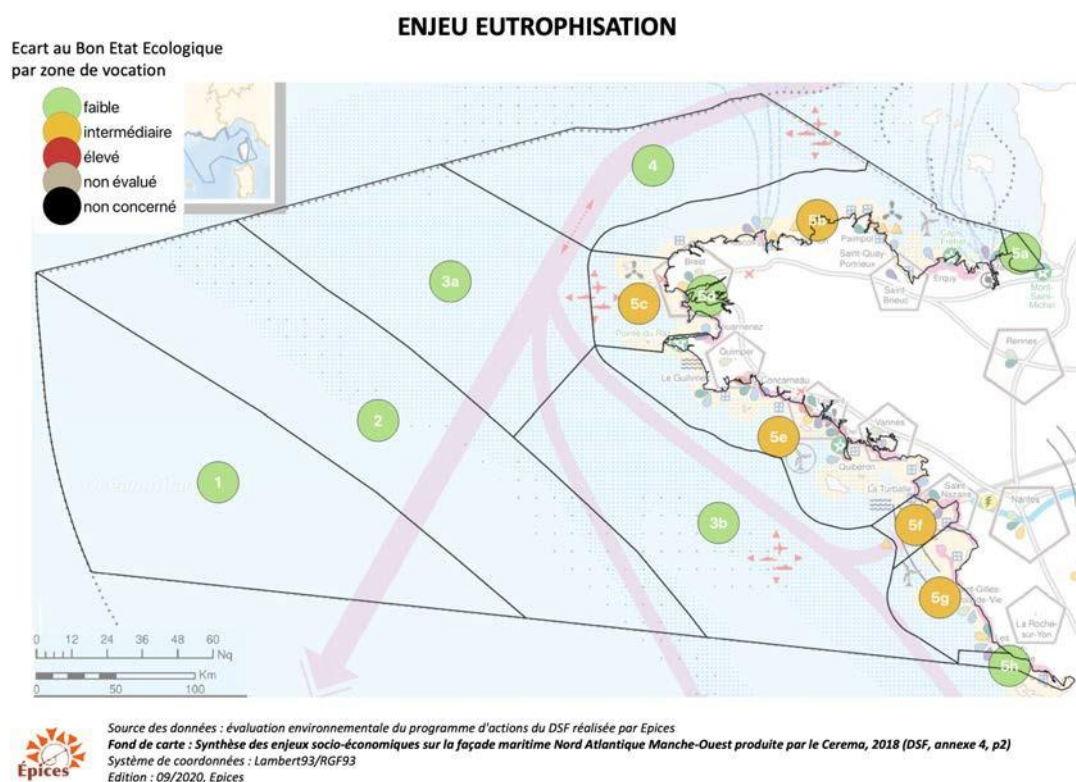
✓ Eutrophication generating activity (most contributing)

✓ Activity dependent on eutrophication status

Human-induced eutrophication causes negative ecological effects, such as loss of biodiversity, ecosystem degradation, toxic algal blooms and deoxygenation of seabedwaters. The NAMO coastline is little affected by eutrophication, as 97-98% of the coastline achieves good environmental status, with eutrophication being very limited. Thus, 1) the offshore areas are not affected, 2) between the coast and the offshore areas (58 km<sup>2</sup> at the mouth of the Loire), eutrophication is very localised to certain areas and 3) the coastal zone is more affected locally because of the water bodies'

"Green algae" (bottom of the Bay of Saint Brieuc, Bay of Lannion, Douarnenez, Concarneau or the Gulf of Morbihan).

#### SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL



The above is fairly well reflected in the spatialisation by vocation zone: areas affected by localised eutrophication are classified as "intermediate" in the

GES, in contrast to the other zones. It should be noted that, even if the impact appears to be less on the scale of the coastline, the Breton coastline is nevertheless the most affected by the green algae phenomenon, in spring and summer. Thus, the costs of degradation due to eutrophication represent 43.7% of the costs on a national scale in the Celtic Seas marine sub-region and 19.1% in the Bay of Biscay marine sub-region (in particular the Breton bays of Douarnenez, Quiberon, etc.). Most of the costs assessed concern avoidance and prevention costs (around 95% - programme to preserve water quality in Brittany, agri-environmental measures, etc.). The NAMO coastline concentrates almost all the costs of collecting and treating green algae. As for the Green Algae Action Plan (PLAV), about half of the costs of monitoring and information in the Celtic Seas (more focused on research on eutrophication and monitoring of phytoplankton in the Bay of Biscay).

### 4.3.3. Seabed integrity

#### ORIGIN OF PRESSURES AFFECTING THE INTEGRITY OF THE SEABED AND ASSESSMENT OF THE ISSUE LEVEL

The **main activities affecting the integrity of the seabed** are the following (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

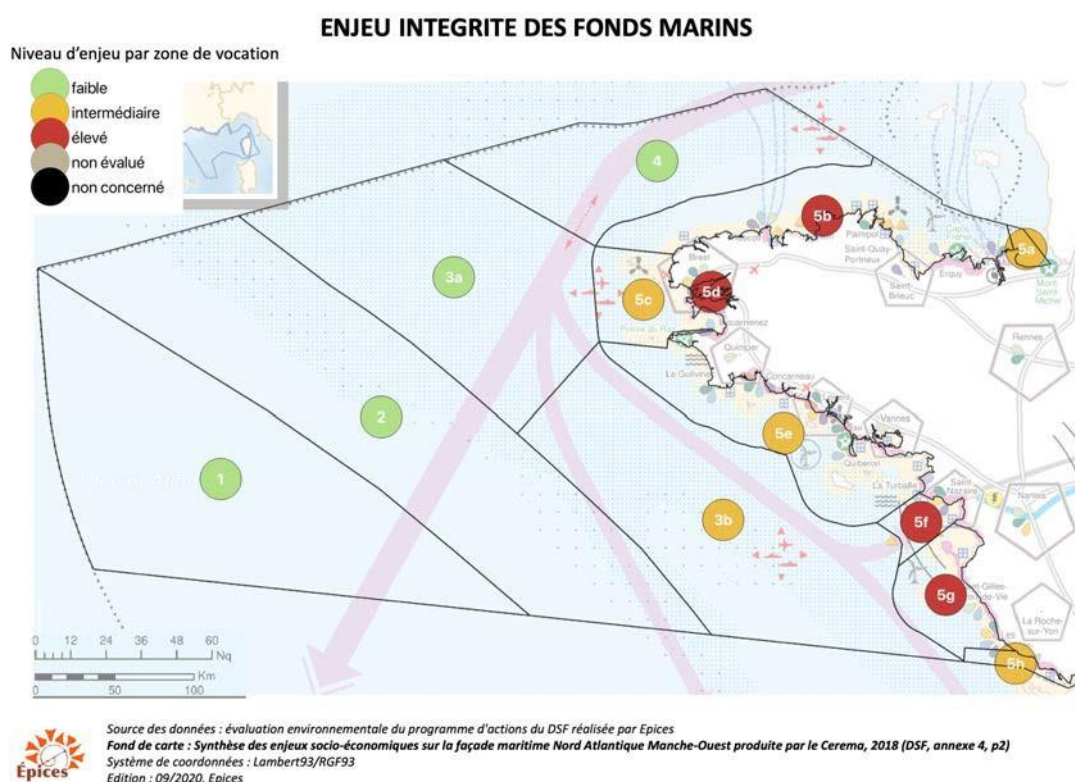
| Pressure-generating activity   | Integrity of the seabed |
|--------------------------------|-------------------------|
| Extraction of materials        | No Yes                  |
| Maritime public works          | No Yes                  |
| Professional fishing           | No Yes                  |
| Beach activities and beach use | No Yes                  |
| Aquaculture                    | No Yes                  |
| Submarine cables               | No Yes                  |
| Boating and water sports       | No Yes                  |
| Power generation               | No Yes                  |
| Research and development       | No Yes                  |
| Recreational fishing           | No Yes                  |

Caption:  
 ✓ Activities affecting the integrity of the seabed (most contributory)  
 ✓ Activity dependent on the integrity of the seabed

The level of seabed integrity ensures that the structure and functions of ecosystems are preserved and that benthic ecosystems, in particular, are not disturbed. Conversely, the artificialisation of the seabed produces negative ecological effects ranging from temporary or reversible physical disturbance of the seabed to (permanent) physical loss. The achievement of good environmental status (GES) for this indicator is not known on the NAMO coast. However, on this coastline, it is the extraction and dumping activities that are most concerned by the potential physical loss of funds

and professional bottom fishing for potential disturbances <sup>22</sup>.

## **RHE SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL**



As the ecological status of seabed integrity was not assessed, the spatialisation of the issue by vocation area was based on the distribution of activities that may exert significant pressure on seabed integrity. Four vocation zones have a high level of concern regarding the integrity of the seabed: ZV5b, 5d, and 5f, because they combine more than 4 activities at stake (among troll fishing, dredging, dumping or extraction of materials, coastal structures, aquaculture, anchoring). The other areas have an intermediate level of concern with less pressure activities. The offshore areas, which are only used for dragnet fishing, are classified as low risk, with the exception of ZV 3b, which, in addition to fishing, is used for sand and gravel extraction.

The assessment of the costs of maintaining biodiversity and the integrity of the seabed shows that these costs are mainly concentrated on the monitoring and information system, in response to the persistent lack of knowledge about marine ecosystems. Avoidance and prevention costs are mainly related to the management costs of marine protected areas. The costs of mitigation appear to be low and mainly centred on the voluntary initiatives of the Conservatoire du Littoral, as measures to restore degraded ecosystems are still underdeveloped in mainland France.

<sup>21</sup> 0.1-0.2% of the area of the marine sub-regions, results considered of low reliability

<sup>22</sup> 97% of the Celtic Seas marine sub-region and 57% for the North Bay of Biscay, results considered to be of low reliability

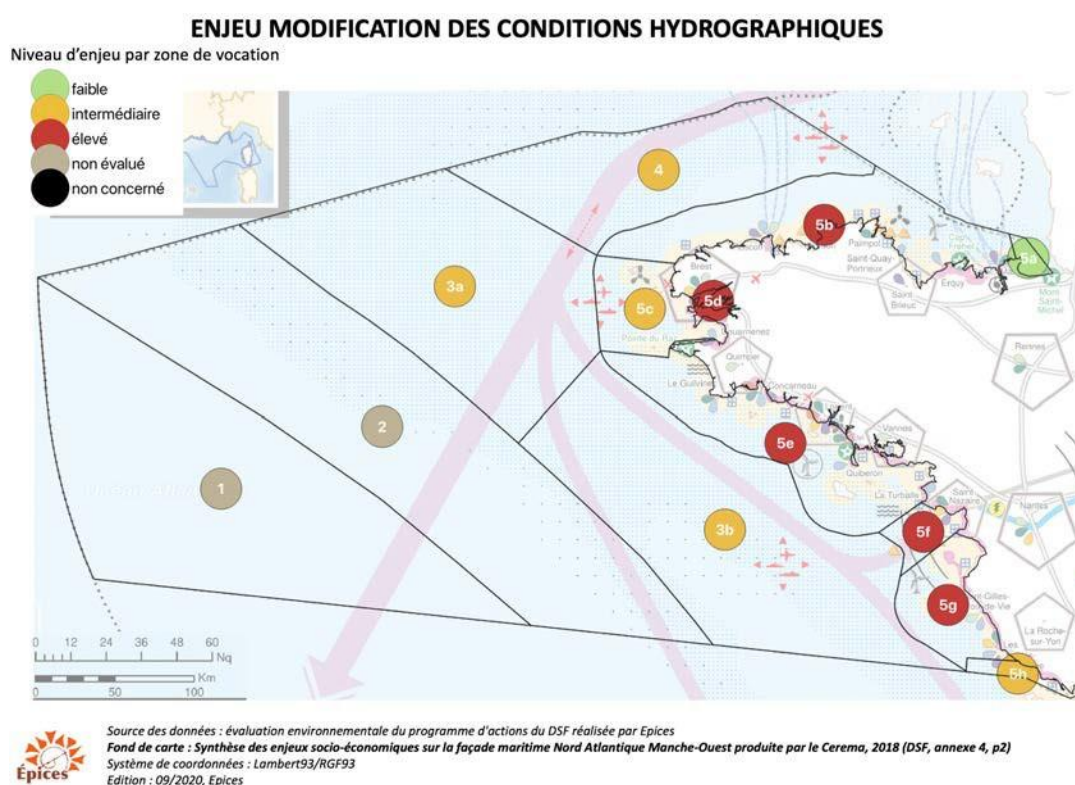
#### 4.3.4. Changes in hydrographic conditions

##### ORIGINAL PRESSURES MODIFYING HYDROGRAPHIC AND WATER CONDITIONS EVALUATION OF THE ISSUE LEVEL

Hydrographic structures organise the functioning of pelagic ecosystems and condition food webs from the first links in the food chain to top predators. In addition, human activities such as marine aggregate extraction, renewable electricity production (offshore wind turbines, tidal turbines) or shellfish farming activities lead to hydrographic (salinity regime, temperature, turbidity) and hydrodynamic (current, tide, waves, sediment transport) changes that can affect the ecological status and spatial extent of benthic habitats.

The ecological status for changes in water conditions is not qualified. In contrast, the estimates of exposure to pressures made by scientists show that pressures related to changes in turbidity and the nature of the seabed have the greatest potential exposure (100% of the Celtic Sea marine sub-regions and 58% of the North Bay of Biscay). The following areas are exposed to a medium to high risk of turbidity change: St Brieuc Bay, Goulven Bay, Brest Bay and the Loire River plume. Temperature and salinity pressures do not exceed 1% of the marine sub-regions. Coastal areas are clearly more potentially exposed to the hazards of hydrodynamic changes: 13 to 29% of the Celtic Sea marine sub-region and 11 to 23% in North Biscay.

##### SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL



The results presented on the map above are derived from the scientific and technical synthesis prepared for descriptor D7, and are based primarily on the map of potential risks of benthic habitat modification. In order to read the scale of the vocational zones, it was necessary to zoom in on this resource map, which made it difficult to read due to the inherent pixelation. The resulting reliability should therefore be considered low. It was decided to raise the level of stake when a part



of the area, regardless of its size, was at medium (intermediate level) or high (high level) risk. As a result of this synthesis, the level of challenge on hydrographic conditions is high for a majority of the VZs in the territorial sea. Only ZV 5a, which is little affected by human activities, has a low level of concern. The two furthest offshore areas are not assessed. It can be noted that the areas with the highest risk of modification coincide with the areas with the highest accumulation of anthropogenic activities, in particular with regard to dumping, aquaculture, dredging, material extraction, coastal structures including the presence of ports.

#### 4.3.5. Chemical and microbiological contamination

##### ORIGINS OF CHEMICAL AND MICROBIOLOGICAL CONTAMINATION PRESSURES AND ASSESSMENT OF THE ISSUE LEVEL

The **main activities generating chemical and microbiological contamination** are the following (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

| Pressure-generating activity           | Contaminants<br>(chemical) | Health issues<br>(microbiological) |
|--|----------------------------|------------------------------------|
| Agriculture                            | No <b>Yes</b>              | No <b>Yes</b>                      |
| Industries                             | No <b>Yes</b>              | No <b>Yes</b>                      |
| Maritime transport                     | No <b>Yes</b>              | No <b>Yes</b>                      |
| Port activity                          |                            | No <b>Yes</b>                      |
| Shipbuilding                           | No <b>Yes</b>              |                                    |
| Maritime public works                  | Yes <b>Yes</b>             | No <b>Yes</b>                      |
| Submarine cables                       | No <b>Yes</b>              |                                    |
| Extraction of materials                | No <b>Yes</b>              | No <b>Yes</b>                      |
| Power generation                       | No <b>Yes</b>              |                                    |
| Professional fishing                   | Yes <b>Yes</b>             |                                    |
| Aquaculture                            | Yes <b>No</b>              | Yes <b>No</b>                      |
| Artificialisation of the coastline     | No <b>Yes</b>              | No <b>Yes</b>                      |
| Coastal tourism                        | Yes <b>Yes</b>             | Yes <b>Yes</b>                     |
| Beach activities and beach use         | Yes <b>Yes</b>             | Yes <b>No</b>                      |
| Boating and water sports               | Yes <b>Yes</b>             | Yes <b>Yes</b>                     |
| Defence and public intervention at sea | No <b>Yes</b>              |                                    |
| Recreational fishing                   | Yes <b>No</b>              | Yes <b>No</b>                      |

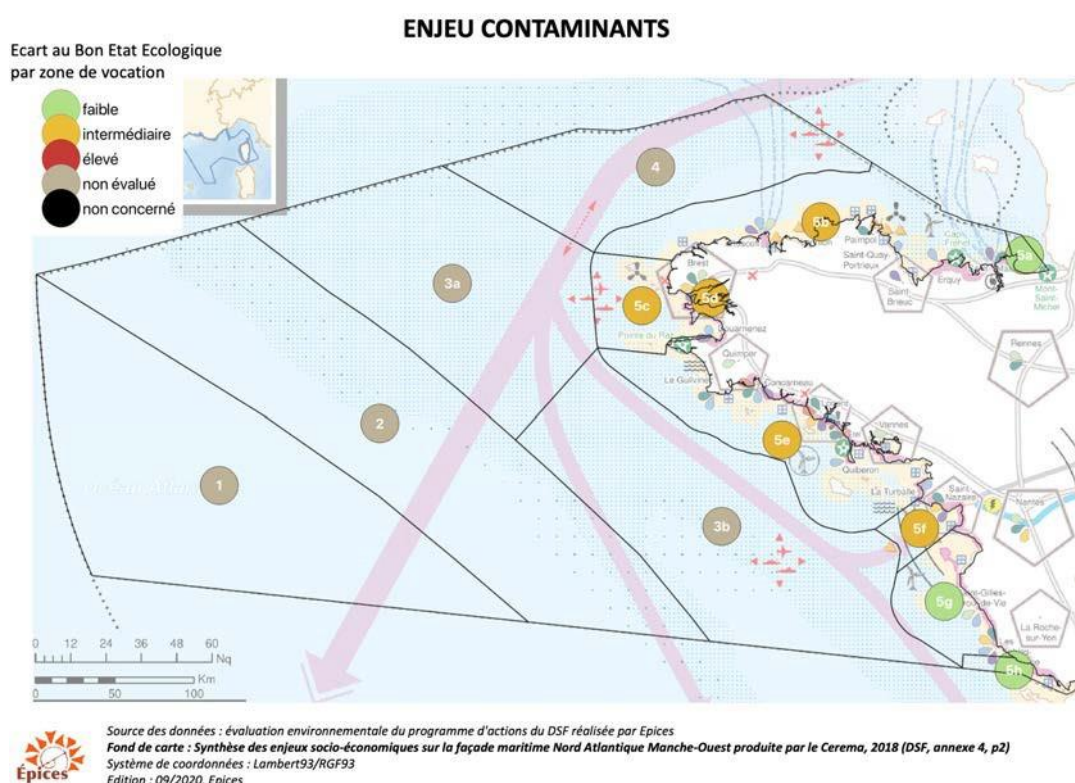
Caption:

- ✓ **Activity generating chemical and microbiological contamination (most contributory)**

- ✓ Activity dependent on the state of chemical and microbiological contamination

The achievement of good environmental status (GES) is assessed on the basis of the concentration of a given contaminant in a compartment of the marine environment (sediment, bivalve molluscs and fish) and the Imposex bio-indicator associated with organotin contamination. The GES is not achieved on the NAMO coastline insofar as it is not achieved at least partially on each register (e.g. in more than 30% of the stations monitored under the Imposex bio-indicator). In addition, the GES is also not achieved under health issues, as out of 11 indicators <sup>23</sup>, 3 achieve it and 8 do not. Finally, significant exceedances of the maximum regulatory limit are observed for hydrocarbons, as well as for phycotoxins.

#### **SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL**



The results presented on the map above are taken from the scientific and technical synthesis prepared for descriptor D8, and are based on the status maps of the concentration of contaminants (metals, PAHs<sup>24</sup>, PCBs<sup>25</sup> and pesticides), in sediments and bivalve molluscs, and on the Imposex bioindicator map. The GES deviation is not known for the offshore vocation areas (1 to 4). Where it has been possible to approach this deviation, i.e. in the territorial sea, it is low (VZ 5 a, g and h) or intermediate (VZ 5 b to f), with a reliability considered high. The areas most affected by contaminants on the NAMO coastline are the Brest roadstead, due to effluents from the Elorn and Aulne rivers, and the bays located to the north of the coastline, as well as the Lorient roadstead, due to heavy metal pollution, particularly

<sup>23</sup> on the content of different groups of chemical contaminants and algal toxins (phycotoxins) in edible tissues of seafood products potentially intended for human consumption.

<sup>24</sup> Polycyclic Aromatic Hydrocarbons

<sup>25</sup> Polychlorinated biphenyls

and the Loire estuary.

#### 4.3.6. Waste

##### ORIGIN OF WASTE PRESSURES AND ASSESSMENT OF THE ISSUE LEVEL

The **main waste generating activities** are the following (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

| Pressure-generating activity  | Waste                |
|---|----------------------|
| Maritime transport and ports  | No <span>Yes</span>  |
| Professional fishing  | Yes <span>Yes</span> |
| Aquaculture   | Yes <span>Yes</span> |
| Industries  | No <span>Yes</span>  |
| Artificialisation of the coastline  | No <span>Yes</span>  |
| Recreational fishing  | Yes <span>Yes</span> |
| Coastal tourism, seaside activities and beach use, boating and water sports | Yes <span>Yes</span> |

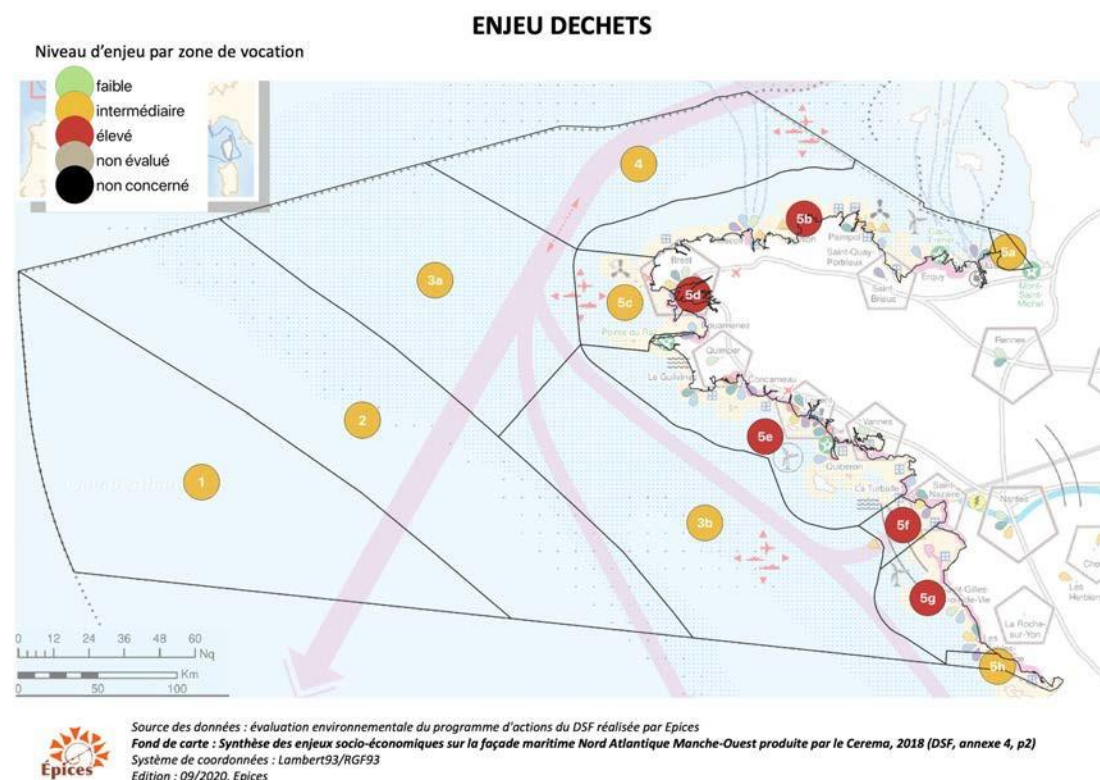
Caption:

✓ Waste generating activity (most contributing)  
✓ Activity dependent on waste status

All marine species likely to interact with the waste are impacted (turtles, birds, mammals, invertebrates or fish) and the impacts are related to ingestion, entanglement (fishing gear, strapping, etc.) and recovery, transport of non-native species and species at risk (toxic or pathogenic species), release of pollutants and generally contributing to chemical pollution.

Good environmental status (GES) is not achieved on the NAMO coast: 1) for floating and bottom wastes and 2) for floating microparticles (as this criterion could not be assessed for the Celtic Sea sub-region).



**SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL**

The results shown on the map above are taken from the description of descriptor D10 (environmental objective and associated indicators), and are based on the maps showing the main activities that generate waste on the coastline. Waste is an issue across the whole frontage, intermediate in Zones 1 to 4 and high in most of Zone 5 (except Zones 5a, 5c and 5h where it is also intermediate). This is mechanically due to the accumulation of waste generating activities in Zones 5b, d, e, f and g.

### 4.3.7. Noise emissions

#### ORIGINS OF NOISE PRESSURE AND ASSESSMENT OF THE ISSUE LEVEL

Anthropogenic activities cause continuous (e.g. maritime transport) and impulsive (e.g. port works or offshore wind turbines) noise emissions that can have an impact on the marine environment.

The **main activities generating noise emissions** are the following (source: detailed EO data sheets in Annex 6a of the SBSDSFM):

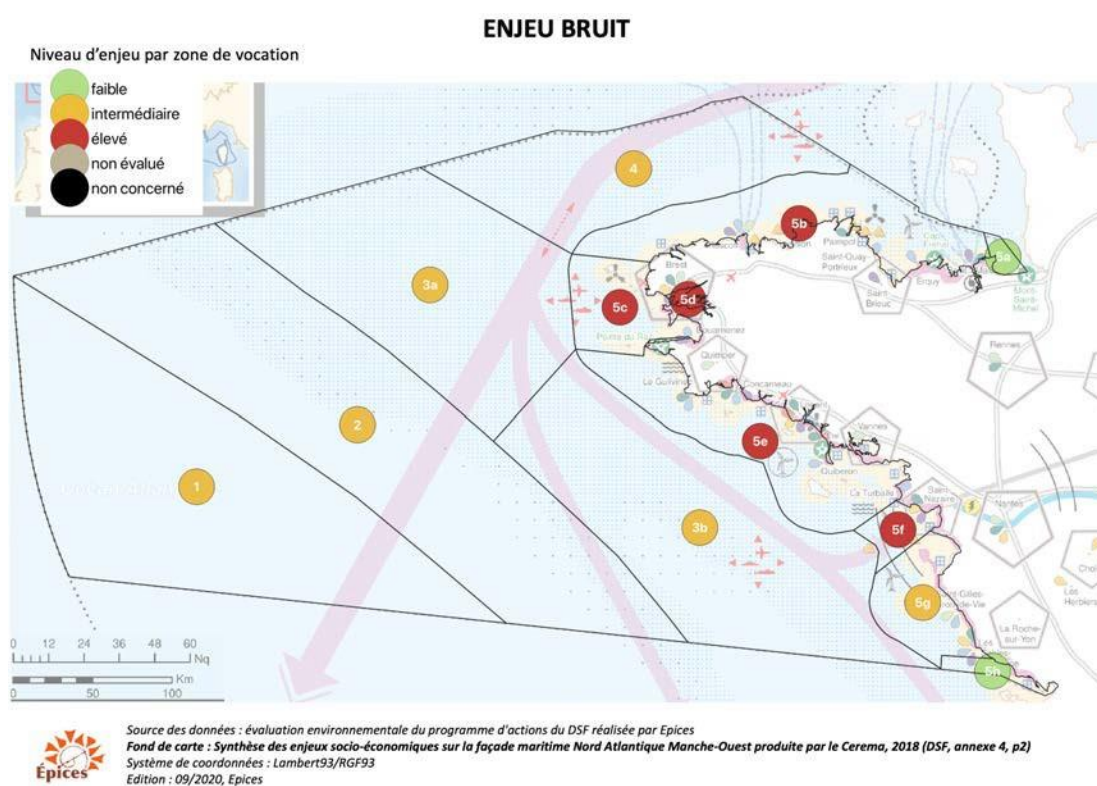
| Pressure-generating activity           | Noise emissions |
|--|-----------------|
| Maritime transport and ports           | No <b>Yes</b>   |
| Maritime public works                  | No <b>Yes</b>   |
| Defence and public intervention at sea | No <b>Yes</b>   |
| Research and development               | No <b>Yes</b>   |
| Extraction of materials                | <b>Yes</b>      |

Caption:  
✓ Activity generating noise emissions (most contributory)

|                          |    |     |                                       |
|--------------------------|----|-----|---------------------------------------|
|                          | No | ✓   | Activity dependent on noise emissions |
| Submarine cables         | No | Yes |                                       |
| Power generation         | No | Yes |                                       |
| Boating and water sports | No | Yes |                                       |

The good environmental status of the pressure indicator of noise generated by human activities is defined qualitatively with regard to the risks for marine mammals only, but it is not known on the NAMO coast. The achievement of the GES is considered as not assessed.

### RHE SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL



As the ecological status of the noise issue was not assessed, the spatialisation of the issue by vocation zone was based on the distribution of activities that may exert pressure in terms of impulse or continuous noise emissions. These activities are weighted according to whether they are identified as high contributors. Five vocational zones have a high level of concern regarding noise: ZV5b to 5f because they combine more than 6 activities at stake (out of 926) and above all the combination of impulsive and continuous noise emissions (the former being little present offshore). The other areas have an intermediate level of concern, with the exception of areas 5a and 5h, which are of low concern.

<sup>26</sup> Energy production (MRE site), Maritime transport, nautical activities, commercial ports, defence, material extraction, TPM, submarine cables, R&D

## 4.4. Other societal issues

### 4.4.1. Landscapes and seascapes

#### QUALIFICATION OF HIGH-ISSUE LANDSCAPES

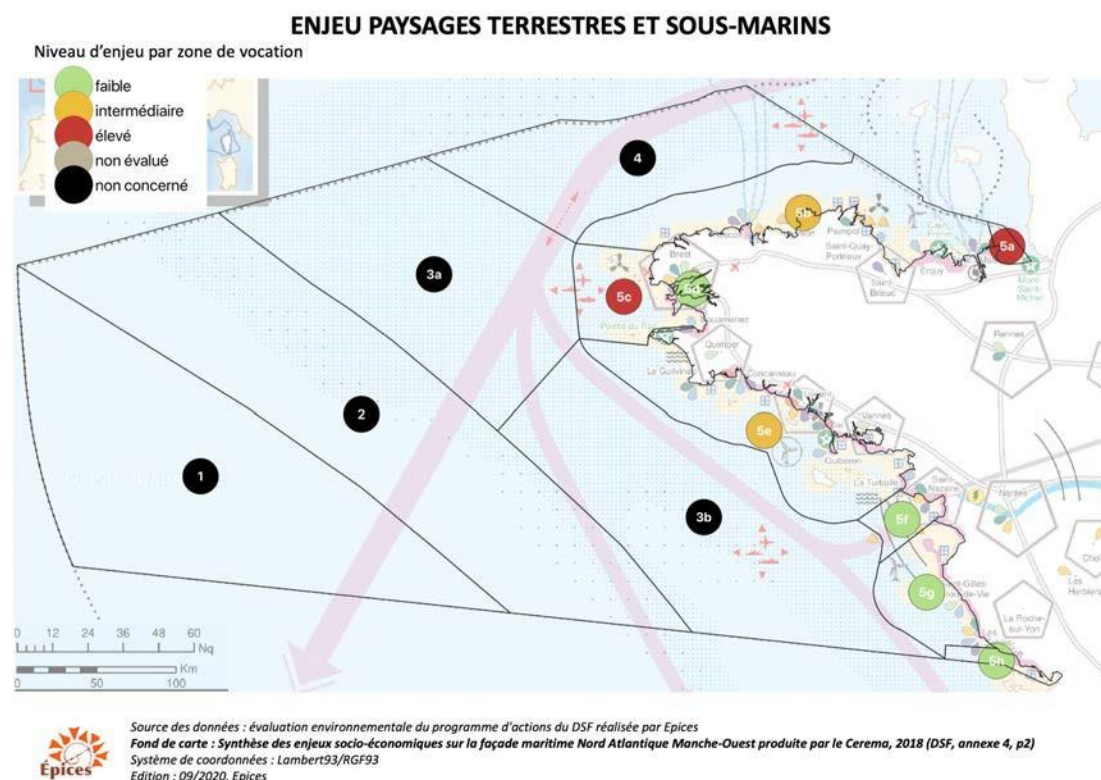
The **main issues** of the NAMO coastline are related to:

- The landscape quality and the heritage capital of marine, underwater and coastal areas which form the basis of the identity and attractiveness of the coastline;
- The emblematic sites and landscapes of the coastline territories;
- Raising awareness of maritime and coastal issues, as part of the common culture of the coastline.

The alternation of hard and soft rocks on the coastline favours **the diversity of coastal landscapes**, with low-lying coasts (beaches, dunes, sand and pebble beaches, coastal marshes), rocky coasts, cliffs, cut by deep estuaries, abers and rias, gulfs. The coastal landscape is also structured by archipelagos, large islands and associated outcropping rocky plateaus, visible evidence of the underwater rocky spine between Rochebonne and the Glénan. The Pointe du Raz has been designated a major national site. There are several regional nature parks related to the sea: Armorique, Gulf of Morbihan, Brière, Marais Poitevin.

Coastal and maritime activities (fishing, sea farming, coastal agriculture, salt production, maritime transport, water sports) are also the source of a **remarkable cultural heritage**, both built - lighthouses, ports, fisheries, etc., and unbuilt -- know-how, tales, pardons, etc.

There is also a **wide variety of underwater landscape features**, a combination of topographical, geomorphological and biological characteristics: sandy bottoms, rocky bottoms, mudflats, eelgrass beds, hermeida reefs, maerl beds, embankments, etc.

**SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL**

The qualification of the level of terrestrial and underwater landscape issues on the basis of the criteria retained (number of listed and classified sites, presence of natural parks, number of major French or UNESCO sites, number of known underwater landscape elements - wrecks, artificial reefs, underwater pathways, diving sector, other) highlights two vocation zones with remarkable landscapes: zone 5c, the Iroise Marine Natural Park, and zone 5a, which includes the Bay of Mont Saint-Michel.

#### 4.4.2. Air quality

##### **QUALIFICATION OF THE SPECIFICITIES OF THE QUALITY OF THE COASTAL AIR**

The network of measuring stations of the approved air quality monitoring associations includes a number of stations located in the coastal towns of the coastline: Saint-Malo, Saint-Brieuc, Brest, Quimper, Lorient, Vannes, Saint-Nazaire, Basse-Loire. The results of the measurements at these stations generally follow the trend observed in the same geographical area for the same types of sites. Nevertheless, **coastal sites differ from non-coastal sites** in the same geographical area in certain characteristics:

- Westerly winds favour the dispersion of pollutants.
- Large port and/or industrial sites (Nantes/Saint-Nazaire, etc.) can be a source of pollutants (sulphur dioxide, volatile organic compounds, etc.). However, industrial emissions have decreased significantly over the last few years due to the application of increasingly stringent standards.
- Ozone concentrations are higher on the coast than inland, with the difference being even more marked on the islands, especially at night. Several explanatory factors are put forward: reaction with salt-laden sea air,

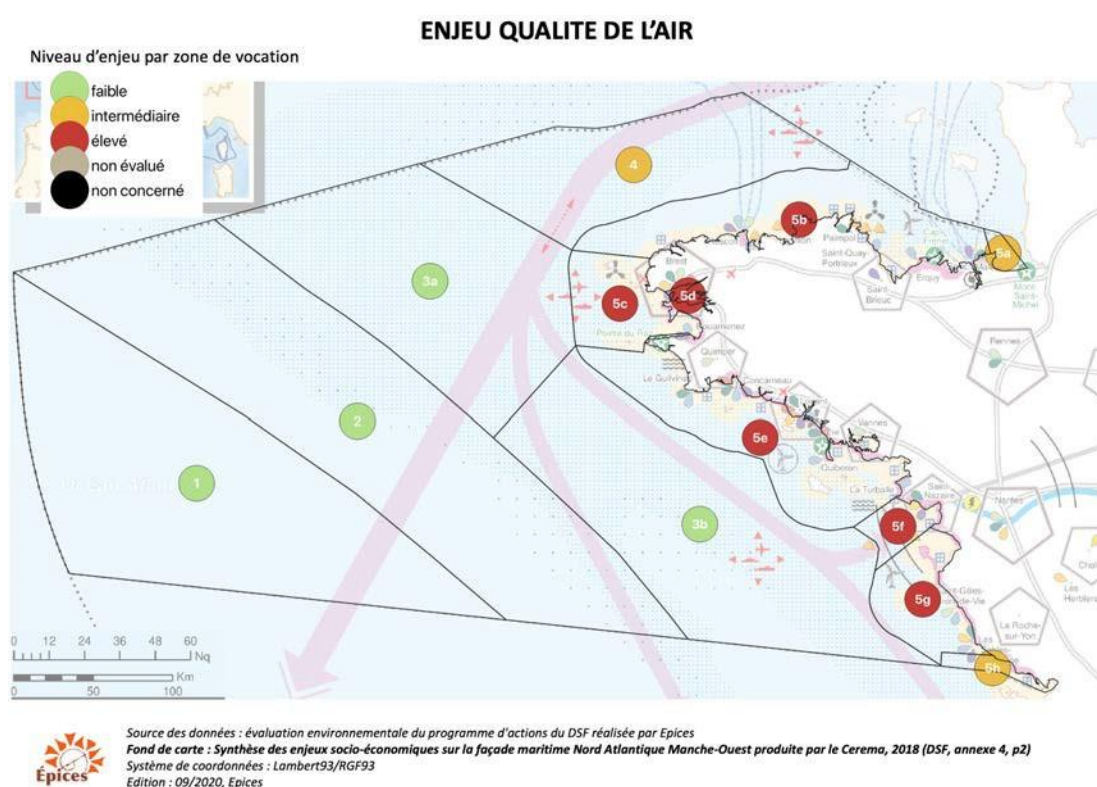


the effect of coastal breezes driving pollution out to sea at night or in the early morning, formation of ozone from ship emissions.

- Green algae strandings can produce hydrogen sulphide and ammonia on decomposition, with a risk of acute toxicity to humans and animals.
- The importance of agriculture is the cause of fine particle emissions of ammonia, methane and nitrous oxide.

There are also sources of air pollution specific to the perimeter of the marine sub-regions, such as maritime transport, air transport overflying them, human activities on the islands, re-emissions into the air from the sea. However, they can be considered negligible compared to the much more numerous continental sources of pollution.<sup>27</sup>

#### SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL



Almost all of the territorial sea areas have a high level of air quality concern, due to the cumulative presence of port activities, the density of maritime traffic and the presence of macro-algae development sites.

Finally, no diagnosis of greenhouse gas emissions linked to the economic activities of the façade could be carried out due to a lack of data.

<sup>27</sup>Source: Strategic environmental assessment of the marine action plan for the Bay of Biscay marine sub-region, CEREMA, June 2014, pages 71 and 72

### 4.4.3. Natural and human risks

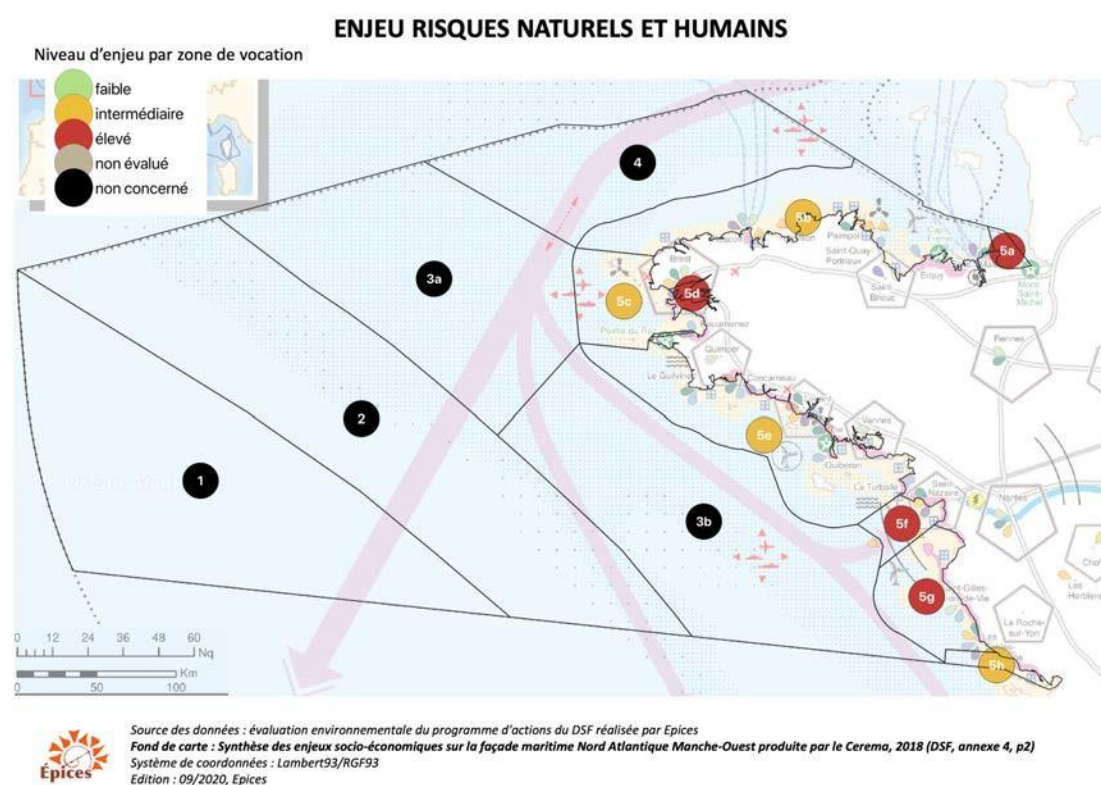
#### QUALIFICATION OF HIGH-STAKE NATURAL AND HUMAN RISKS

Within the NAMO coastline, the **main risk issues** are related to the safety of property, people and economic activities (marine farming, tourism, coastal agriculture, industrial and port activities), located **in low-lying areas and/or subject to coastline erosion**, as they will be directly affected by the rise in sea level and the risk of marine submersion. These include the Bigouden coastline, the Loire-Atlantique and Vendée coastlines, etc.

**Industrial risks** are concentrated on a few coastal areas and in port areas: activities of dangerous industrial establishments classified as SEVESO, maritime and land transport of dangerous materials, storage and handling of materials in ports, activities of the French Navy in the nuclear field (propulsion, armament), locally, dam breakage. They are particularly concentrated in the industrial and port areas of Nantes/Saint-Nazaire (where they are combined with the risks of low-lying areas), Saint-Malo, Brest, Lorient, Les Sables d'Olonne, etc.

In addition, on the **continental shelf**, there are **maritime safety risks** due to the density of traffic at sea - professional maritime fisheries and freight and passenger transport.

#### SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL



The territorial sea vocation areas have an intermediate to high level of natural and human risk. This level is high for ZV5a, d, f and g which combine medium to high risks (industrial, flooding and/or coastline erosion).

#### 4.4.4. The organisation of environmental knowledge and research

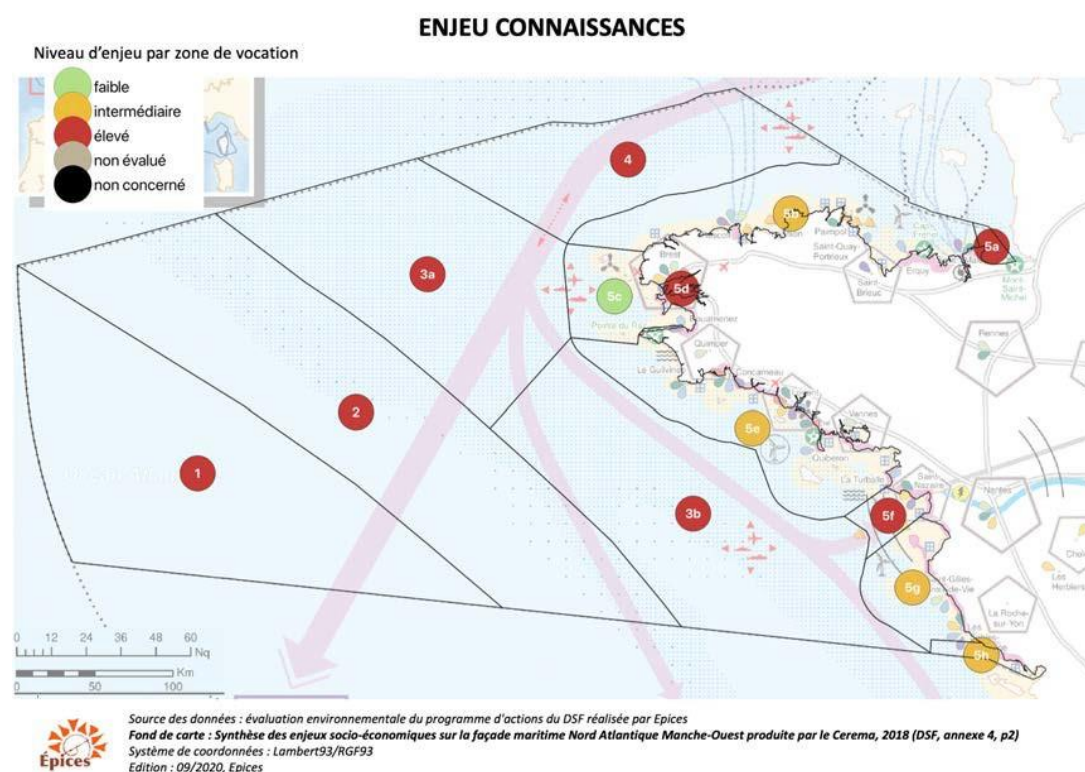
##### QUALIFICATION OF KNOWLEDGE ISSUES

The NAMO coastline has an **exceptional density** of public and private **maritime skills** (IFREMER, SHOM, the French Biodiversity Office, CEDRE, CEREMA, universities that are very active in marine research and innovation, etc.). **Maritime research** is also supported by 4 competitiveness clusters, including the Brittany Atlantic Sea Cluster and Valoria, 15 university sites, 5 laboratories of excellence and other actors. These activities are accompanied by **numerous tools that can be used** by the players: oceanographic vessels, submersibles, automated observatories (buoys, floats), satellites, intensive computing centre, laboratories, etc.

**Maritime training** is provided by maritime vocational schools (5), other secondary training establishments (6), higher maritime education establishments (8) or those providing higher maritime training (8) - national maritime college, naval school, Nantes central school, training for engineers specialising in maritime industries.

The **issues identified** in this chapter concern 1) the "maritimisation" of initial and continuing education, both general and specialised, 2) the adaptation of training and qualifications to the professions of the sea, 3) the pursuit of knowledge acquisition and research on the marine environment, activities and their interactions to facilitate the evaluation of project impacts, 4) the maintenance of a maritime innovation capacity and 5) the dissemination of knowledge to the public (international scientific networks, elected representatives, popularisation of the general public).

##### SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: ISSUE LEVEL

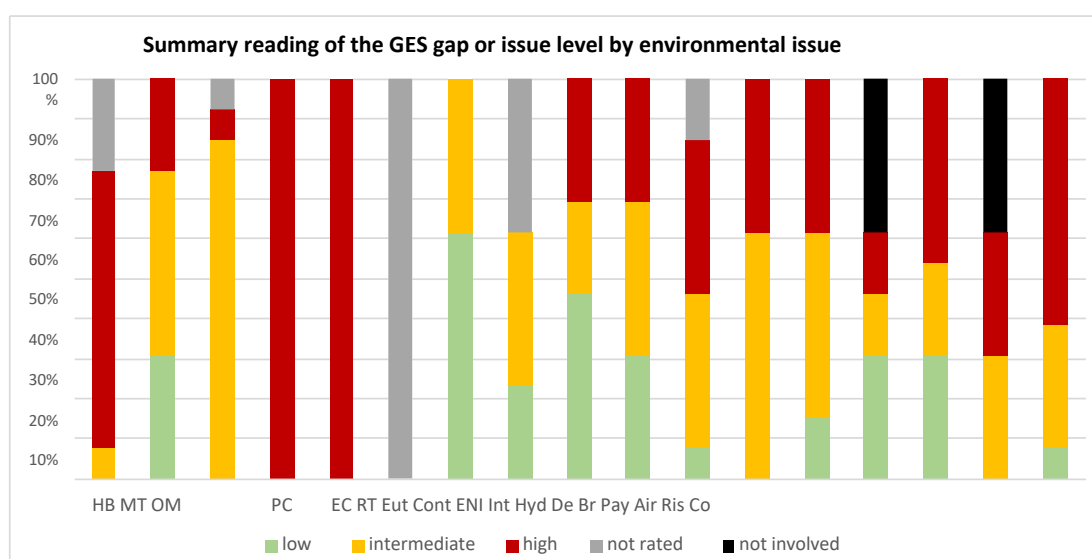




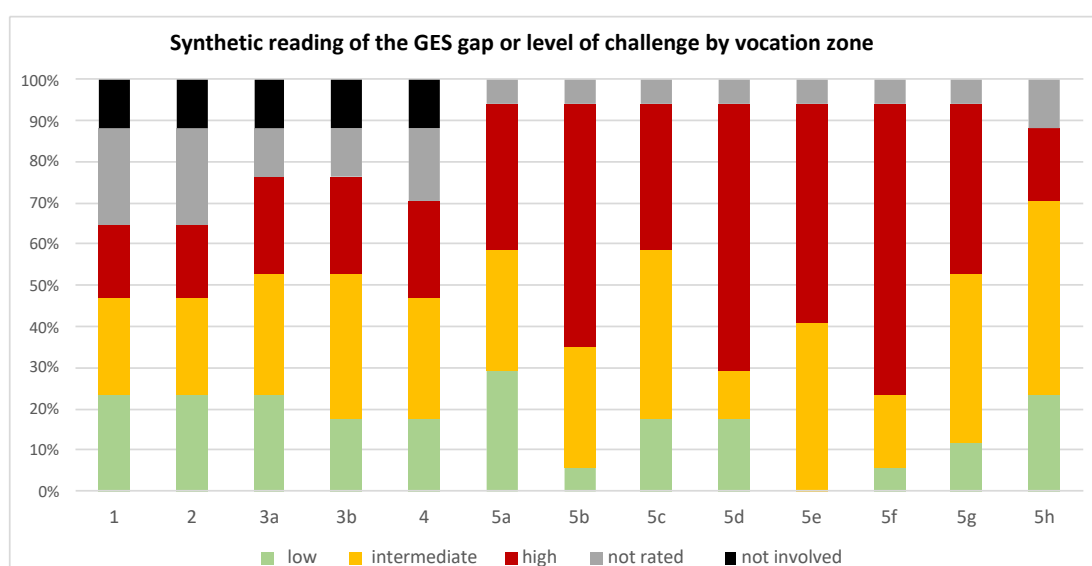
Four criteria were chosen to assess the level of knowledge at stake for their regular contribution in terms of acquiring knowledge about the marine environment (inventory, mapping, environmental studies, impact studies, monitoring system, etc.): the presence of nature parks, nature reserves, wind farms and the area covered by Natura 2000. The absence of these criteria therefore increases the level of knowledge at stake. Eight vocational areas have a high level of concern, primarily the offshore areas. However, some of the territorial sea vocation areas are also concerned (5a, 5d and 5f). Zone 5c of the Iroise National Marine Park is the best covered zone in terms of knowledge based on these criteria, with a low level of concern.

## 4.5. Summary of coastline environmental issues

At the end of this section devoted to the reading of the environmental issues on the NAMO coast, the following two graphs can be produced concerning the deviation from the GES or the level of issue, the first one constituting a reading by environmental issue and the second one a reading by vocation zone.



The percentages are relative to the number of vocation zones (i.e. 13). For example: for benthic habitats, the GES deviation is high for about 70% of the vocation zones



The percentages are relative to the number of issues (i.e. 17). For example: in zone 5d, just over 60% of the issues have a GES deviation or a high issue level.

The most important issues for the coastline concern fish and cephalopods and commercial species, where the deviation from the GES is high for all areas of activity. The benthic habitats also show a high GES deviation, although it is still insufficiently assessed, especially in the most offshore areas. Finally, knowledge is at a high level, concerning all offshore areas but also some areas of the territorial sea. The issues of eutrophication and non-invasive species are less significant. It should be noted that food webs are the environmental issue on which the most effort should certainly be focused in the future. In general, it should be noted that the reliability of the assessment of issues related to the biocenosis is generally less good than the reliability of issues related to pressures or other societal issues.

Offshore areas appear to have lower overall GES deviations or levels of concern than the territorial sea areas, but they are also less assessed or concerned. In the territorial sea, areas 5f, 5d and 5b present the most significant environmental challenges, particularly with regard to high levels of pressure.

## 5. Impact analysis

### 5.1. Situation in the absence of a DSF

The NAMO coastline is characterised by a vast natural public maritime domain linked to the strong tidal range and very indented coasts, with numerous roadsteads, bays, abers and rias, the Gulf of Morbihan and important wetlands in the south with the Loire estuary, the Guérande salt marshes, the Brière, the Breton marshes of the Vendée, etc. It is therefore an area of remarkable habitats, whose hydrodynamic and morphological characteristics favour a great diversity of ecosystems and coastal landscapes. Thus, 54% of all coastal habitats of community interest in mainland France are found in NAMO. The NAMO coastline also has the particularity of being the centre of marine and maritime activities that are highly dependent on the quality of ecosystems. In particular, water quality is a real socio-economic issue due to the importance of the aquaculture, professional and leisure fishing sectors. The coastline is also characterised by the importance of its coastal and maritime territories, in particular its ilian character, since it is dotted with a dozen islands sometimes located at a distance from the coast (Yeu Island more than 20 km from the mainland, Belle-Ile 14 km from Quiberon).

As we have seen in the previous section, many environmental issues are of concern:

- a high overall GES deviation for benthic habitats, fish and cephalopods, commercial species, significant for seabirds, and relative depending on the area of use for marine mammals and turtles;
- an overall high level of concern in the territorial sea vocation areas for non-indigenous species, seabed integrity, hydrographic conditions, litter, noise and relative for contaminants and eutrophication depending on the area;
- a level of challenge that is also important in the territorial sea vocation areas for air quality, risks and knowledge, relative for landscapes depending on the area, and high for knowledge for the offshore areas.

This situation with regard to environmental issues is the result, in particular, of the numerous pressures exerted by the existing socio-economic activities on the coastline. According to the Maritime Strategy, the main pressures are the following:

- the most significant physical pressures correspond to the artificialisation of the coastline, the abrasion of the coastal bed (anchoring, destructive gear used for leisure fishing) or the seabed (extraction of silica sand and shellfish, fishing with towed gear, port developments including dredging and the deposit of sediment). The issues of noise emissions (from maritime traffic, underwater works and defence activities) and the accumulation of waste at sea are also important;
- the most significant chemical pressures that can be cited are the inputs of chemical compounds and active substances impacting the environment, both from activities such as agriculture or industry and from voluntary or involuntary discharges from maritime transport and port activities (beaching, careening, degassing, collisions, groundings, etc.). The waste generated by many professional and leisure activities can also be mentioned;
- finally, with regard to biological pressures, the introduction of invasive species, the extraction of species by both professional and recreational fishing, the input of nutrients causing eutrophication and the terrestrial input of microbial pathogens and bacteria (waste water discharge) are the most important biological pressures.

These pressures result from the most developed activities on the NAMO coast. At the forefront of these are:

- **professional fishing** The NAMO coastline is **home to 38% of the fleet in mainland France** (1,768 vessels registered on the coastline in 2011), which makes it the **leading coastline in mainland France for fishing activity**. It employs 6158 fishermen, with numbers falling sharply, particularly among offshore fishing vessels. The majority of vessels operate in coastal areas, with only about 10% of vessels operating exclusively offshore. The "trades" are very diversified (fish net, bottom trawl for fish, longline, shrimp trap, large crustaceans), seabed trawl for langoustines, scallop dredge). Some are very characteristic of a region: the fish handline or the pelagic fish seine for southern Brittany, the pelagic fish trawl or the shrimp bottom trawl for the Pays de Loire. Vessels may engage in several trades throughout the year. On this coastline, access to British waters, which are rich in fish, is a determining factor for fishermen, and is dependent on the outcome of the Brexit negotiations.
- **Aquaculture**: the NAMO coastline is **the leading shellfish farming coastline in France**. It concentrates 1/3 of the shellfish establishments and jobs in France (3152 FTE and 883 companies in 2014) and covers 42% of the overall French production. The north Breton coast is specialised in mussel farming. It is the leading French region for mussel production, with large sites such as the Mont St Michel bay. In Southern Brittany, shellfish farming is relatively old and originates from small-scale coastal fishing. In total, the production is spread over the whole coastline and appears diversified (hollow oysters, flat oysters, cockles, clams, bouchot mussels, etc.). It is very much part of the coastal heritage. Marine fish farming is mainly present in the Bay of Biscay. The activity is mainly oriented towards hatchery and grow-out of sea bass, sea bream and turbot. However, it remains very small, employing a total of 120 people.
- The **maritime transport**: The traffic separation scheme (TSS) off the island of Ouessant is **one of the busiest maritime passages in the world** with an average of 117 cargo ships per day registered with CROSS Corsen in 2015, i.e. a total of 42,858 ships over the year. In addition, **the port traffic of goods is developed** in the port of Nantes-St Nazaire, much less developed in the other ports of the coast, even if it has been increasing since 2016. The NAMO coastline has **14 commercial ports**, of which the 6 main ports are the Grand Port de Nantes St-Nazaire, Brest, St-Malo (main passenger port), Lorient, Les Sables d'Olonnes, Le Légué and Roscoff. It also has 365 registered commercial vessels. Before the coronavirus health crisis, maritime transport on the coastline was on the rise between 2014 and 2018, notably due to the increase in maritime traffic in commercial ports.
- **Tourism and water sports**: The NAMO coastline is attractive due to the diversity of its coastal, marine and underwater landscapes, its cultural and industrial heritage and the variety of associated activities, particularly with regard to water sports and leisure activities. It represents **40% of the bathing areas of the metropolitan coastline** and has **2 000 km of coastal paths**. It offers a wide range of events (nautical events, sea festivals, music festivals, comic strips, literature festivals, etc.). The coastline has **73 main structural marinas** with 38,000 berths. Faced with a shortage of places afloat, all departments have had dry port places for motor vessels for some years. The number of registered ships represents **33% of the national fleet**, and 28% are sailing ships. In 2017, the nautical sector on the coast covered about 30% of the national turnover and workforce. At the same time, the NAMO coastline's water sports facilities, estimated at around 700, welcome around **1 million customers** each year. As water sports can be practised without a licence, it is difficult to have precise figures on the number of people carrying out water sports. Among the water sports federations, the Fédération Française de Voile (French Sailing Federation) had the largest number of sailors in 2014, i.e. 31% of sailors in the Bay of Biscay and 14% in the Seas MMN. The number of people practising underwater sports represents about 28% of all

metropolitan coastal departments in the Bay of Biscay and around 11% for the Celtic Sea MMN.

Other pressure-producing activities are also quite strongly developed, such as

- **the naval and nautical industry:** the NAMO coastline enjoys the presence of **world leaders in civil, military and nautical construction**, such as Chantiers de l'Atlantique, Naval Group, Piriou and the Jeanneau-Bénéteau group. It also has **port facilities** for the maintenance and repair of large ships, such as Brest, the leading French port in this field, and Saint-Nazaire. In addition, the repair economy has developed in recent years. Similarly, **the dismantling and recycling activity** is also **developing**. It concerns small ships (fishing, pleasure, military) and is carried out in particular in the shipyards located in Brest, La Rochelle, La Turballe or Saint-Malo for fishing and pleasure ships. The coastline would represent about 32% of the jobs in the sector (26,804 jobs in 2017<sup>28</sup>). It recorded €567 million in exports in 2015 (40% of national exports). It is the GdG Nord marine sub-region that concentrates the bulk of the staff attached to the construction of civil and military ships (Saint-Nazaire yards). In terms of ship repair, Brest stands out as one of the three largest French sites, along with Marseille and Dunkirk.

- **Extraction of marine aggregates** On the NAMO coast, the ports are supplied by 4 silica sand concessions located off the Pays de la Loire coast and by 4 others located in the North of the South Atlantic coast. In terms of resources, the context is rather favourable, with the NAMO coastline accounting for **30% of known available resources** (excluding resources in the Mediterranean which are not known). However, the potential for extraction is limited, due to technical, regulatory, economic and environmental constraints, even though the land resources from loose rock quarries are insufficient on the scale of Brittany. Despite this situation, today, silica sand needs are covered for the next 10 years, with the current authorisations of the concessions in Pays de la Loire, subject to the homogeneity of the quality of the deposits. In terms of planning, the coastline has a guidance document for the sustainable management of marine aggregates (DOGGM), annexed to the DSF. It is the counterpart to the quarrying schemes carried out for land-based extraction and prohibits new concessions that would increase the production capacity of silica sand for the next 12 years.

The NAMO coastline is also the only coastline where shell or limestone sands are extracted. This production is used to amend agricultural land, either in raw form (Breton agricultural land) or in processed form, produced in two Breton industries. Extraction is carried out in 4 concessions, located exclusively in northern Brittany. The DOGGM now calls for the replacement of shell sand with alternative resources in line with the SBSD objective to eliminate shell sand extraction pressure on hydraulic dunes (D01-HB-OE11). By 2035, which marks the end of shell sand extraction authorisations under the mining code, this activity is destined to disappear.

- **Recreational fishing** Recreational fishing: recreational fishing is an activity that remains fairly important on the NAMO coast. According to a survey carried out in 2005, fishing on foot is the dominant mode of leisure fishing on the NAMO coast. It is practised by 77% of respondents in Celtic Sea MMN, of which 51% as the main mode, and by 82% of respondents in GoG MMN, of which 62% as the main mode. According to the Life Pêche à Pied de Loisir project, the maximum number of fishermen observed at the time when the pressure was greatest was around 35,000 simultaneously on a linear stretch representing 52% of the GoG MMN (43% of the northern part of the coastline and 64% in the South Atlantic), and a maximum of around 13,000 simultaneously on a linear stretch representing 66% of the Celtic Sea MMN.

- **Marine renewable energy** The NAMO coastline has **significant potential for the development of marine renewable energy (MRE)**. It has **3 of the 7**

<sup>28</sup> Weight of economic activities covered by the Sea Brittany Atlantic cluster in the Brittany & Pays de la Loire regions (2017)

**Fixed wind farm projects** (Saint-Brieuc, Saint-Nazaire, Yeu-Noirmoutier) as well as a commercial floating wind farm project west of Belle-Île-en-Mer and south of Groix, for which the public debate was launched in July 2020. None of these projects are currently in the operational phase. Only the Rance tidal power plant, commissioned in 1966, produces electricity. The coastline is also home to several experimental sites for marine renewable energy production technologies: **floating wind farm under construction, experimental tidal and wave power sites**. As far as offshore wind is concerned, only certain areas are clearly identified in the SBSDas potentially suitable for wind farms. Outside these areas, it remains to be seen whether or not the conditions are favourable for the establishment of this activity.

In order to try to clarify the evolution of environmental issues in the absence of a DSF, we can try to analyse the trend of these pressure activities. The available data and indicators on the recent evolution of these activities have been researched (see details in [Annex 3](#) of the environmental report) and the synthesis that can be made in terms of trends, essentially over the period 2014-2018, is given in the table below.

| Activity                           | Past trends in the pressure of activity on the environment | Reliability of past developments<br>(most reliable level: +++) |
|------------------------------------|--|--|
| Beach activities                   | →  | ++   |
| Agriculture                        | ↘  | +  |
| Aquaculture                        | →  | ++   |
| Artificialisation of the coastline | ↗  | ++   |
| Underwater cables                  | ↗  | +  |
| Shipbuilding                       | ↗  | ++   |
| Defence                            | ↗  | ++   |
| Extraction of materials            | ↘  | +  |
| Industries                         | ↘  | +  |
| Recreational boating               | ↗  | ++   |
| Recreational fishing               | ↘  | ++   |
| Professional fishing               | ↘  | ++   |
| Energy production                  | ↗  | +  |
| R & D                              | →  | ++   |
| Coastal tourism                    | ↗  | +  |
| Maritime public works              | ↗  | +  |
| Maritime transport                 | ↗  | +++  |

Two important findings emerge from this table:

– on the one hand, the most important activities on the coastline had varying levels of evolution, some of which were declining (professional and leisure fishing, materials extraction), others increasing (maritime transport, energy production);

– on the other hand, the reliability of these trend estimates is not optimal, in the absence of an effective monitoring system for the evolution of pressures exerted by socio-economic activities, which has yet to be built (see part 7 of this report). It should be noted, however, that the NAMO coastline has a better level of reliability than the other façades due to the socio-economic summaries produced each year by activity from 2014 to 2018.

It could be deduced from the first observation that, in the absence of a DSF, pressures will continue to be exerted on the marine environment and that the situation of a number of environmental issues is likely to continue to deteriorate. Such foresight, based on a



simple extension of recent trends, is nevertheless very risky, for at least three reasons:

- (1) a context that remains uncertain despite the Brexit agreement;
- (2) the health crisis experienced worldwide in 2020 has had a major impact on the dynamics of many economic activities (e.g. passenger transport), and it is very difficult to know today whether a return to the previous dynamics will take place or whether there will be a lasting break in the trend;
- (3) the level of uncertainty in the data and indicators mentioned above also makes this exercise of extending past trends very uncertain.

## 5.2. Analysis of impacts on environmental issues

### 5.2.1. Impacts of the different actions of the DPA

NB. As explained in part 6 of this report, the analysis of the impacts of the various actions of the DPA presented below is carried out without taking into account the avoidance, reduction and compensation measures proposed in each of the action sheets, as this approach is specific to the NAMO coast and therefore difficult to take into account in a harmonised methodology. This analysis also does not take into account the ARC approach to be implemented as part of the environmental procedures to which certain actions will be subject when they are implemented.

#### I- MARITIME IDENTITY ROOTED IN THE TERRITORY

| 1.1 A dynamic coastal territory |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|---------------------------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| DE-OSE-V-2-AF3                  | Supporting ports in strengthening their role as planners for the sustainable development of territories                                      | P  |    | P  |    |    |    |     |      |     |     |     |          |    | P   | P   |     |    |
| DE-OSE-V-2-AF4                  | Facilitating local acceptability of ports along the coast  |    |    |    |    |    |    |     |      |     | I   |     |          |    |     |     |     | P  |
| DE-OSE-VII-2-AF1                | Encouraging certification and labelling processes  | P  | P  | P  | P  |    | P  |     | P    |     |     |     | P        |    |     |     |     |    |
| DE-OSE-VIII-4-AF1               | Supporting the competitiveness of the activity (production and infrastructure)   |    |    |    | P  | P  |    |     |      |     |     |     |          |    |     |     |     |    |
| DE-OSE-VIII-6-AN2               | Supporting multi-activity fisheries and aquaculture and developing the emerging bioeconomy towards a stable environmental and economic model | I  |    | I  | I  |    | I  |     | I    | I   | I   | I   | I        | I  |     |     |     | P  |
| TE-OSE-II-5-AF1                 | Preserving maritime sites, landscapes and heritage   |    |    |    |    |    |    |     |      |     |     |     |          |    | P   |     |     |    |

DE-OSE-V → Ports; DE-OSE-VII → Water sports; DE-OSE-VIII → Fisheries and aquaculture; TE-OSE-II → Territories/Heritage

This chapter of the action plan concerns support for the dynamism of the coastal area and its specific activities in particular. Composed of six new actions, all socio-economic, it is likely to generate 27 impacts, the majority of which are positive and a significant proportion uncertain.

The positive impacts concern 11 issues, including benthic habitats, marine birds, fish and cephalopods, landscape and knowledge. Approximately half of the positive impacts are related to the action concerning the development of different types of certification and labelling of nautical events, which shows an interesting consideration of the environment.

The uncertain impacts concern 10 issues, in particular the integrity of the seabed. They are essentially linked to the action concerning the diversification of production and production methods in the aquaculture sector, as the impact of these emerging activities is uncertain on the biocenosis, the environment and waste.

**1.2 Coordination of human activities**

|                   |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|-------------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| DE-OSE-IV-1-AN1   | Develop preferred offshore wind project areas, in the short, medium and long term, notably through public participation processes (under the aegis of the National Commission for Public Debate (CIMER 2019)). | N  | N  | N  | I  | I  | I  |     | N    | I   | N   | I   |          | N  | I   | P   |     | P  |
| DE-OSE-VII-2-AF4  | Extend the Departmental Commissions for Spaces, Sites and Routes (CDESI) to the entire coastline.  |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     |    |
| DE-OSE-VIII-5-AF1 | Promote the development of sustainable recreational maritime fishing.  | P  |    |    | P  | P  |    |     |      |     |     |     |          |    |     |     |     | P  |
| RF-OSE-I-2-AF1    | Encourage the emergence of a maritime community on the scale of the territories of the NAMO coast.   | P  | P  | P  | P  |    |    |     |      |     |     |     |          |    |     |     |     | P  |

DE-OSE-IV → EMR; DE-OSE-VII → Nature sports; DE-OSE-VIII → Recreational fishing; RF-OSE-I → Local governance

This chapter of the action plan concerns the articulation and coordination of certain anthropic activities of the coastline. Composed of four new actions, all socio-economic, it is likely to generate 23 impacts, barely half of which are positive and as many negative as uncertain.

This mixed picture is linked to the variability of impacts depending on the nature of the actions grouped in this chapter. Thus, the action linked to the development plan for offshore wind power (provided for in the framework of the Multiannual Energy Programme), accompanied by a plan for the onshore development of landing points for the electricity network on the scale of the coastline, concentrates the negative and uncertain impacts. The action related to the development of CDESI has no environmental impact. Actions concerning the dissemination of information, good practices and the empowerment of recreational fishermen, for the preservation of the marine environment and its resources, particularly in N2000 sites, have a positive impact on six issues, in particular on benthic habitats and fish and cephalopods.

**1.3 The islands, an attractive maritime identity and a showcase for innovation**

|                 |   | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|-----------------|---|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| TE-OSE-II-3-AF1 | Accelerating the energy transition of the Ponant islands              | I  |    |    | I  |    |    |     |      |     | I   | I   |          |    | I   | P   |     | P  |
| TE-OSE-II-3-AF2 | Encouraging source reduction and reuse of waste on the Ponant islands |    |    |    |    |    |    |     |      |     |     |     | P        |    |     |     |     |    |
| TE-OSE-II-3-AF3 | Improving freshwater management on the Ponant islands                 |    |    |    |    |    |    |     | P    |     |     |     |          |    |     |     |     |    |

TE-OSE-II → Territories/Energy transition, Waste, Freshwater

This chapter of the action plan concerns the management of island-specific resources. Composed of three new actions, all socio-economic, it is likely to generate nine impacts, almost equally positive and uncertain. There are also nine issues involved, so there is no concentration of impacts on the issues.

It is the action concerning the energy transition in the islands that concentrates the most impacts, two thirds of which are uncertain. This rather composite action provides for an evolution of the feed-in tariff for electricity produced by the islands, the development of photovoltaic on buildings and experiments of pilot projects adapted to the scale of the islands, and in particular of tidal energy, and an effort to decarbonise island-continent boat links, such as the use of sailing. Uncertain impacts relate to the development of photovoltaics (landscape) and waterborne (benthic habitats, hydrographic conditions, etc.).

**OVERVIEW PART I — A MARITIME IDENTITY ROOTED IN THE TERRITORY**

(See also the point "Cross-sectional reading of the action plan in a few graphs")

At the end of the analysis of this part I, devoted to the enhancement of the maritime identity of the NAMO coastline, it appears that the actions of the plan relating to it are likely to generate almost 59 potential impacts on the environmental issues. Just over half (53%) are considered positive, 37% uncertain and 10% negative. This is the part of the plan with the most mixed picture in terms of impacts.

With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 47% of the impacts concern issues related to the components of the marine environment, 31% concern issues related to pressures on the marine environment and 22% concern other societal issues.

The issues most strongly concerned in this section are benthic habitats and fish and cephalopods (7 each) as well as seabirds and knowledge (5 and 6 respectively). Beyond that, many issues (11) are moderately affected (between 2 and 4 impacts per issue). Two issues are not concerned (eutrophication and risks).

## II- UUSTAINABLE BLUE ECONOMY TO BE PROMOTED

### 2.1 A blue economy that creates jobs

|                   |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|-------------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| DE-OSE-II-2-AF2   | Adapt training courses (referents to be listed) to the specific needs of the maritime sectors, and in particular those of the naval and nautical industries  |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     |    |
| DE-OSE-II-1-AF1   | Develop collective competence or support for professional bodies in the area of social rights and duties of fishing employers, legal information and security and responsibility towards their crews |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     |    |
| DE-OSE-II-3-AF1   | Develop the use of apprenticeships and work-linked training for the sea and coastal sectors  |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     |    |
| DE-OSE-VIII-1-AF1 | Development of a fisheries strategy, to build with professionals   |    |    |    |    | I  |    |     |      |     |     |     |          |    |     |     |     |    |
| DE-OSE-VIII-2-AF1 | Raising awareness and training in sustainable fishing  | P  | P  | P  | P  | P  | P  |     |      |     |     |     |          |    |     |     |     |    |

DE-OSE-II → Social Rights, Training; DE-OSE-VIII → Fishing

This chapter of the action plan concerns support for training and employment in the maritime sectors. Composed of five new actions, all socio-economic, it is likely to generate seven impacts, almost all of them positive.

The action of awareness raising and training in sustainable fishing concentrates the positive impacts because it is quite strongly focused on environmental issues (knowledge of biodiversity, awareness of pressures, impact avoidance).

The action to develop a fisheries strategy has an uncertain impact on commercial species insofar as it reinforces stock management and control of fishing effort carry-over, but in a context that remains uncertain despite the Brexit agreement, which cannot totally exclude a risk of increased pressure in the more or less short term.

It should be noted that the three actions concerning maritime labour capital (actions on social rights and training) have no environmental impact.

### 2.2 A blue economy that makes sustainable use of marine resources

|                 |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|-----------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| DE-OSE-IX-1-AF1 | Update the assessment of regional silica sand and shell sand requirements by 2025<br>Brittany and Pays de la Loire (DOGGM) | P  |    |    | P  | P  | P  |     |      |     | P   | P   |          |    |     |     |     | P  |
| DE-OSE-IX-1-AF2 | For silica sand, seek and develop alternative resources from recycling   |    |    |    |    |    |    |     | P    |     |     |     | P        |    |     |     |     | P  |
| DE-OSE-X-2-AF1  | Support innovation in the field of marine biotechnology and accompany the industrial opportunities                         |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     |    |
| D03-OE02-AN1    | Identify priority local stocks for which management could be improved, and draft plans of corresponding management         |    | P  | P  | P  | P  | P  |     |      |     |     |     |          |    |     |     |     | P  |

DE-OSE-IX → Marine aggregates; DE-OSE-X → Biotechnology; D03 → Commercial species/Fisheries

This chapter of the action plan concerns the sustainable use of marine resources. Composed of four new actions, three of which are socio-economic and one environmental, it is likely to generate 16 impacts, all of them positive. Indeed, these actions aim to strengthen the sustainability of activities exploiting natural resources (marine aggregates extraction,

commercial maritime fishing), and to value other resources (use of alternative sedimentary resources and marine biotechnologies).

For marine aggregates, both actions have direct positive potential impacts on knowledge. The first action may also have potential indirect positive impacts on 6 issues, if the action is accompanied by a reduction in the volumes extracted, bearing in mind that the DOGGM prevents the creation of any new concessions. The second action may have two complementary issues to the first. In total, nine issues may be concerned.

The action on marine biotechnology does not have an easily identifiable impact, as this field is still largely untapped to identify the potential of marine resources.

The environmental action concerning the support of Regional Fisheries Committees in their management of local fish stocks (not covered by quota management) in order to establish management plans for species considered to be priorities, has, like all environmental actions, entirely positive impacts, here on six issues.

| 2.3 A blue economy driven by the ecological transition |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|--|--|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| DE-OSE-I-1-AF2   | Developing maritime transport by sail  |    |    |    |    |    |    |     |      |     |     |     |          |    |     | P   |     | P  |
| DE-OSE-III-1-AF1                                       | Identifying existing ETC (Ecological Transition Contract) approaches in the coastline and sharing the replicable experiments                                     |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     |    |
| DE-OSE-III-1-AF2                                       | Supporting the implementation of projects involving the maritime and coastal areas of the Brittany/Loire region circular economy roadmap (FREC)                  |    |    |    |    |    |    |     | P    |     |     |     | P        |    |     |     |     |    |
| DE-OSE-V-2-AF2   | Supporting ports towards sustainable practices   | P  |    |    | P  |    |    |     | P    | P   |     |     | P        |    |     | P   |     |    |
| DE-OSE-V-3-AF1   | Supporting the implementation of the pathway to "Ecological transition" of the major port's strategic project  |    |    |    |    |    |    |     |      |     | I   |     | P        |    |     | P   |     |    |
| DE-OSE-VI-1-AF1  | Supporting project leaders in the field of environmentally and energetically efficient shipbuilding and nautical industries                                      |    | P  |    |    |    |    |     | P    |     |     |     |          |    |     | P   |     |    |
| DE-OSE-VIII-3-AN1                                      | Promoting research into technical innovations for the fisheries sector   | P  | P  | P  | P  | P  | P  |     | P    |     | P   |     | P        |    |     | P   |     |    |
| D08-OE06-AN1   | Encouraging and supporting the implementation of pooled dredging and promoting the sustainable creation of sediment recovery channels adapted to the territories | P  | P  | P  | P  | P  | P  |     | P    |     | P   |     |          |    |     |     |     |    |
| D10-OE01-AN5   | Encouraging the reduction, collection and recovery of waste from maritime activities and supporting activities towards sustainable equipment                     | P  | P  | P  | P  | P  | P  |     | P    |     |     |     | P        |    |     |     |     | P  |
| D10-OE02-AN1   | Improving waste management in ports, develop passive waste fishing and studying methods of recovering plastics that have been at sea                             | P  | P  | P  | P  | P  | P  |     | P    |     |     |     | P        |    | P   |     |     | P  |
| D10-OE02-AN2   | Continue the rollout of the European Clean Ports certification   | P  | P  | P  | P  | P  | P  | P   | P    | P   |     |     | P        |    |     |     |     |    |

DE-OSE-I → Maritime transport; DE-OSE-III → Circular economy; DE-OSE-V → Ports; DE-OSE-VI → Shipbuilding and marine industry; DE-OSE-VIII → Fisheries; D08 → Contaminants; D10 → Waste

This chapter of the action plan concerns the ecological transition of the maritime coastline and its activities. It consists of 11 new actions, seven of which are socio-economic and four environmental, and is likely to generate 63 impacts, all of which are positive except for one which is uncertain.

The positive impacts concern 14 issues, with contaminants and waste being the best covered, which can be explained by the fact that this chapter focuses on waste management and decarbonisation of the blue economy on the coast. Four environmental actions dedicated to these topics are attached to this chapter and the socio-economic actions contribute equally to the positive impacts on these two themes (maritime and coastal circular economy, good port practices, fleet renewal, etc.). In addition, the efforts made in the field of decarbonisation (hydrogen propulsion, bio-based components, reduction of atmospheric pollutants), in particular in the fields of maritime transport and port infrastructures, have a positive impact on air.

An uncertain impact remains on the Seabed Integrity issue under the "ecological transition" of the strategic project of the Grand Port Maritime Nantes Saint-Nazaire, uncertainty linked to the project to develop the quay in Nantes, which could potentially lead to artificialisation.

## **OVERVIEW PART II – A SUSTAINABLE BLUE ECONOMY TO BE PROMOTED**

*(See also the point "Cross-sectional reading of the action plan in a few graphs")*

At the end of the analysis of this part II, devoted to the promotion of activities that exploit marine resources in a more sustainable way, it appears that the actions of the plan relating to it are likely to generate almost 86 potential impacts on environmental issues. Almost all (98%) are considered positive, this is a part of the DPA with a very high profile of positive impacts, which are also largely due to socio-economic actions.

With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 57% of the impacts concern issues related to the components of the marine environment, 29% concern issues related to pressures on the marine environment and 14% concern other societal issues.

The issues most strongly affected in this section are all the biocenosis issues (between seven and nine impacts depending on the issue) as well as pressures related to contaminants (9) and waste (8). Knowledge is also fairly well covered (6), as well as air (5) and even the integrity of the seabed (4). Two issues are not concerned (noise and risks).

### III- UNNATURAL HERITAGE TO BE ENRICHED

| 3.1 Protection of species and their habitats |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|--|--|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| DE-OSE-VII-2-AF3                             | Developing actions that promote the development of ecosystem services in marine and coastal ecosystems, carried out by water sports structures or those doing water sports | P  | P  | P  | P  | P  | P  |     |      |     |     |     |          |    |     |     |     |    |
| TE-OSE-II-3-AF4                              | Strengthening the prevention and control of non-native species on the Ponant islands   |    |    | P  |    |    |    |     |      | P   |     |     |          |    |     |     |     |    |
| D01-HB-OE10-AN3                              | Contribute to strengthening the consideration of the sensitivity of deep-sea habitats in the Atlantic at community level   | P  |    |    |    |    | P  |     |      |     |     |     |          |    |     |     |     |    |
| D01-OM-OE03-AN1                              | Developing and implementing appropriate management and protection tools for high-stake seabird species at the sub-regional level   | P  |    | P  | P  | P  | P  |     | P    |     | P   |     | P        |    | P   |     |     | P  |
| D01-OM-OE04-AN1                              | Monitoring and taking action to combat introduced and domesticated species on seabird breeding sites.  |    |    | P  |    |    | P  |     |      |     |     |     |          |    |     |     |     |    |
| D01-OM-OE05-AN1                              | Identifying, maintaining and restoring mid-coastal and functional seabird habitats that are degraded and/or exposed to coastal habitat compression.                        | P  |    | P  | P  | P  | P  |     |      |     | P   | P   |          |    | P   |     | P   | P  |
| D01-PC-OE01-AN1                              | Reviewing the regulations on elasmobranch catches and, on this basis, identifying the actions to be implemented at national and local level.                               |    |    |    | P  | P  | P  |     |      |     |     |     |          |    |     |     |     | P  |
| D01-PC-OE02-AN1                              | Developing and implementing a multi-species National Action Plan (NAP) for elasmobranchs   |    |    |    | P  | P  | P  |     |      |     |     |     |          |    |     |     |     | P  |
| D01-PC-OE03-AN1                              | Developing and implementing a national amphihaline migratory plan for optimised management of migratory fish throughout the land-sea continuum                             | P  |    |    | P  | P  | P  |     |      |     | P   | P   |          |    |     |     |     |    |
| D01-PC-OE05-AN1                              | Strengthening the protection of Important Fisheries Functional Areas (IFAs), in particular by setting up pilot Fisheries Conservation Areas (FCAs) on each coast           | P  |    |    | P  | P  | P  | P   | P    |     | P   |     |          |    |     |     |     | P  |
| D02-AN1                                      | Improving the management of non-native marine species  | P  |    |    | P  | P  | P  |     |      | P   |     |     |          |    | P   |     |     | P  |
| D07-OE04-AN1                                 | Defining the modalities for taking better account of the needs of freshwater supplies in the environment seafarers in the regulation                                       |    |    | P  | P  | P  | P  |     |      |     |     | P   |          |    | P   |     |     | P  |
| AT-06  | Submitting and implementing a Life project "Mobile marine species"   |    | P  | P  | P  |    |    |     |      |     |     |     |          |    |     |     |     |    |

DE-OSE-VII → Water sports; TE-OSE-II → Territories/ENI; D01-HB, OM, PC → Biodiversity; D02 → ENI; D07 → Hydrographic conditions; AT-06 → Cross-cutting action

This chapter of the action plan concerns the preservation of habitats and species in the marine environment. It consists of 13 new actions, 11 of which are environmental and two socio-economic, and is likely to generate 71 impacts, all of them positive.

The positive impacts concern almost all the issues (15 out of 17) but with a strong diversity, since there are between one and 11 impacts depending on the issue. The issues best covered are fish and cephalopods, commercial species and food webs. In particular, the chapter includes four out of six environmental actions dedicated to fish and cephalopods (regulation of elasmobranch catches, national amphihaline and multi-species migratory plans relating to elasmobranchs, protection of important functional halieutic areas) but also other actions with positive impacts on the latter (for example, NIS or bird environmental actions or socio-economic actions for the development of ecosystem services by nautical structures or practitioners). Three other issues are also relatively well covered: benthic habitats, marine birds and knowledge.



## 3.2 Pollution control

|                 |   | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | From | Br | Pay | Air | Ris | Co |
|-----------------|---|----|----|----|----|----|----|-----|------|-----|-----|-----|------|----|-----|-----|-----|----|
| DE-OSE-VI-2-AF1 | Developing the ship dismantling industry  |    |    |    |    |    |    |     | P    |     |     |     | P    |    |     |     |     |    |
| TE-OSE-I-3-AF1  | Integrating the phycotoxin issue  |    |    |    |    |    |    | P   | P    |     |     |     |      |    |     |     |     | P  |
| TE-OSE-II-3-AF5 | Monitoring and controlling air quality on the Ponant islands  |    |    |    |    |    |    |     |      |     |     |     |      |    |     | P   |     | P  |
| D05-OE01-AF1    | Reducing excessive nutrient inputs and transferring them to the marine environment  | P  | P  | P  | P  | P  | P  | P   |      |     |     |     |      |    |     | P   |     |    |
| D08-OE03-AN1    | Mandatory reporting of chemical discharges at sea in digital format by chemical tankers   |    |    |    |    |    |    |     | P    |     |     |     |      |    |     |     |     | P  |
| D08-OE04-AN1    | Identifying and equipping with effluent treatment systems the careening areas of marinas, mooring areas and boatyards.<br>Raising awareness among managers and users of good docking practices. | P  | P  | P  | P  | P  | P  |     | P    |     |     |     |      |    |     |     |     |    |
| D08-OE05-AN1    | Limiting/prohibiting discharges from open-loop scrubbers in specific areas  | P  | P  | P  | P  | P  | P  |     | P    |     |     |     |      |    |     |     |     |    |
| D08-OE06-AN2    | Studying / evaluating / reducing sources of endocrine disruptors released into the sea via dredged sediments  |    |    |    |    |    |    |     | P    |     |     |     |      |    |     |     |     | P  |
| D09-OE01-AF1    | Raising awareness of boaters on the issue of management of discharges from recreational vessels in the  | P  | P  | P  | P  | P  | P  |     | P    |     |     |     |      |    |     |     |     |    |
| D10-OE01-AN1    | Preventing waste discharges upstream of sewage and stormwater systems   | P  | P  | P  | P  | P  | P  |     | P    |     |     |     | P    |    | P   |     |     |    |
| D10-OE01-AN2    | Combating waste in sewage and stormwater systems  | P  | P  | P  | P  | P  | P  |     | P    |     |     |     | P    |    | P   |     |     | P  |
| D11-OE01-AN1    | Collecting impulsive noise data for better knowledge of the impact of human activities on the marine environment  |    | P  | P  | P  | P  | P  |     |      |     |     |     |      | P  |     |     |     | P  |

DE-OSE-VI → Naval and nautical industry; TE-OSE-I → Territories/Health risks; TE-OSE-II → Territories; D05 → Eutrophication; D08-09 → Contaminants; D10 → Waste; D11 → Noise

This chapter of the action plan concerns the fight against water, solids and noise pollution. It is similar to the previous one in terms of profile, as it also consists of 12 new actions, nine of which are environmental and three socio-economic, the latter being likely to generate 66 impacts, all of which are positive.

The positive impacts concern many issues (13 out of 17), but above all issues related to the biocenosis (62% of positive impacts), the contaminants issue (nine positive impacts) and to a lesser extent the knowledge issue (six positive impacts). The positive impacts on habitats and species are exclusively linked to environmental actions, while those on contaminants are also linked to socio-economic actions (ship dismantling, integration of the phycotoxin issue in the territories).

It should be noted that the issue of contaminants is particularly covered thanks to complementary actions in the Loire-Brittany SDAGE (2022-2027), which concern support for the reduction of contaminant discharges linked to pleasure boating and maritime transport of goods, by continuing to equip boat careening areas with water treatment systems, by managing water from scrubbers installed on ships to reduce pollution from exhaust fumes, and by declaring chemical discharges into the sea by chemical tankers in digital format.

**3.3 Reduction of anthropogenic pressures**

|                  |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | From | Br | Pay | Air | Ris | Co |
|------------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|------|----|-----|-----|-----|----|
| DE-OSE-VII-1-AF1 | Raising awareness and training professionals and users in the practice of sustainable boating  | P  | P  | P  | P  | P  |    |     | P    |     |     |     | P    |    |     |     |     |    |
| RF-OSE-II-1-AF1  | Carrying out studies to improve knowledge of the impacts of activities at sea  | P  | P  | P  | P  |    | P  |     | P    | P   | P   | P   | P    |    | P   |     |     | P  |
| RF-OSE-II-1-AF2  | Improving knowledge of fisheries   | P  | P  | P  | P  | P  |    |     |      |     | P   |     |      |    |     |     |     | P  |
| D01-HB-OE01-AN1  | Formulating management recommendations for activities taking place on salt meadows based on a dedicated observatory  | P  |    | P  | P  | P  | P  |     |      |     | P   |     |      |    | P   |     | P   | P  |
| D01-HB-OE06-AN1  | Strengthening the consideration of benthic habitats in offshore authorisations   | P  |    |    |    |    |    |     |      |     | P   | P   |      |    | P   |     | P   | P  |
| D01-HB-OE06-AN2  | Re-examining the framework for issuing derogatory trawl fishing authorisations and dredging fishing authorisations in the 3-mile band  | P  |    |    | P  | P  | P  |     |      |     | P   |     |      |    |     |     |     | P  |
| D01-MT-OE01-AN1  | Strengthening the supervision and regulation of outdoor sports and leisure activities affecting marine mammals and of commercial marine mammal watching activities   |    | P  |    |    |    |    |     |      |     |     |     |      |    |     |     |     |    |
| D01-MT-OE03-AN1  | Identifying and reducing the risk of collision between shipping and marine mammals on the scale of the Atlantic coast  |    | P  |    |    |    |    |     |      |     |     |     |      |    |     |     |     |    |
| D01-OM-OE01-AN1  | Identifying and reducing the risk of incidental capture for each bird species and marine mammals of community interest   |    | P  | P  |    | P  | P  |     |      |     |     |     |      |    |     |     |     | P  |
| D01-OM-OE06-AN1  | Strengthening the consideration of the sensitivity of species to disturbance in authorisations by and in the local regulations   | P  | P  | P  | P  | P  | P  |     |      |     | P   |     |      | P  | P   |     |     | P  |
| D01-OM-OE06-AN2  | Structuring the practice of coastal and marine sports and leisure activities (information, awareness-raising and regulation) on issues of sensitivity of species and environments  | P  | P  | P  |    |    |    |     | P    |     |     |     | P    | P  |     |     |     |    |
| D01-PC-OE01-AN2  | Raising awareness and training professional and leisure fishermen to recognise and deal with elasmobranchs likely to be caught accidentally, and extending compulsory declarations in the event of accidental catches    |    |    |    | P  | P  | P  |     |      |     |     |     |      |    |     |     |     |    |
| D01-PC-OE3-AN2   | Avoiding or reducing the risks of damage to the population dynamics of amphihaline species linked to catches in sectors where amphihalines are at stake, in addition to existing management plans                        |    |    |    | P  | P  | P  |     |      |     |     | P   |      |    |     |     |     | P  |
| D03-OE03-AN1     | Harmonising and strengthening the regulation of recreational fishing and raise awareness of its use among anglers<br>Implementation  | P  | P  | P  | P  | P  | P  |     |      |     |     |     | P    |    |     |     |     | P  |
| D04-AN1          | Contributing to a better management of the harvesting of forage species at European level.   |    | P  | P  | P  | P  | P  |     |      |     |     |     |      |    |     |     |     | P  |
| D06-OE01-AN2     | Supporting the implementation of the ARC sequence at sea in the context of project authorisations leading to the artificialisation of the marine environment   | P  | P  | P  | P  | P  | P  |     |      |     | P   |     |      |    |     |     | P   | P  |
| D07-OE03-AN1     | Promoting land-sea connectivity in estuaries and lagoons in addition to what is being done on ecological continuity under the SDAGE and PLAGEPOMI, by intervening on obstacles impacting currentology and sedimentology. | P  |    | P  | P  | P  | P  |     |      |     | P   | P   |      |    | P   |     | P   | P  |
| AT01             | Developing the network of strong protection zones and strengthening control of them  | P  | P  | P  | P  | P  | P  |     |      |     | P   | P   |      |    | P   |     |     |    |
| AT-04            | Improving the monitoring of the marine environment   | P  | P  | P  | P  | P  | P  | P   | P    | P   | P   | P   | P    | P  |     |     |     |    |

DE-OSE-VII → Water sports; RF-OSE-II → Transversal actions; D01-HB, MT, OM, PC → Biodiversity; D03 → Commercial species; D04 → Food webs; D06 → Seabed integrity; D07 → Hydrographic conditions; AT-01, 04 → Cross-cutting actions

This chapter of the Action Plan concerns the contribution of the DFS to the reduction of many anthropogenic pressures on the marine environment. It thus comprises the largest number of new actions in the PDA (19 actions), of which 16 are environmental (on all registers of biodiversity, habitats and species, but also commercial species, food webs, seabed integrity, hydrographic conditions) and three socio-economic. In total, this chapter is likely to generate 133 impacts, with a greater number of impacts, all of which are positive.

The positive impacts concern all issues except one (air) but with a high degree of diversity, since there are between 1 and 14 impacts depending on the issue. The issues best covered

concern the biocenosis (60% of positive impacts), the integrity of the seabed (10 positive impacts) and the knowledge issue (12 positive impacts).

Many of the actions presented in this chapter are aimed at better integrating the sensitivity of marine species and habitats (impact studies and impact assessments, appraisal of authorisation requests, support for the ERC sequence at sea), reinforcing the European or local regulatory framework for certain activities (professional fishing, sports and leisure activities, observation of marine mammals) with regard to targeted species, training professionals in the challenges of marine biodiversity or prefiguring the study of strong protection zones (sectors of remarkable biodiversity). They are the source of the potential positive impacts on the biocenosis.

The knowledge issue is covered in particular by studies or observatories to improve knowledge of the impacts of activities: assessing these impacts on benthic habitats and the integrity of the seabed, studying the impact of fishing on the seabed or the environmental impacts of aquaculture operations, structuring an observatory on salt meadows to promote the sustainability of related operating practices (grazing and saltwort).

### OVERVIEW PART III – A NATURAL HERITAGE TO BE ENRICHED

At the end of the analysis of this part III, devoted to the preservation and enhancement of the marine and coastal heritage, it appears that the actions of the plan relating to it are likely to generate nearly 270 potential impacts on the environmental issues. All of them are considered positive, which makes this part of the plan the one that contributes most to the positive impacts in view of its theme and the very many environmental actions that are linked to it.

With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 62% of the impacts concern issues related to the components of the marine environment, 22% concern issues related to pressures on the marine environment and 16% concern other societal issues.

The issues present impacts with a very sparse density (between 2 and 31 impacts). The issues most strongly affected in this chapter are all the biocenosis issues, with between 23 and 31 incidences depending on the issue (mainly PC, EC and RT). Some pressure issues are fairly well covered, such as contaminants (15) and seabed integrity (14) and to a lesser extent litter and hydrographic conditions (nine each). In the societal issues, knowledge is also very well covered (25) and to a lesser extent landscape (12).

## IV- STAINABLE AND RESILIENT DEVELOPMENT OF MARINE AND COASTAL AREAS

| 4.1 Coastal risk management and maritime safety |   | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|---|---|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| TE-OSE-I-5-AF1                                  | Encouraging the development of local integrated coastline management strategies (including relocation) to complement local flood risk management strategies (SLGRI) | P  |    | P  |    |    |    |     |      |     |     |     |          |    |     |     | P   |    |
| TE-OSE-I-2-AF1                                  | PContinuing the means of making the water body safe   |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     |    |
| TE-OSE-I-2-AF2                                  | Developing acculturation to safety at sea   |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     |    |
| D01-HB-OE06-AN3                                 | Promote Sharing of a better "upstream" knowledge of the impacts of operations to reduce the vulnerability of coastal areas  | P  |    |    |    |    |    |     |      |     | P   | P   |          |    | P   |     | P   | P  |

TE-OSE-I → Territories/Coastline, Access to the sea, Safety at sea; D01 → Biodiversity/Vulnerability reduction

This chapter of the action plan concerns coastal risk management and maritime safety. Composed of four new actions, three of which are socio-economic and one environmental, it is likely to generate nine impacts, all of them positive. It should be noted that these impacts come from only two of the four actions, the other two having no foreseeable impact on the environment.

This is the environmental action with the highest concentration of impacts, which are also positive like all environmental actions. It aims to improve and share knowledge on the environmental impact of different types of coastal development: impact estimates using mathematical models, taking into account the cost-effectiveness of vulnerability reduction operations by favouring so-called "soft" techniques. In doing so, it seeks to improve the link between the SBS-D and the tools for the prevention and management of coastal risks.

In order to better anchor the consideration of erosion hazards in coastal territories, it is important to support Breton territories (winners of the call for expressions of interest in integrated coastline management, other strategic territorial approaches) in the development of their local strategies and project leaders in operational actions. In particular, it is worth highlighting the interest, in supporting operational project leaders, in promoting nature-based solutions as they can be beneficial for the preservation of coastal habitats and coastal bird colonies.

| 4.2 A planning and resilience strategy |   | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | From | Br | Pay | Air | Ris | Co |
|--|---|----|----|----|----|----|----|-----|------|-----|-----|-----|------|----|-----|-----|-----|----|
| DE-OSE-VIII-6-AF1                      | Supporting the development of aquaculture activity through various management and planning tools (e.g.: implementation of national policies)  | N  |    | N  | N  | I  |    | I   | N    | N   | N   | N   | N    |    | I   |     |     |    |
| DE-OSE-VIII-6-AN1                      | Securing application procedures authorisation for the exploitation of marine cultures (resumption of the formulation of the CIMER 2019 form)  | P  |    | P  | P  | P  |    | P   | P    | P   | P   | P   | P    |    | P   |     |     | P  |
| TE-OSE-I-1-AF1                         | Developing and perpetuating regional knowledge of coastal risks and observation of the coastline  |    |    |    |    |    |    |     |      |     |     |     |      |    |     |     | P   | P  |
| TE-OSE-II-1-AF1                        | Promoting access to the sea on the coast and in the backcountry for activities that depend on this access to water and that structure the blue economy (fisheries, aquaculture, nautical, naval and port industries, nautical activities) | P  |    |    |    |    | P  |     |      |     |     |     | P    |    | P   |     |     | P  |
| TE-OSE-II-2-AF1                        | Encouraging the maintenance of an active and socially and generationally mixed island population  |    |    |    |    |    |    |     |      |     |     |     |      |    |     |     |     |    |
| TE-OSE-II-4-AN1                        | Assessing the effects of land-based policies on maritime territories before their implementation  |    |    |    |    |    |    |     |      |     |     |     |      |    |     |     |     | P  |
| TE-OSE-II-6-AF1                        | Facilitating access and soft traffic for the public on the coast  |    |    |    |    |    |    |     |      |     |     |     |      |    |     | P   |     |    |
| TE-OSE-II-6-AF2                        | Maintaining public access to coastal paths  |    |    |    |    |    |    |     |      |     |     |     |      |    | P   |     | P   |    |
| D06-OE01-AN1                           | Developing a strategic front-end vision on artificialisation with the aim of moving towards "zero net artificialisation"  | P  | P  | P  | P  | P  | P  |     |      |     | P   | P   |      |    | P   |     | P   | P  |
| D10-OE01-AN3                           | Identifying priority landfills and areas of waste accumulation and the various funding opportunities for their reduction  | P  | P  | P  | P  | P  | P  |     | P    |     |     |     | P    |    | P   |     |     | P  |

DE-OSE-VIII → Aquaculture; TE-OSE-I → Territories/Coastal risks; TE-OSE-II → Territories; D06 → Seabed integrity; D10 → Waste

This chapter of the action plan concerns the foundations of the development and resilience strategy for the coastline. Composed of 10 new actions, eight of which are socio-economic and two environmental, it is likely to generate 55 impacts, 44 of which are positive but eight negative and three uncertain.

Almost half of the positive impacts come from the two environmental actions and cover 13 issues, in particular all those of biocenosis, landscape and knowledge. These actions aim to reduce the artificialisation of the public maritime domain (mapping of areas to be preserved, evolutionary planning of development projects) and to limit the risk of dumping waste at sea (mapping of landfills and areas where waste accumulates on the coast, study of their elimination). A little more than half of the positive impacts come from socio-economic actions, in particular the one concerning the securing of procedures for the examination of applications for authorisation to exploit marine cultures.

A single socio-economic action concentrates the 11 potential negative and uncertain impacts on as many environmental issues. This involves the action to strengthen access to the coastline in urban planning documents for certain economic activities that depend heavily on access to the sea, with specific actions for aquaculture: defining zones conducive to the development of this activity, simplifying procedures.

The aim is to reduce the administrative burden of authorisation, facilitate social acceptance of fish farms and support the installation of young fish farmers. These impacts potentially concern all the issues related to the development (intensification or new areas) of the aquaculture activity and noted in the table above.

## OVERVIEW PART IV – A STAINABLE AND RESILIENT DEVELOPMENT OF MARINE AND COASTAL AREAS

(See also the point "Cross-sectional reading of the action plan in a few graphs")

At the end of the analysis of this part IV, devoted to the development of more sustainable and resilient marine and coastal areas, it appears that the actions of the plan relating to this area are likely to generate almost 64 potential impacts on environmental issues. 83% are considered positive, but also 13% negative. Three impacts appear uncertain. This section has the highest profile in terms of negative impacts (in proportion), which is due to the development of aquaculture activity.

With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 39% of the impacts concern issues related to the components of the marine environment, and then are divided equally between issues related to pressures and other societal issues (30% and 31% respectively).

Societal issues are therefore particularly invested in this part, compared to the other parts of the action plan, and in particular risks and landscape. Knowledge is also relatively well invested, but this is the case everywhere.

## V- RESEARCH AND INNOVATION AT THE HEART OF THE COASTLINE'S OUTREACH

| 5.1 Research and innovation |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | From | Br | Pay | Air | Ris | Co |
|-----------------------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|------|----|-----|-----|-----|----|
| DE-OSE-I-2-AF1              | Supporting the development of emerging blue economy activities and sectors               | P  |    |    |    |    |    |     |      |     |     |     | P    |    |     | P   |     | P  |
| DE-OSE-III-1-AF5            | Encouraging and developing eco-design channels   |    |    |    |    |    |    |     |      |     |     |     |      |    |     |     |     | P  |
| DE-OSE-IV-2-AF1             | Supporting the technological development of MRE to reduce costs and increase reliability | N  | N  | N  | I  | I  | I  |     | N    | I   | N   | I   |      | N  | I   | P   |     | P  |
| DE-OSE-VIII-6-AF2           | Supporting the development of aquaculture production through applied research            | I  |    |    | I  | I  | I  |     | P    | I   |     |     | P    |    |     |     |     | P  |
| DE-OSE-X-1-AF1              | Coordinating and sharing research on marine biotechnology                                |    |    |    |    |    |    |     |      |     |     |     |      |    |     |     |     | P  |

DE-OSE-I → Blue economy; DE-OSE-III → Circular economy; DE-OSE-IV → EMR; DE-OSE-VIII → Aquaculture; DE-OSE-X → Biotechnologies

This chapter of the action plan concerns research and innovation in the marine and maritime field. Composed of five new actions, all socio-economic, it is likely to generate 28 impacts, 11 positive, 11 uncertain and six negative.

This chapter presents one of the most mixed situations of the action plan from the point of view of environmental impacts, this situation being linked to the variability of impacts according to the research or innovation themes (emerging sectors, eco-design, MRE, aquaculture, marine biotechnologies). For all these actions, there is a favourable impact on the knowledge issue. Then it depends on the theme:

- Ecodesign and marine biotechnologies: no other impact noted than that on knowledge, even if for biotechnologies, potential indirect impacts (transition from research to business) are probably not identifiable at this stage.
- Emerging sectors: potentially positive impacts on waste (reduction of waste through the development of eco-design/recycling sectors)  
The project will also address issues of habitat (less impactful anchors) and air quality (new modes of propulsion).

- Aquaculture: potentially positive impacts on waste or contaminants, but uncertain impacts on the environment through the introduction of genetically selected species by humans.
- MRE: various impacts linked to experimentation and the implementation of demonstration projects, echoing those identified for MRE projects as such.

### 5.2 The mobilisation of scientific expertise

|                 |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|-----------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| DE-OSE-IV-1-AF1 | Coordinate the monitoring and environmental assessment of offshore wind farms at the level of the coastline  | P  | P  | P  | P  | P  | P  |     | P    | P   | P   | P   |          | P  | P   | P   |     | P  |
| DE-OSE-IX-1-AF3 | Set up a regional committee for coordinated monitoring of extraction sites at the Pays de la Loire level, and/or annual reporting to the CMF NAMO standing committee |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     | P  |
| RF-OSE-II-2-AF1 | Supporting the coast's maritime research pool and its contribution to research programmes  |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     | P  |
| D01-OM-OE02-AN1 | Prefiguring a national coordination body for the coastline scientific councils (CSF) on offshore wind power  |    |    | P  | P  | P  |    |     |      |     |     |     |          | P  |     |     |     | P  |

DE-OSE-IV → EMR; DE-OSE-IX → Marine aggregates; RF-OSE-II → Research; D01 → EMR

This chapter of the action plan concerns the mobilisation of scientific expertise. Composed of four new actions, three of which are socio-economic and one environmental, it is likely to generate 21 impacts, all of them positive.

These impacts concern firstly the knowledge issue, and then almost all the issues through two actions aimed at setting up and leading bodies on offshore wind energy (recommendations of the Inter-ministerial Committee for the Sea 2019):

- In particular, the management and monitoring committee for the parks on the scale of the coastline in order to homogenise the ERC measures and monitoring is likely to have a broad spectrum of impacts, as 13 issues may be concerned beyond knowledge;
- the coastlineT scientific council, responsible for issuing an opinion on scientific protocols, monitoring results and proposals for changes to ERC measures, which will be echoed at national level, in a body coordinating these façade scientific councils in order to exchange information on the work of the façades and coordinate proposals for knowledge acquisition programmes, will be particularly interested in limiting the impacts of offshore wind farms on biodiversity, particularly marine birds.

### 5.3 Raising awareness and sharing knowledge

|                  |   | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | Fro<br>m | Br | Pay | Air | Ris | Co |
|------------------|---|----|----|----|----|----|----|-----|------|-----|-----|-----|----------|----|-----|-----|-----|----|
| DE-OSE-I-3-AF1   | Improving the dissemination of information on the blue economy  |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     | P  |
| DE-OSE-II-2-AF1  | Encourage the setting up of an observatory of maritime activities   |    |    |    |    |    |    |     |      |     |     |     |          |    |     |     |     | P  |
| DE-OSE-III-1-AF3 | Encourage networking and dissemination of information on the circular economy of the coastline                                |    |    |    |    |    |    |     | P    |     |     |     | P        |    |     |     |     |    |
| TE-OSE-I-4-AF1   | Promote awareness-raising, training and education activities on the foreshore and marine areas eutrophied via citizen science |    |    |    |    |    |    | P   |      |     |     |     |          |    |     |     | P   | P  |
| D10-OE01-AN4     | Raising awareness, informing and educating on ocean pollution by waste  | P  | P  | P  | P  | P  | P  |     | P    |     |     |     | P        |    | P   |     |     |    |
| AT-02            | Developing the network of marine educational areas  | P  | P  | P  | P  | P  | P  | P   | P    | P   | P   | P   | P        | P  | P   |     |     |    |

DE-OSE-I and II → Blue economy; DE-OSE-III → Circular economy; TE-OSE-I → Eutrophication; D10 → Waste; AT-02 → Marine educational areas

This chapter of the action plan is about awareness raising and knowledge sharing. Composed of four new actions, three of which are socio-economic and one environmental, it is likely to generate 30 impacts, all of them positive.

These impacts are mainly generated by the two environmental actions, the development of the network of marine educational areas and awareness of marine pollution by waste, both covering a wide range of issues (14 out of 17).



**5.4 Digital access to information**

|                  |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | From | Br | Pay | Air | Ris | Co |
|------------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|------|----|-----|-----|-----|----|
| DE-OSE-V-2-AF1   | Supporting the ports of the coastline in switchover to digital   |    |    |    |    |    |    |     | P    |     | P   |     | P    |    |     |     |     |    |
| DE-OSE-VI-1-AN2  | Supporting the digital transformation of companies, the production chain (parent companies and subcontractors) and the products of the naval and nautical industries |    |    |    |    |    |    |     |      |     |     |     |      |    |     |     |     | P  |
| DE-OSE-VII-2-AF2 | Developing tools to facilitate sustainable boating   | P  | P  | P  | P  |    | P  |     |      |     |     |     |      |    |     |     |     | P  |
| RF-OSE-II-1-AF3  | Improving data collection and access to make better use of it  |    |    |    |    |    |    |     |      |     |     |     |      |    |     |     |     | P  |
| AT-03            | Developing an integrating application of regulations and information related to the spaces in destination of pleasure boating  | P  | P  | P  | P  | P  | P  |     |      |     |     |     | P    | P  |     |     |     |    |

DE-OSE-V → Ports; DE-OSE-VI → Shipbuilding and nautical industries; DE-OSE-VII → Boating and yachting; RF-OSE-II → Transversal action; AT-03 → Nautical and yachting industries

This chapter of the action plan concerns the use of digital tools in sea-related activities to promote their environmental sustainability. Composed of four new actions, three of which are socio-economic and one environmental, it is likely to generate 19 impacts, all of them positive.

The positive impacts concern 11 issues, in particular knowledge, biodiversity and waste. Two actions are particularly favourable to biodiversity: digital tools for nautical and leisure activities (awareness of good environmental practices, including waste and noise for leisure activities).

**5.5 A coastline open to the world**

|                  |  | HB | MT | OM | PC | EC | RT | Eut | Cont | NIS | Int | Hyd | From | Br | Pay | Air | Ris | Co |
|------------------|--|----|----|----|----|----|----|-----|------|-----|-----|-----|------|----|-----|-----|-----|----|
| DE-OSE-I-1-AN1   | Defining at national level a structuring programme to support innovation and research in the maritime domain |    |    |    |    |    |    |     | P    |     |     |     | P    |    |     | P   |     | P  |
| DE-OSE-III-1-AF4 | Integrating the European level in coastline circular economy approaches                                      |    |    |    |    |    |    |     | P    |     |     |     | P    |    |     |     |     |    |
| DE-OSE-V-1-AF1   | Seeking coordination of all ports in the interregion and with the Atlantic coast                             | I  | N  | N  |    |    |    |     | I    | N   |     |     | N    | N  |     | N   |     |    |
| RF-OSE-III-1-AF1 | Identifying the obstacles to development for companies that already export their know-how                    |    |    |    |    |    |    |     |      |     |     |     |      |    |     |     |     | P  |

DE-OSE-I → Research; DE-OSE-III → Circular economy; DE-OSE-V → Ports; RF-OSE-III → Blue economy

This chapter of the action plan concerns the opening up of the coastline to the world. Composed of 4 new actions, all socio-economic, it is likely to generate 15 impacts, seven positive, two uncertain and six negative.

This chapter presents one of the most mixed situations of the Action Plan in terms of environmental impacts, which is linked to the coordination of port strategies at intra- and inter-coastline level. Indeed, the latter is likely to generate all the negative and uncertain impacts identified in the analysis. The potential negative impacts are related to the possible increase in maritime traffic pressures, particularly around the major port of Nantes Saint Nazaire. The uncertain impacts concern the potential, albeit limited, reduction in the impacts of dredging carried over to Nantes Saint Nazaire and the increase in pollution that could be linked to a possible increase in maritime traffic.

## OVERVIEW PART V – RESEARCH AND INNOVATION AT THE HEART OF THE COASTLINE'S OUTREACH

(See also the point "Cross-sectional reading of the action plan in a few graphs")

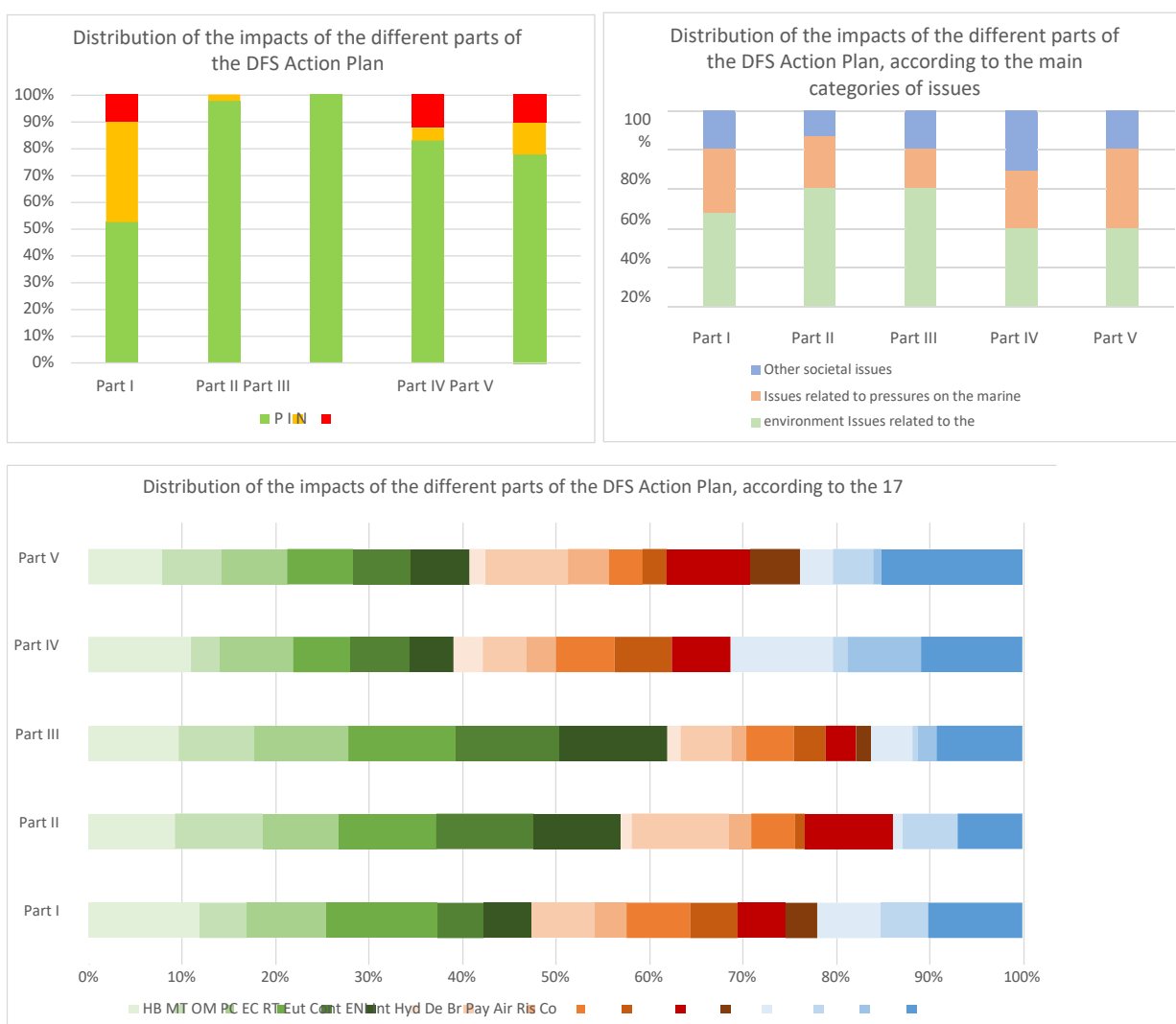
At the end of the analysis of this part V, devoted to marine and maritime research and innovation, it appears that the actions of the plan relating to it are likely to generate almost 113 potential impacts on environmental issues. Just over 75% are considered positive, and the remaining impacts are equally uncertain and negative. This section also has the highest absolute negative impact

(12). These are to be linked to research and innovation actions including experiments on MRE, aquaculture and ports.

With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 41% of the impacts concern issues related to the components of the marine environment, 35% concern issues related to pressures on the marine environment and 24% concern other societal issues.

All issues are concerned in this section, with priority given to knowledge (17). Next, issues related to the biocenosis stand out (between 7 and 9 incidences) as well as contaminants and waste for pressures, but not always positively given the profile of the section described above.

### CROSS-SECTIONAL READING OF THE ACTION PLAN IN A FEW GRAPHS



## 5.2.2. Impact characteristics

The analysis of the impacts was continued by characterising them according to three criteria:

- **their level of uncertainty.** The question to be answered is "Are the intended effects of the action certain, following its implementation?" The level of uncertainty in

the impact is then **weak** (the effects of the action are certain, following its completion) or **fort<sup>29</sup>** (the effects of the action are uncertain, following its completion).

- **The time frame in which they occur.** The question is: "What is the time frame for the occurrence of the impacts?" Impacts occur in the **short** term (effects of the action occur before the end of the current programming period 2026) or in the **medium-long term** (effects of the action occur beyond this programming period or after several programming periods).
- **Their sustainability.** The question is: "Are the effects of the action reversible?" Impacts are **reversible** (the effects of the action fade over time or can be reversed) or **irreversible** (the effects of the action are permanent over time). This parameter may also be **irrelevant** to the impact.

From this analysis of the impact characterisation, the following lessons can be drawn:

- Half of the positive impacts have a high level of uncertainty, which may be an area for improvement. This concerns in particular issues related to species (seabirds, fish and cephalopods), certain pressures (contaminants, waste) or societal dimensions (landscape and air quality).
- Just over half (51%) of the positive impacts will occur after the expiry of the DPA, which may be another important area to try to improve. This concerns in particular issues related to habitats and species, hydrographic conditions and societal dimensions (landscape, air quality, risks).
- Barely a third of the positive impacts are reversible, which is a strength for positive impacts, as 68% are permanent. On the other hand, even though there are far fewer of them, the negative impacts are all irreversible (apart from 'not applicable'), which is a weakness. This will have to be compensated for, in particular for issues relating to the biocenosis (benthic habitats, mammals and turtles, seabirds, fish and cephalopods) or to pressures (all of them).
- It is very often the same actions that generate negative or uncertain impacts on biocenosis issues (two actions on MRE, one action on fisheries and aquaculture and one action on ports). As a result, several issues share the same characteristics on these negative or uncertain impacts. Furthermore, the negative impacts, although far fewer in number than the positive impacts, have very unfavourable characteristics (all irreversible, three quarters certain and two thirds short-term).
- Note that the impacts on knowledge have favourable characteristics: 90% irreversibility, 88% low uncertainty and 66% short-term. Moreover, there are many of them and there are no uncertain or negative impacts on this issue.

More detailed information on this characterisation is included in the analysis that follows (5.2.3.), as it details the results for each of the 17 issues.

### 5.2.3. Cumulative impacts of the whole DPA

#### 5.2.3.1. BENTHIC HABITATS

The SBSDDPA is likely to generate 57 impacts on benthic habitats, the vast majority being positive (50/57 or 88%). Four and three actions respectively are identified as having uncertain and negative impacts. 50% of the actions in the DPA will potentially impact on this issue.

---

<sup>29</sup> In particular, a high level of uncertainty will be associated with impacts related to actions whose implementation requires referral to supranational bodies. Because of this uncertainty, the objectives associated with these actions are subject to derogations.

These impacts are either sub-actions aimed at improving knowledge (29%) or are of an operational nature (27%) – in particular concrete actions (14%) – or regulatory (12%). These impacts are more strongly direct (31/57 or 54%) than indirect (26/57) and mainly of a perennial nature. However, more than 60% of the positive impacts are expected to occur in the medium to long term, and the effects of half of these impacts are highly uncertain. It should be noted, as detailed in section 5.3, that three environmental actions are directly aimed at protecting or restoring certain benthic habitats (foreshore, deep habitats, transition zones). The negative impacts, although fewer in number, have rather unfavourable characteristics (certain and irreversible).

The three negative impacts arise from actions relating to the development of MRE and aquaculture, including their planning. However, there are some actions in the SBSD that minimise the effects of the latter on benthic habitats:

- The two MRE actions are linked with actions favourable to an overall reduction in their impacts, notably via the coordination of advice and scientific expertise on offshore wind power, which contributes to better monitoring and consideration of the ARC approach.
- The action on the development of aquaculture activity is linked to many other environmental actions that help to reduce its potential effects. With regard to benthic habitats, this involves improving knowledge of the impacts of activities at sea (RF-OSE-II-1-AF1), and a socio-economic action relating to the examination of applications for the installation of marine cultures (DE-OSE-VIII-6-AN1).

Some of the uncertain impacts also find a form of synergy with other actions favourable to a better consideration of the environment, which can be found in part in the actions mentioned above, in particular with regard to aquaculture.

This impact profile seems to show potential positive effects but with rather mixed characteristics on the benthic habitat issue. Negative impacts could be concentrated in certain identified areas (MRE areas, aquaculture activity areas) and for which attention will have to be paid at the planning stage, particularly with regard to the choice of area. In view of the level of challenge assessed in section 4, some of the impacts may potentially allow some vocation areas to move closer to GES, or at least maintain the good status of some habitats. However, it is not possible to make a statement on a return to GES due to the uncertainty of the impact of certain actions and the difficulty of measuring the achievement of good status at the scale of the coastline and its areas of use.

### 5.2.3.2. MAMMALS AND TURTLES

The DFS DPA is likely to generate 42 impacts on marine mammal and turtle populations, the vast majority being positive (39/42 or 93%). Three actions are identified as having negative impacts respectively. 37% of the actions in the DPA will potentially impact on this issue.

The actions and sub-actions generating impacts on mammals and turtles have a typological profile with no predominance, with a relatively balanced distribution of sub-actions between knowledge (25%), awareness/communication/training (22%) and operational (26%) actions (in particular concrete actions - 15%). The regulatory sub-actions are also relatively significant for this issue, although fewer in number than the other three categories. These impacts are more strongly direct (24/42 or 57%) than indirect (18/42). Positive impacts have moderately favourable characteristics, with sustainability being the most favourable. The negative impacts, although fewer in number, have rather unfavourable characteristics (two-thirds certain, short-term, irreversible).

The three negative impacts stem from actions relating to MREs and ports. However, there are some actions in the SBSO that minimise the effects of the latter on benthic habitats:

- The two MRE actions are linked with actions favourable to an overall reduction in their impacts, notably via the coordination of advice and scientific expertise on offshore wind power, which contributes to better monitoring and consideration of the ARC approach. The improvement of knowledge on MRE should also allow a coherent development of this activity in line with the preservation of the TM issue.
- Action on ports, which could lead to an increase in maritime traffic due to greater inter-port coordination and a stated objective of capturing traffic, is linked to environmental action aimed directly at reducing the risks of ships colliding with marine mammals.

This impact profile seems to show potential positive effects, but with rather mixed characteristics on the mammals and turtles issue. Negative impacts could be concentrated in certain identified areas (MRE areas, maritime corridors). In view of the level of challenge assessed in Part 4, all of these impacts may potentially enable certain areas of use to move closer to GES, or at least to maintain the good status of certain marine mammal populations. With regard to turtles, there is no action on these species, which suggests that the DPA will not have any influence on turtle populations in NAMO, which are otherwise few in number on the coast. It is not possible to say whether or not the GES will be achieved: in fact, some areas close to achieving good status could potentially be negatively impacted by the installation of MREs; for other areas where the deviation from the GES is "intermediate", the action of the DPA should have a positive influence, but it is not possible to say whether or not the GES will be achieved.

### 5.2.3.3. MARINE BIRDS

The DFS PDA is likely to generate 52 impacts on marine birds, the vast majority of which are positive (47/52 or 90%). 1 and 4 actions respectively are identified as having uncertain and negative impacts. 45% of the actions in the DPA will potentially impact on this issue.

These impacts are both direct and indirect. The actions generating impacts on seabirds have a typological profile with two dominant features: almost a third of the sub-actions relate to knowledge (28%) while another third relate to operational actions (28%), in particular concrete actions (18%). Among the remaining sub-actions, regulation is also relatively well represented (14%), while the structuring of actors is very little represented. The positive impacts have mixed characteristics with a majority of permanent impacts but also medium to long term. It should be noted, as detailed in section 5.3, that four environmental actions are directly aimed at protecting or restoring marine and coastal bird populations. As regards the negative impacts, although fewer in number, they nevertheless have rather unfavourable characteristics (certain and irreversible).

The three negative impacts stem from actions relating to MRE, ports and aquaculture. However, there are some actions in the SBSO that minimise the effects of the latter on benthic habitats:

- The two MRE actions are linked with actions favourable to a global assessment of their impacts, notably via the coordination of advice and scientific expertise on offshore wind power, which contributes to better monitoring and consideration of the ARC approach.
- Action on ports, which could lead to an increase in maritime traffic due to greater inter-port coordination and a stated objective of capturing traffic, is linked to several environmental actions aimed at reducing the associated pressures, but none of them directly targets the seabird issue.

– The action on the development of aquaculture activity is notably linked to two actions on the improvement of knowledge of the impacts of activities at sea and the reinforcement of instruction procedures linked to the installation of marine cultures could help reduce the potential impacts of the development of aquaculture on marine birds.

The action plan also makes it possible to create synergies between socio-economic and environmental actions: for example, an action to raise the awareness of those involved in and using the water sports sector is in synergy with two environmental actions concerning seabirds, which encourages the taking into account of this issue in the practice of water sports.

This impact profile seems to show potential positive effects but with rather mixed characteristics on the seabird issue. The negative impacts are concentrated in certain identified areas (MRE zones, maritime routes and ports, aquaculture). With regard to the level of challenge assessed in part 4, no vocation zone is close to achieving the GES for the marine bird challenge, one of them even being with a high GES deviation. Even if the PDA has a positive effect on this issue, it does not allow us to formally decide on a return to the GES. The DSF's action thus aims to provide the examining services with the tools and knowledge necessary for the examination of projects and to provide project owners with support in integrating environmental issues into the definition of their projects.

#### 5.2.3.4. FISH AND CEPHALOPODS

The SBSDDPA is likely to generate 59 impacts on fish and cephalopods, the vast majority being positive (53/59 or 90%). 5 and 1 actions respectively are identified as having uncertain and negative impacts. 51% of the actions in the DPA will potentially impact on this issue.

These impacts are almost as much direct (32/59) as indirect (27/59). The actions generating impacts on fish and cephalopods have a typological profile with two dominant sub-actions: almost a third of the sub-actions relate to knowledge (29%) while a quarter relate to operational actions (26%), in particular concrete actions (15%). Among the remaining sub-actions, awareness raising/communication/training is the third most important (18%); regulatory (14%) and planning (10%) sub-actions are also well represented. The positive impacts are fairly unfavourable except for the sustainability of the fish and cephalopods issue. It should be noted that three environmental actions are directly aimed at preserving or restoring fish populations, see section 5.3. The action plan also makes it possible to create synergies between socio-economic and environmental actions with positive effects: in this way, elasmobranchs benefit from links between actions that promote positive synergies for them.

The negative impact identified also has unfavourable characteristics. This is an action to support aquaculture development, the intensity of whose impact will depend on the actual implementation of the new aquaculture areas and the nature of the projects in the action. In addition, some of the actions in the action plan could help to minimise the negative effects of this action on fish, in particular, the planning of aquaculture activity is articulated and has to deal with the reinforcement of the fisheries functional areas.

Uncertain impacts arise from actions on MRE and fishing/aquaculture activities. The two MRE actions are linked to actions that favour a reduction in potential impacts via the coordination of advice and scientific expertise on offshore wind energy, which contributes to better monitoring and consideration of the ARC approach. The actions on fisheries/aquaculture are also linked to other socio-economic actions that could be beneficial to the issue (in particular awareness-raising actions, improving knowledge of impacts, and strengthening regulatory procedures).



This impact profile seems to show potential positive effects but with rather unfavourable characteristics for the fish and cephalopods issue. Although numerous, the positive impacts are likely to be of insufficient intensity to have significant effects on the GES, especially as many species do not reach the GES and all areas of the frontage are ranked with a high gap on this issue. The negative impact could be concentrated in some identified areas (aquaculture) but would require further ARC management in the DPA to reduce its intensity.

### 5.2.3.5. ECOMMERCIAL SPECIES

The SBSDDPA is likely to generate 53 impacts on commercial species, the vast majority being positive (48/53 or 91%). As for the remaining impacts, five actions have uncertain impacts on the issue, but no negative impacts are identified. 46% of the actions in the DPA will potentially impact on this issue.

These impacts are more strongly related to sub-actions aimed at improving knowledge (28%) or are of an operational nature (28%) – in particular concrete actions (17%) – or regulatory (16%). They are more strongly direct (31/53 or 58%) than indirect (22/53). The positive impacts have fairly unfavourable characteristics except for sustainability.

As for the uncertain impacts, they arise from actions on MRE and fishing/aquaculture activities. These actions are linked to other actions of the DPA that are beneficial to the commercial species issue: 1) two MRE actions, allowing for a more general consideration than this single issue (better consideration upstream of the risks of negative impacts) and 2) a fishing action directly linked with an environmental action on descriptor D03 participating in better management of local stocks. Other synergies between socio-economic and environmental actions with a positive impact are also noteworthy: in particular, links between actions on fishing activity (professional and recreational) and certain environmental actions on descriptor D03 (recreational fishing regulations, identification of priority local stocks).

This impact profile appears to have potential positive effects, but of low intensity. In view of the level of risk assessed in part 4, this low level of impact may be potentially insufficient, particularly as the commercial species issue is very far from the GES on the whole of the coastline.

### 5.2.3.6. FOOD WEBS

The SBSDDPA is likely to generate 52 impacts on food webs, the vast majority being positive (48/52 or 92%). Four other uncertain impacts are identified, none negative. 45% of the actions in the DPA will potentially impact on this issue.

These impacts are almost as much direct (27/52) as indirect (25/52). The actions and sub-actions generating impacts on food webs have a fairly balanced typological profile with, however, a predominance of knowledge improvement sub-actions (more than one third). Apart from knowledge, the profile is fairly balanced between regulatory sub-actions (17%), operational sub-actions through concrete actions (16%), planning (9%) and awareness raising/communication/training (15%). The positive impacts have mixed characteristics, favourable on sustainability and unfavourable on timing. It should be noted that only one action specifically targets the food web issue through better management of the harvesting of forage species.

As for the uncertain impacts, they arise from actions on MRE and fishing/aquaculture activities. These actions are linked to other potentially beneficial socio-economic actions to take better account of the food web issue, without however targeting it directly.

This impact profile appears to show potential positive effects, but with rather mixed characteristics and low intensity on the issue. The action plan is therefore

likely to be of insufficient intensity to have significant effects on the issue. It is not possible to comment on a return to GES as it is not defined or evaluated.

#### 5.2.3.7. NON-NATIVE SPECIES

The SBSDDPA is likely to generate 15 impacts relating to this pressure on the marine environment, which is a small proportion of the total impacts (around 2%) corresponding to a small proportion of the DPA actions (13%). The majority of them are positive (9/15). Nevertheless, a significant proportion (40%) of the impacts are uncertain (4/15) and negative (2/15).

These impacts are more strongly direct (10/15 or 67%) than indirect (5/15). The actions and sub-actions generating impacts on NIS have a typological profile with a dominance of operational actions (26%), knowledge (19%), planning (15%), and awareness (13%). The regulatory sub-actions are under-represented compared to the rest of the programme. The positive impacts have fairly favourable characteristics (especially in the short term). Negative impacts have unfavourable characteristics (short term, irreversibility). It should be noted that two actions specifically target the management of non-native species: one specifically on the Ponant islands (TE-05E-II-3-AF4), the other on the entire coastline (D02-AN1).

The two negative impacts come from actions relating to ports and aquaculture. In contrast to ports, the aquaculture planning action is explicitly linked to environmental action to improve the management of non-native marine species. In addition, for the four uncertain impacts arising from actions on MRE and fisheries/aquaculture, potentially favourable synergies are identified with other actions (socio-economic and environmental) of the SBSDDPA that could lead to an avoidance or reduction of this pressure: for example, the coordination of advice and scientific expertise on offshore wind power is generally involved in better monitoring and consideration of the ARC approach for offshore wind power projects; the same applies to the carrying out of studies to improve knowledge of the impacts of offshore activities and the strengthening of instruction procedures for operating permits for aquaculture.

Rather, this impact profile appears to show rather mixed (high uncertainty) and low intensity (low impact) potential effects on this issue over the duration of the DPA. In view of the level of issues assessed in Part 4, this low intensity of impact may be insufficient in the territorial sea areas where the presence of activities, particularly port activities, is important. However, it is not possible to comment on a return to the GES as this is not yet defined.

#### 5.2.3.8. EUTROPHICATION

The SBSDDPA is likely to generate nine impacts on this pressure, eight of which are positive and one uncertain. This represents a very small proportion of impacts in relation to other issues, and in relation to the DPA, only 8% of the actions will potentially impact on eutrophication.

These impacts are slightly more direct (7/9) than indirect (2/9). One of the nine actions is also entirely devoted to reducing eutrophication. The actions and sub-actions generating impacts on this issue have a shared typological profile with more operational actions (35%), but a fairly balanced distribution between sub-actions dealing with knowledge (15%), awareness (12%), training (12%), regulation (12%) or planning (8%). The positive impacts have fairly favourable characteristics, particularly with regard to sustainability. Socio-economic actions that may have a positive impact on eutrophication are mainly those related to health risks. It should also be noted that in NAMO, an environmental action is specifically dedicated to the reduction of eutrophication (D05-OE01-AF1).

The only uncertain impact is potentially generated by an aquaculture development action: indeed, if some forms of aquaculture activity are potentially

in contrast, the most important aquaculture activities on the coast (especially shellfish farming) require good water quality, i.e. low eutrophication.

In parallel to the DPA, the SDAGE also deals more strongly with the issue of reducing eutrophication on the NAMO coast: this explains the small number of actions carried out by the DPA. The SBSD action plan is thus likely to have a rather positive impact on the eutrophication issue, but the bulk of the actions on this descriptor is however carried out by another programme. It therefore seems difficult to comment on the potential influence of the DPA on a return to the GES for the five relevant vocational zones (see section 4).

### 5.2.3.9. INTEGRITY OF THE SEABED

The DFS PDA is likely to generate 30 impacts concerning this pressure on the marine environment. The majority of them are positive (23/30 or 77%). 4 and 3 actions respectively are identified as having uncertain and negative impacts. 26% of the actions in the DPA will potentially impact on this issue.

These impacts are almost more direct (19/30 or 63%) than indirect (11/30). The actions and sub-actions generating impacts on the integrity of the seabed have a typological profile with a strong predominance of knowledge (36%) and a lesser mobilisation of awareness raising/communication/training actions. Operational (16% of concrete actions), regulatory (12%) and planning (15%) sub-actions are also fairly well represented. The positive impacts have mixed but favourable characteristics on sustainability. On the other hand, the negative impacts, although fewer in number, have unfavourable characteristics (irreversible and certain).

The three negative impacts arise from actions relating to MRE and aquaculture, including their planning. Some of the actions of the SBSD help to minimise the effects of the latter on the integrity of the seabed:

- The two MRE actions are linked with actions favourable to an overall reduction in their impacts, notably via the coordination of advice and scientific expertise on offshore wind power, which contributes to better monitoring and consideration of the ARC approach.
- The action on the development of aquaculture activity is notably linked to an action to improve knowledge of the impacts of activities at sea, or by a socio-economic action relating to the instruction of files for the installation of marine cultures.

The four uncertain impacts arising from fisheries/aquaculture, ports and island territories actions (MRE tidal/ENR) find partly favourable synergies with regard to certain socio-economic actions of the DSF. This is essentially the case for fisheries/aquaculture actions, which are linked to environmental awareness-raising actions, improving knowledge of impacts, and strengthening regulatory procedures.

This pattern of impacts seems to induce rather positive potential effects but of varying intensity. Some of the positive impacts on this issue concern activities defined as contributing to the pressures generated on this issue (fishing, material extraction, aquaculture, MRE, natural risks). These are complemented by actions to protect certain benthic habitats at stake, as well as an action relating to the objective of "zero net artificialisation". However, despite potential synergy between PDA actions, the negative impacts could be of high intensity on the integrity of the seabed. In view of the level of challenge assessed in Part 4, where it is noted that all the vocation zones in the territorial sea have a high or intermediate level of challenge, the DPA may therefore be insufficient to reduce the level of challenge. However, it is not possible to comment on a return to the GES as this is not yet defined.

### 5.2.3.10. MODIFICATION OF HYDROGRAPHIC CONDITIONS

The FSD PDA is likely to generate 20 impacts on this pressure on the marine environment, the vast majority of which are positive (15/20 or 75%). 4 and 1 actions respectively are identified as having uncertain and negative impacts. Only 17% of the PDA actions will potentially impact on this issue.

These impacts are more strongly direct (12/20 or 60%) than indirect (8/20). The actions and sub-actions generating impacts on the integrity of the seabed have a typological profile with a predominance of knowledge (32%) and a lesser mobilisation of awareness raising/communication/training actions. Operational (14% of concrete actions), regulatory (13%) and planning (13%) sub-actions are also fairly well represented. The positive impacts have rather mixed characteristics except for sustainability. On the other hand, the negative impact has very unfavourable characteristics (certain, short-term, irreversible). This is an action to support aquaculture development, the intensity of whose impact will depend on the actual implementation of the new aquaculture areas and the nature of the projects in the action.

As for the uncertain impacts, they arise from actions on MRE and fishing/aquaculture activities. These actions are articulated with other socio-economic actions potentially beneficial for a better consideration of the hydrographic conditions issue, without however targeting it directly.

This impact profile is rather mixed, even if it tends towards the positive, with the share of uncertain and negative impacts remaining relatively high (25%). Indeed, the positive impacts may be potentially insufficient in view of the predominantly intermediate or high level of challenge and pressure across the whole frontage (see section 4). It is not possible to comment on a return to the GES as this is not yet defined.

### 5.2.3.11. CHEMICAL AND BIOLOGICAL CONTAMINATION

The FSD PDA is likely to generate 41 impacts on this pressure on the marine environment, the vast majority of which are positive (36/41 or 88%). 2 and 3 actions respectively are identified as having uncertain and negative impacts. 36% of the actions in the DPA will potentially impact on this issue.

These impacts are much more strongly direct (29/41 or 73%) than indirect (11/41). The actions and sub-actions generating the impacts on contaminants have a fairly balanced typological profile across all categories. It should be noted that the structuring category, even if it is lower for this issue (around 5%), remains quite important compared to the other issues, which can be explained by the fact that the NAMO DPA is taking on the subject of the circular economy, which requires the construction of a solid network. The positive impacts have rather favourable characteristics, especially in the short term and on a permanent basis. The negative impacts have rather unfavourable characteristics (certain, short-term and irreversible).

The three negative impacts arise from actions relating to MRE and aquaculture, including their planning. However, there are some actions in the SBSD that minimise the effects of the latter on benthic habitats:

- The two MRE actions are linked with actions favourable to an overall reduction in their impacts, notably via the coordination of advice and scientific expertise on offshore wind power, which contributes to better monitoring and consideration of the ARC approach.
- The action on the development of aquaculture activity is notably linked to an action to improve knowledge of the impacts of activities at sea, or by a socio-economic action relating to the instruction of files for the installation of marine cultures.

The two uncertain impacts come from an action on ports and one on fisheries/aquaculture. The fisheries/aquaculture action finds a potentially favourable synergy by being articulated with the action of reinforcing the instruction procedures for the authorisation of aquaculture exploitation and an improvement of the knowledge of the impacts of the activity. The action on ports is directly linked to environmental actions on contaminants, in particular on port services for the reception of scrubber water and on the reduction of contaminants linked to maritime transport. Some other synergies between actions are noteworthy, in particular with regard to the articulation of docking, eco-design and deconstruction.

This impact profile appears to have potentially positive effects due to the relatively good coverage and nature of the impacts. In some areas, they could be partly offset by actions with negative impacts (MRE and aquaculture areas), bearing in mind that the most affected vocational areas have an intermediate GES gap (see part 4). It should also be noted that chemical contamination is better covered than biological contamination in terms of the content of actions. It is particularly difficult to comment on a return to GES on this issue.

#### 5.2.3.12. WASTE

The FSD PDA is likely to generate 34 impacts on this pressure on the marine environment, the vast majority of which are positive (31/34 or 91%). One impact is identified as uncertain, two as negative. 30% of the actions in the DPA will potentially impact on this issue.

These impacts are much more strongly direct (25/34 or 74%) than indirect (9/34). The actions and sub-actions generating waste impacts have a fairly balanced typological profile across all typological categories except for structuring which is lower (around 5%). It should also be noted that financial incentives are used more in proportion (around 11%) compared to the other issues. The positive impacts have rather mixed characteristics, short-term but rather uncertain. Negative impacts have unfavourable characteristics.

The two negative impacts come from actions relating to ports and aquaculture. The impacts from the action on ports will depend on the potential increase in maritime traffic on the coastline. The action on aquaculture planning is directly linked to environmental issues relating to waste, including one aimed at reducing, collecting and recovering waste from maritime activities, including aquaculture. The uncertain impact stems from an action on fisheries/aquaculture, for which synergies with other socio-economic actions are potentially favourable, particularly in terms of raising awareness among seafarers and strengthening the procedures for authorising aquaculture operations. Other actions have a synergistic effect on the positive impacts, in particular concerning the reduction/collection/recovery of waste and alternative solutions to biomedica filtering in wastewater treatment plants.

This impact profile appears to have some potential positive effects, but with rather mixed characteristics. Many actions have a positive impact on this issue, but given their characteristics and the level of waste at stake, their effect may not be sufficient to reduce the GES gap. Indeed, none of the vocational areas reach the GES (intermediate or high gap). It is therefore difficult to say whether the GES will return to this issue.

#### 5.2.3.13. NOISE

The DFS DPA is likely to generate 12 impacts relating to this pressure on the marine environment, which represents a very small proportion of impacts in relation to other issues. The majority of these are positive (8/12) and 1 and 3 actions respectively are identified as having uncertain and negative impacts. Only 10% of the actions in the DPA will potentially impact on noise.



These impacts are more strongly direct (8/12) than indirect (4/12). The actions and sub-actions generating waste impacts have a very balanced typological profile across all typological categories: 24% of sub-actions are related to improving knowledge, 22% to operational actions, 19% to awareness raising/communication, 14% regulatory, 14% planning, 8% structuring of actors. The positive impacts have rather favourable characteristics with the majority of them occurring in the short term with a rather good certainty. The negative impacts, on the other hand, have unfavourable characteristics (certain, short-term and two-thirds irreversible).

The three negative impacts stem from actions relating to MREs and ports. However, there are some actions in the SBSD that minimise the effects of the latter on benthic habitats:

- The two MRE actions are linked with actions favourable to an overall reduction in their impacts, notably via the coordination of advice and scientific expertise on offshore wind power, which contributes to better monitoring and consideration of the ARC approach.
- The action on ports, which could lead to an increase in maritime traffic due to stronger inter-port coordination and a stated objective of traffic capture, is linked to several environmental actions but none directly related to the noise issue.

This impact profile seems to show rather mixed potential effects: the share of positive impacts is relatively low compared to uncertain and negative impacts, and the DPA does not propose any actions dedicated to this issue. Negative impacts are concentrated on MRE areas, shipping lanes and ports, with potentially higher impacts on newly developed MRE areas. With regard to the level of challenge assessed in part 4, this low intensity of positive impacts may be potentially insufficient to promote the achievement of the GES: in fact, a significant number of vocational zones present a high or intermediate level of pressure, linked to the presence of economic activities and maritime traffic, which should increase with the arrival of MREs. It is not possible to comment on the progress towards achieving GES.

#### **5.2.3.14. ONSHORE AND OFFSHORE LANDSCAPES**

The SBSDDPA is likely to generate 28 impacts on this pressure on the marine environment, the vast majority of which are positive (24/28 or 86%). Four other uncertain impacts are identified, none negative. 24% of the actions in the DPA will potentially impact on landscapes and seascapes.

These impacts are more strongly direct (17/28) than indirect (11/26). The actions and sub-actions generating impacts on waste have a rather dominant typological profile on improving knowledge (36%). Sub-actions relating to concrete actions (13%) and planning (12%) are also fairly well represented compared to the other typological categories. The positive impacts have mixed characteristics except for sustainability.

The four uncertain impacts come from actions relating to MRE (wind development planning and energy transition on the Ponant islands) and aquaculture (planning of aquaculture activity). A certain number of actions of the SBSD find a positive synergy with these impacts, aiming at a respectful development of these activities, on the one hand, and a protection and restoration of the natural environments on the other hand, playing a priori favourably on the landscape aspects.

This impact profile appears to have fairly positive potential effects, but with mixed characteristics on landscapes. Potentially uncertain impacts are concentrated in certain areas (MRE, aquaculture, islands).



### 5.2.3.15. AIR QUALITY

The SBSDDPA is likely to generate 16 impacts relating to this pressure on the marine environment, the vast majority of which are positive (15/16) with only one negative impact. 14% of the actions in the DPA will potentially impact on air quality.

These impacts are much more strongly direct (12/16) than indirect (4/16). The actions and sub-actions generating air quality impacts have a rather differentiated typological profile with four dominant types of sub-actions: improving knowledge (22%), concrete actions (16%), financial incentives (16%) and planning (12%). Conversely, regulatory sub-actions are under-represented. The positive impacts have mixed characteristics, although two-thirds are permanent. The negative impact has mixed characteristics (uncertain, short-term and reversible). In this case, it comes from an action to support the development of ports, the intensity of the impact of which will depend on the potential increase in maritime traffic on the coast.

The positive impacts of an operational nature are more strongly directed towards the reduction of greenhouse gas emissions (mainly MRE actions, and some actions on ships) but part of them also concerns the reduction of atmospheric pollution (actions on ports and ships, actions on eutrophication).

This impact profile appears to show potential positive effects on air quality, but in the long term and with a low number of impacts. Furthermore, a difference in impact can be expected between GHG emissions (strong MRE commitment) and air pollution where actions and effects are more uncertain. In terms of the level of issue assessed in Part 4, these impacts could be beneficial particularly on the high level vocation areas, but potentially insufficient to reduce it to a low level of issue at the DPA scale.

### 5.2.3.16. NATURAL RISKS AND RISKS FOR HUMANS

The SBSDDPA is likely to generate 11 positive impacts on natural and human risks, a small proportion compared to other issues. They are generated by about 10% of the DPA actions.

These impacts are almost as much direct (6/11) as indirect (5/11). The actions and sub-actions generating impacts on risks have a very different typological profile from the other issues, with a very strong predominance of sub-actions for improving knowledge (almost half), no sub-actions for either regulation or financial incentives, and very little for supporting stakeholders. The characteristics of these positive impacts are rather mixed, as they are medium to long term but reversible.

A few rare favourable synergies between actions are noteworthy, in particular one concerning the link between risk reduction and eutrophication.

This impact profile appears to be positive on the risks, but is very limited in terms of the number, nature of the impacts (more focused on improving and sharing knowledge) and their characteristics. However, this means of action is necessary upstream of more operational actions in order to define the best solutions for managing risks that are still poorly understood (erosion of the coastline, risks linked to eutrophication).

### 5.2.3.17. KNOWLEDGE

The SBSDDPA is likely to generate 61 positive impacts on knowledge, with these impacts generated by approximately half of the DPA actions (53%).

These impacts are almost exclusively direct (60/61). The actions and sub-actions generating the impacts on risks have a typological profile naturally oriented towards knowledge sub-actions (about half) with a fairly balanced distribution between the rest of the typological categories, with structuring of actors remaining the least represented category. This means in particular that more operational actions such as

are involved in improving knowledge or include a specific module on this subject in their sub-actions. The characteristics of these positive impacts are favourable: some are short-term and irreversible.

Favourable synergies between actions exist, in particular between research actions where the improvement of knowledge is more primarily targeted.

This impact profile seems to show very positive potential effects on the improvement of knowledge, especially as these effects are numerous, supported by many of the DPA's actions, and have favourable characteristics. This improvement in knowledge concerns both the various components of the biocenosis and the activities themselves, knowledge of which is essential for a better understanding of and action on the pressures on the marine environment.

### 5.2.3.18. CONCLUSION

The issues in the first group, referred to in the previous section as "issues related to the components of the marine environment", have a high number of impacts, the majority of which are positive, but with a high proportion of medium to long-term occurrence and a high level of uncertainty. Although the strong dominance of positive impacts, as well as the localised nature of the negative impacts (MRE implementation zones, possible aquaculture development zones), make it possible to conclude that the action plan has an overall positive impact on them, it is impossible to rule on its extent and therefore on the capacity of the action plan to restore good environmental status. Moreover, these issues are not in the same situation with regard to the GES:

- three of them show a significant overall gap with the GES which seems difficult to close at the scale of this first action plan (benthic habitats, fish and cephalopods, commercial species);
- the situation regarding seabirds is more favourable (gap with the intermediate GES), which the action plan should at least consolidate, even if the impact of future wind farms on migratory birds will require the utmost vigilance;
- the situation regarding marine mammals and turtles is also more favourable, although it varies greatly from one area to another. It is therefore more difficult to comment on the influence of the action plan on the achievement of the GES. Turtles are also not very present on the NAMO coast;
- for the last issue in this first group, food webs, the GES is not defined and the deviation from it not assessed, and it is therefore even more difficult to comment on the overall impact of the action plan.

On the issues in the second group, known as "issues related to pressures on the marine environment", the impact of the SBSD should be less significant than for those in the first group, given the smaller number of actions having an impact on these issues, even if this smaller number is partly compensated by a higher proportion of short-term impacts. Furthermore, the overall impact of the action plan is likely to be more or less strong depending on the different issues making up this second group:

- rather mixed on NIS, noise, hydrographic conditions and seabed integrity, which combine several actions with uncertain and negative impacts, with fewer positive impacts on these issues than on the others. The positive influence of the plan therefore seems rather modest on these issues, which could be problematic in view of their level of challenge, which is considered to be rather intermediate for offshore areas and high for areas in the territorial sea (cf. part 4);
- rather modest for eutrophication, which has the fewest number of impacts, although none are negative. However, the NAMO seaboard is in a special situation because it is the only seaboard to have included a specific action dedicated to the issue of eutrophication in its programme: this action could thus have a positive impact on the reduction of

nutrient inputs and their transfer to the marine environment, particularly in areas where the situation is unfavourable in this respect;

- more important for contaminants and waste, with a fairly large number of positive impacts despite the presence of some negative or uncertain impacts. This influence of the action plan, with a positive trend itself reinforced by synergies between actions, is all the more relevant as these two issues have fairly high levels of impact. Nevertheless, it is difficult to make a statement on the return to good status as it is not fully assessed.

The issues in the third group, "Other societal issues", will all be positively affected by the action plan insofar as the plan has a very high proportion of positive impacts on them, and only one action could have a negative impact on the air quality issue (in connection with a potential increase in maritime traffic). However, the overall effect of the action plan differs quite widely for each of these four so-called 'societal' issues:

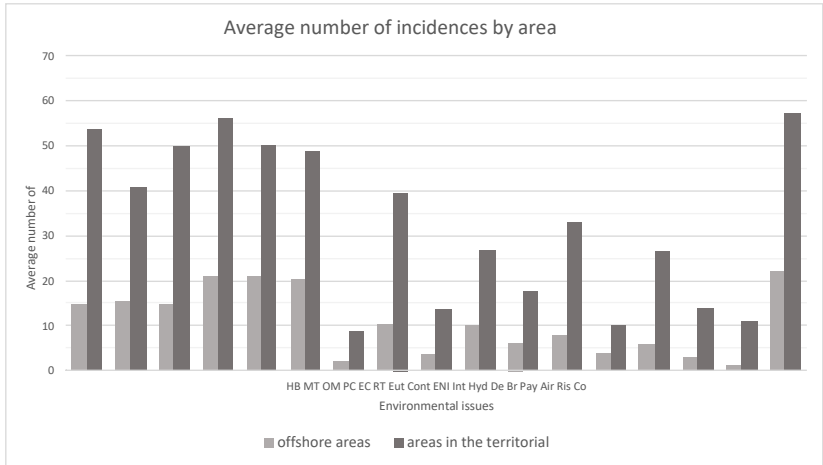
- the action plan has a fair number of landscape impacts, the vast majority of which are positive. The overall effect will be all the greater if the actions with these impacts are targeted at the areas where the landscape issues are the strongest. In addition, attention should be paid to the uncertain impact on the landscape of large-scale wind farms and the development of aquaculture farms;

- the impacts on air quality and risks are much less. With regard to the fight against atmospheric pollution, it is not certain that the plan is equal to the challenges, which are quite high overall. With regard to the reduction of GHG emissions, it is difficult to give an opinion given the absence of a diagnosis of the initial situation. A potential increase in maritime traffic could also have a negative impact on these two aspects of the air quality issue. Finally, with regard to risks, the action plan could have a limited influence, although entirely positive, due to the high proportion of actions with a value of improving knowledge, the more concrete effects of which on the issue (effective reduction of risks) should be felt more in the next programme.

- Finally, the impacts on knowledge are numerous, all positive and mostly short-term. The action plan should therefore significantly improve the level of knowledge about the coastline, both in terms of its environmental components and its high-pressure economic activities, which is highly relevant given the existing uncertainties.

#### 5.2.4. Spatialised impacts at the level of the vocation zones

With regard to the use areas affected by the stated impacts, two profiles of use areas can be distinguished in the first place: use areas that are located offshore and use areas that are located in the territorial sea. Indeed, offshore areas have at first sight a much lower coverage of issues than areas in the territorial sea. The graph below, showing the number of impacts per issue according to these two types of areas, serves as an illustration:

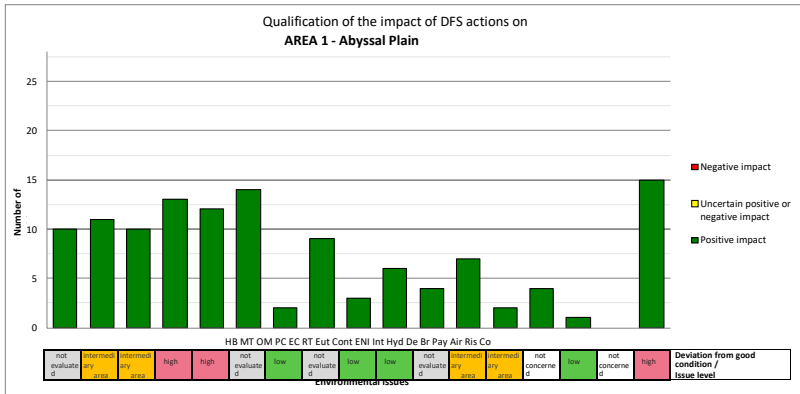


Within these two categories of areas, there are also some notable differences.

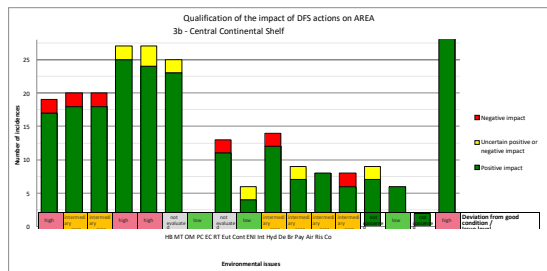
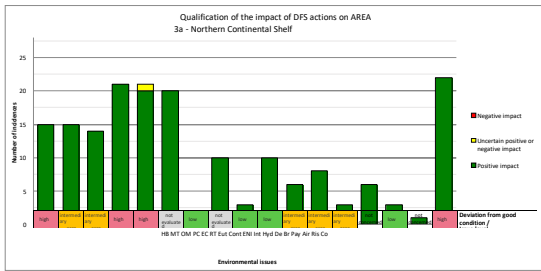
**Concerning the offshore zones, i.e. the vocation zones 1, 2, 3a, 3b, 4:**

Overall, the impact profile of the offshore areas is relatively different depending on the area. Overall, it can be noted that the issues with the greatest impact on these five offshore areas are the biocenosis issues of PC, EC, RT (linked in particular to fishing activity) and the knowledge issue (Co), whose deviation from the GES and level of impact are otherwise high.

Zone 1, "Abyssal Plain", is the vocation zone least covered by actions and is therefore also the least impacted by the DSF. It is also the only area where the impacts are only positive on all the different issues.



Although ZV 3a and 3b are grouped together in the same "Continental Shelf" zone, they do not have the same impact profile, mainly due to the choice of 3b for offshore wind development. Zone 3b thus has a greater number of negative and uncertain impacts than zone 3a. Zone 3b also has the highest number of impacts of any kind (positive, negative, uncertain) and is thus clearly distinguished from the rest of the offshore zones.



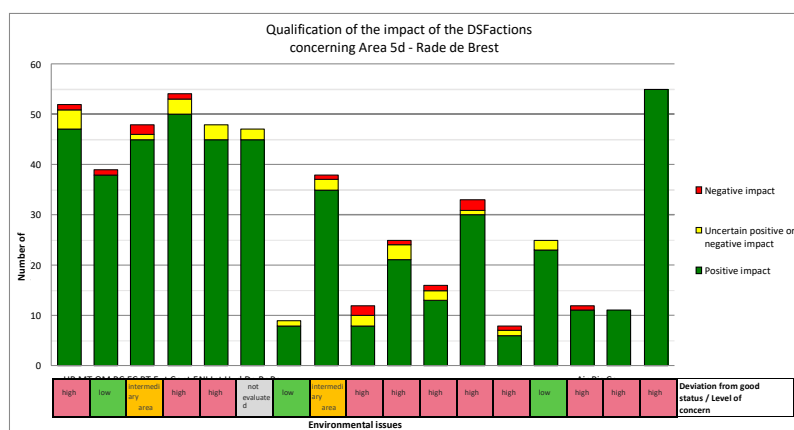
With regard to zone 3b in particular, the potential negative impacts concern the issues of HB, MT, OM, Cont, Int, and Br in relation to the development of MRE. There are also several uncertain impacts on the issues of PC, EC, RT, ENI, Hyd and Pay in relation to MRE actions and certain actions on fishing activity.

For zones 2 "Continental Slope", 3a "Northern Continental Shelf" and 4 "Western Channel", it is possible to make a common observation on the impacts: if zone 4 is slightly more impacted than the others, the three zones considered have a much higher number of impacts for the PC, EC, RT issues, with however the presence of a potential impact, each one uncertain, in connection with certain fishing actions. All other issues have only positive impacts. (See illustration of the 3a use zone above and details of the other zones in [Annex 4](#) of the environmental report)

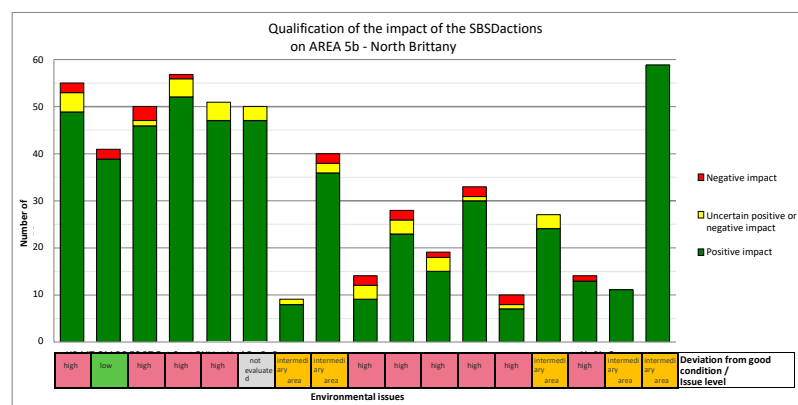
#### Concerning the areas in the territorial sea, i.e., vocation areas 5a to 5h:

Zone 5, "Territorial Sea", is segmented into eight sub-zones with approximately the same number of incidences (between 526 and 580) but within which three profiles can be identified:

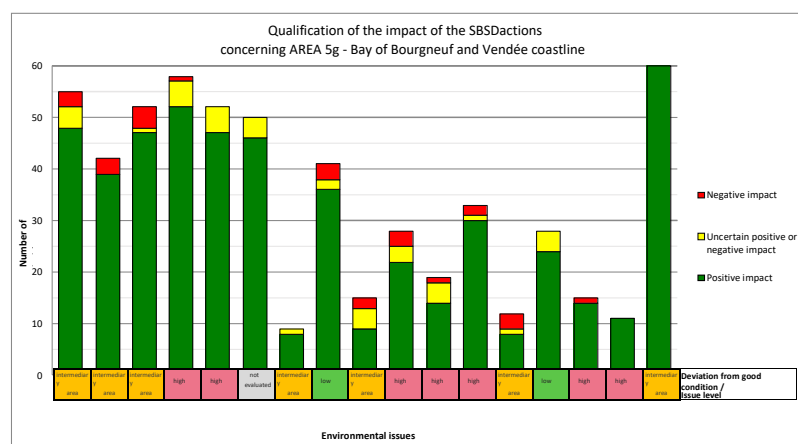
- Zones 5a "Norman Breton Gulf and Mont St Michel Bay", 5d "Rade de Brest" and 5f "Loire Estuary" have the lowest number of total impacts (between 526 and 536). The SBSDe therefore has less impact on these areas. However, these are the areas with the lowest share of negative impacts (3%) and the highest share of positive impacts (92%). The levels of pressure on the environmental descriptors (see maps showing deviation from the GES/level of challenge) are particularly high in these areas (in particular 5d and 5f, less so in 5a): the SBSDe therefore seems to have a positive impact on a good number of descriptors, even if there are still uncertainties (see uncertain impact on Int, for example). (Illustration below on one area, see details for other areas in [Annex 4](#) of the environmental report)



- Areas 5b "North Brittany" and 5c "Iroise Marine Natural Park" have a higher number of impacts (between 560 and 568) but a higher proportion of negative impacts (4%). Zone 5b is also an area where the pressure levels on the environmental descriptors (see GES deviation / issue level) are particularly high. Again, the SBSDe seems to be intervening favourably to reduce these pressure levels even if there are still uncertainties about some of them. (Illustration below on area 5b, see details for area 5c in [Annex 4](#) of the environmental report)



- Zones 5e "Southern Brittany", 5g "Bay of Bourgneuf and Vendée coastline" and 5h "NIP of the Gironde Estuary and the Pertuis Sea" are the most impacted by the SBSDactions: number of impacts around 580 and a lower share of positive impacts (89%), negative impacts (4%) and uncertain impacts (7%). The pressures (cf. GES deviation / stake level) are higher in zone 5e than in zones 5g and 5h. In these areas, actions that have a positive impact on the issues with the highest GES deviation should be strengthened (e.g. uncertain impact on ENI and Hyd). (Illustration below on zone 5g, see other zones in [Annex 4](#) of the environmental report)



## 5.3. Analysis of impacts on Natura 2000 areas<sup>30</sup>

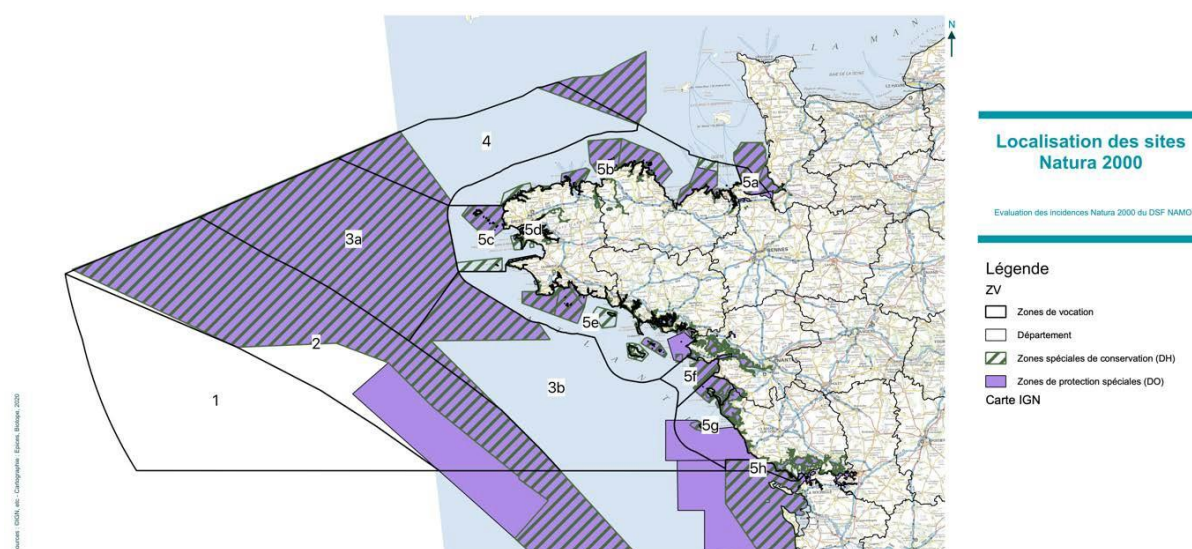
### 5.3.1. Presentation of Natura 2000 sites

#### Location

Of the 13 zones delimited by the map of the coastline's functions, all of them include areas classified as Natura 2000.

<sup>30</sup> For more details on this analysis, please refer to (1) the table of the main issues in the Natura 2000 area for each coastline ([Annex 5](#) to the environmental report, Excel format, issues tabs) and (2) the impact spatialisation sheets in [Annex 5](#) (Excel format, impacts tabs) of this report.





### The Special Protection Areas (SPAs) along the coastline:

36 SPAs are located on the NAMO coast. See [Annex 5](#) of the environmental report.

- ❖ Birds of Community Interest (BCI) at the origin of the designation of the sites Natura 2000 sites on the coast:

Of the bird species of community interest for which the NAMO Special Protection Areas have been designated, only seabird species are included in the impact assessment of the DSF. They were divided into two groups:

- **Pelagic seabird species:** Northern Fulmar, Greater Shearwater, Balearic Shearwater, Northern Gannet, Atlantic Penguin, Atlantic Puffin, Great Skua, Common Murre, Storm-petrel etc. These species spend most of their lives at sea: they only come ashore on the French coast to nest or during particular weather conditions at sea (gale force winds etc.). They feed at sea, immersing themselves at varying depths depending on the species.
- **Coastal seabird species:** these include surface water birds (terns, terns, gulls and gulls), waders (Great Plover, Redshank, Black-tailed Godwit) and large waders (Spoonbills), sea ducks (Black Scoter) and other species of 'coastal divers' (Divers, Crested Cormorant). These species feed either on the foreshore and in coastal wetlands (lagoons, backwaters, etc.) or on the surface of the sea.

[Annex 5](#) to the Environmental Report lists the CI bird species and their conservation status on the sites, for which the frontage has a particular responsibility. The species presented are those whose numbers correspond to more than 10% of the total number of species of the national workforce (source: CEREMA, 2014) <sup>31</sup>

The coastal waters of NAMO are an important area for the concentration of marine birdlife, particularly in summer (especially for the globally threatened Balearic Shearwater) and also during the wintering period. The Gulf of Morbihan (zone 5e) and the Loire estuary (zone 5f) are internationally important wintering sites for coastal birds. The numerous islands and islets distributed along the coastal strip of the

<sup>31</sup> Source: EES PAMM Bay of Biscay - CEREMA 2014 - Pages 248-249 (except for offshore reefs as the areas concerned did not exist in 2014).

NAMO are also important areas for the nesting of marine birds. In the back-coastal environment, the Breton marsh (zone 5g) is a major site for breeding shorebirds. The oceanic slope (zone 2) and the Ouessant thermal front (5c) are major functional areas on a European scale for pelagic birds.

### The Special Areas of Conservation (SACs) along the coastline

50 SACs are located on the NAMO coast. See [Annex 5](#) of the environmental report.

#### The CI habitats that led to the designation of the SACs:

The benthic habitats of community interest that are the reason for the designation of the special areas of conservation of the coastline selected for the impact analysis are the marine or wetland habitats located on the coastline. For the purpose of this analysis, they were divided into three groups:

- **Marine benthic habitats** located in the subtidal zone, whether sedimentary or rocky in nature: these are reef habitats, large cirques and shallow bays. Note the particular issue of the hydraulic dunes of shellfish sands, particularly in the Celtic Sea, and the bathyal muds colonised by gorgonians and pennatulas off the oceanic slope. There is also the issue of preserving subtidal hermella reefs, which are particularly represented in Noirmoutier and the Bay of Bourgneuf.
- **Habitats located on the coastal fringe** (intertidal zone, foreshore): this group includes muddy or sandy flats that are exposed at low tide, and the annual vegetation of the mud flats. Note the particular presence of eelgrass and dwarf eelgrass (particularly in the Gulf of Morbihan), intertidal hermella reefs (particularly in Noirmoutier and Bay of Bourgneuf), maerl beds, flat oysters (present in Bay of Quiberon Bay and rade de Brest, the latter being one of the last natural deposits). Moreover, rocky habitats cover large areas in the Celtic Sea, with abundant colonisation by wrack and kelp, particularly in the Iroise Sea.
- **Habitats located in transitional environments** mixing freshwater and water: these are salt meadows, lagoons and estuaries.
- ❖ The CI fauna species for which the SACs were designated:

The species of community interest that led to the designation of the special conservation areas of the coastline retained for the impact analysis are marine species, grouped into two groups:

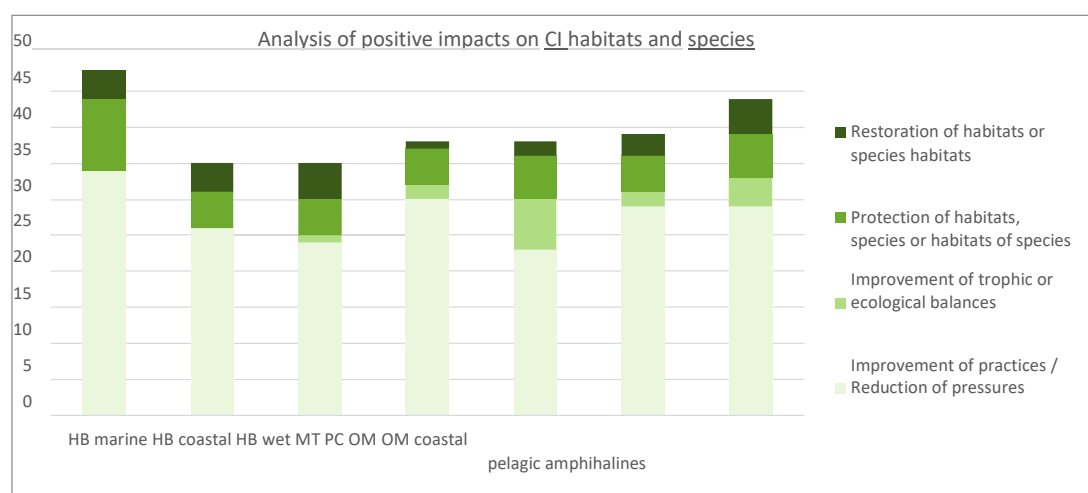
- **Marine mammals:** the harbour porpoise and the bottlenose dolphin are present on the coast. With the exception of vocation zone 5d (Rade de Brest), all zones are concerned by the presence of these species. However, the following can be noted: the archipelagos and areas with strong currents and tidal ranges, such as the Normandy-Breton Gulf and the Iroise Sea, are particularly suitable functional areas for sedentary groups of bottlenose dolphins. The thermal front (Ouessant) is also an important concentration area for harbour porpoises, leatherback turtles and other marine mammals such as the common dolphin. In addition, the ocean slope area is a major functional area on a European scale for marine megafauna.
- **Amphihaline fish:** Large shad, Smooth shad, Sea lamprey, River lamprey, Atlantic salmon. The Loire and the Vilaine are the two major rivers for amphihalines. These species are also present in the smaller rivers of Brittany. Thus, of the 20 Natura 2000 sites concerned (spread over 7 vocation zones), the Loire estuary (zone 5f) has the best conservation status for the five species selected.

Annex 5 to the environmental report presents the list of CI habitats and fauna species and their conservation status on Natura 2000 sites, for which the coastline has a particular responsibility. These species are those whose numbers exceed 50% of the French workforce (source: CEREMA, 2014) <sup>32</sup>

### 5.3.2. Analyses of the potential impact of the SBSDD on the Natura 2000 sites of the coast

#### Choice of protection of Natura 2000 issues in the DSF

The majority of the impacts of the SBSDD actions are positive: if we look only at the impacts generated on CI habitats and species, the DPA could generate 277 positive impacts via 62 actions. The following graph shows the distribution of these impacts by CI issue groups.



As illustrated in the graph above, the positive impacts are aimed in particular at improving practices or reducing pressures, and concern all stakeholder groups. All socio-economic activities are concerned by this objective of improving practices: aquaculture, agriculture, industrial risks, professional and leisure fisheries, electricity production, tourism, yachting and nautical leisure, port activities and transport, sediment extraction; activities which are likely to be located within Natura 2000 sites. The actions of the SBSDD should thus enable better consideration of CI issues by limiting the degradation of marine, coastal or wetland benthic habitats, reducing pollution and waste, reducing the accidental capture of marine mammals or seabirds, and limiting the risks of collisions and disturbance of marine megafauna during work at sea or induced by the various activities.

In addition, several actions are aimed more specifically at environmental protection or restoration, some of which specifically target CI habitats or species. These actions are listed below:

<sup>32</sup> Source: EES PAMM Bay of Biscay - CEREMA 2014 - Pages 248-249 (except for offshore reefs as the areas concerned did not exist in 2014).

| Issue group                  | Specific actions to preserve CI issues   |
|------------------------------|--|
| Foreshore habitats           | Identifying, maintaining and restoring mid-coastal and functional seabird habitats that are degraded and/or exposed to coastal habitat compression. (D01-OM-OE05-AN1).   |
| Deep habitats                | Contribute to strengthening the consideration of the sensitivity of deep-sea habitats in the Atlantic at Community level (D01-HB-OE10-AN2)   |
| Habitats in transition zones | Promoting land-sea connectivity in estuaries and lagoons in addition to what is being done on ecological continuity under the SDAGE and PLAGEPOMI, by intervening on obstacles impacting currentology and sedimentology. (D07-OE03-AN1),   |
| Amphihaline fish             | Develop and implement a national amphihaline migratory plan for optimised management of migratory fish across the land-sea continuum (D01-PC-OE3-AN1). Note that this action is still subject to arbitration<br>Promote land-sea connectivity in estuaries and lagoons in addition to what is being done on ecological continuity under the SDAGE and PLAGEPOMI, by intervening on obstacles impacting currentology and sedimentology (D07-OE03-AN1).<br>Strengthen the protection of Important Fisheries Functional Areas (IFAs), in particular by setting up pilot Fisheries Conservation Areas (FCAs) on each coastline (D01-PC-OE05-AN1) |
| Seabirds                     | Develop and implement appropriate management and protection tools for high-stake seabird species in the marine sub-region (D01-OM-OE03-AN1),<br>Submit and implement a Life "Mobile Marine Species" project (AT06)<br>Monitor and control introduced and domesticated species on seabird breeding sites (D01-OM- OE04-AN1)   |
| Coastal birds                | Identifying, maintaining and restoring mid-coastal and functional seabird habitats that are degraded and/or exposed to coastal habitat compression. (D01-OM-OE05-AN1).<br>Submit and implement a Life "Mobile Marine Species" project (AT06)<br>Monitor and control introduced and domesticated species on seabird breeding sites (D01-OM- OE04-AN1)   |
| Cetaceans                    | Submit and implement a Life "Mobile Marine Species" project (AT06)   |

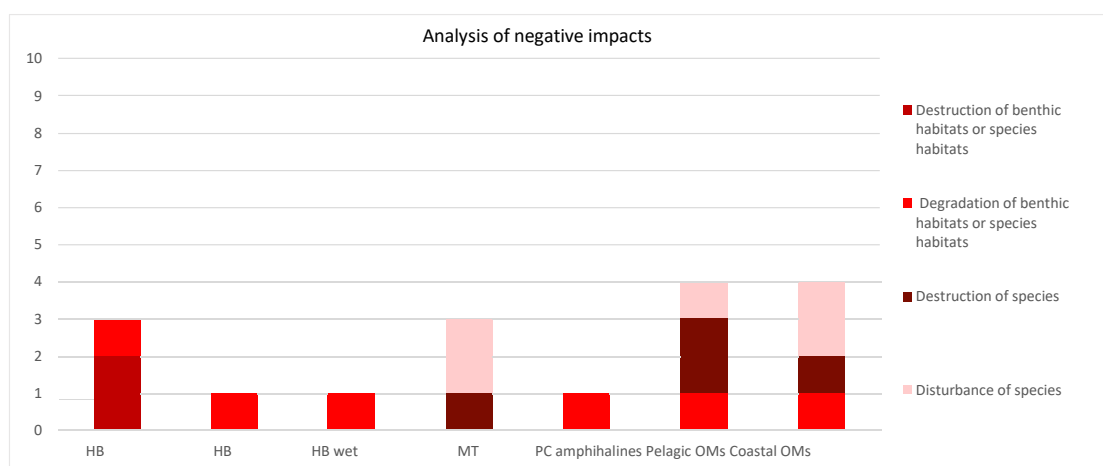
Finally, in addition to these protection actions, there are several cross-cutting actions that should lead to better preservation of CI habitats and species, or even to a form of restoration:

- Develop the network of strong protection zones and reinforce their control (AT01),
- Develop the network of marine educational areas (AT02),
- Strengthen consideration of the sensitivity of species to disturbance in offshore permits and local regulations (D01-OM-OE06-AN1),
- Develop a strategic vision of the coastal on artificialisation with the aim of moving towards "zero net artificialisation" (D06-OE01-AN1)
- Support the regulatory, technical and financial dimensioning of compensation actions at sea (D06-OE01-AN2)

- Develop actions promoting the development of ecosystem services of marine and coastal ecosystems carried out by water sports structures or practitioners (DE-OSE-VII-2-AF3)
- Sub-action "Support project leaders in operational actions of adapted coastline management, particularly integrating nature-based solutions" integrated in the action Encourage the elaboration of local strategies of integrated coastline management (including relocation) as a complement to local flood risk management strategies (SLGRI) (TE-OSE-I-5-AF1)

### Negative impacts on CI habitats and species

Four SBSDactions are likely to have negative impacts on CI habitats and species. These impacts are varied and seem to affect species more than CI habitats, as illustrated in the following graph:



These impacts are mainly induced by actions aimed at the development of certain economic activities:

- Two actions related to the development of MRE: the launch of future calls for tenders for offshore wind projects (DE-OSE-IV-1-AN1) and the development of MRE demonstrator and pilot projects (DE-OSE-IV-2-AF1). In both cases, the N2000 sites of the vocation zones 3b, 5e, 5g, 5h as well as 5b and 5c (only the second action mentioned for these last two zones) are particularly concerned by a risk of impact on birds (loss of hunting habitats, risk of collision during migration), marine habitats, or cetaceans (disturbance during the construction phase of the projects).
- An action in connection with the planning of aquaculture areas (DE-OSE-VIII-6-AF1) which extends to all the areas of use in the territorial sea for the NAMO coastline with a risk of habitat degradation identified at this stage of planning and considering that any future installation will be subject to environmental assessment.

The nature of the impacts induced by these three actions depends on the design and implementation of future MRE and aquaculture projects. The SBSDaction plan thus foresees several actions to reduce these impacts related to the development of these projects:

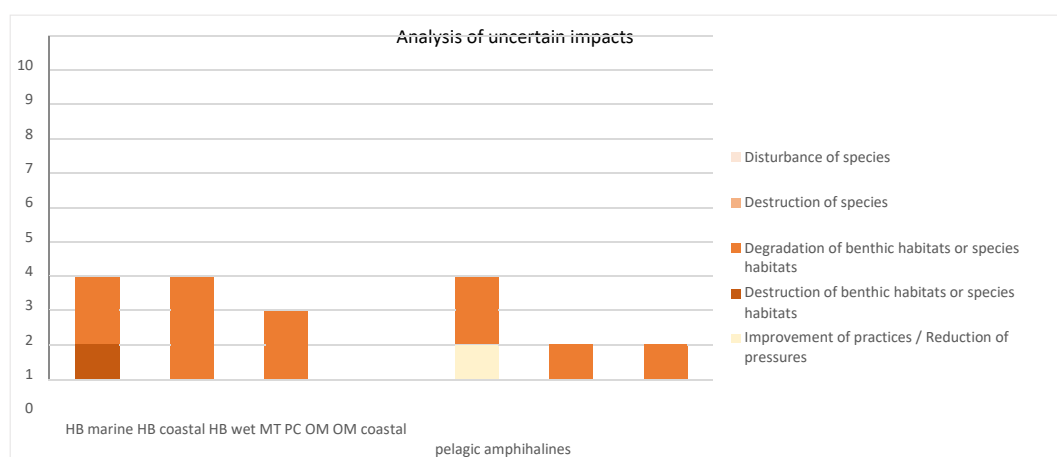
- the creation of specialised bodies: scientific council for MRE (D01-OM- OE02-AN1) and a management and monitoring committee (DE-OSE-IV-1-AF1).
- Incentives for the sustainable development of aquaculture activities (DE-OSE-VIII-6-AN2) and the reinforcement of procedures for the appraisal of future installations (DE-OSE-VIII-6-AN2),

- Improving knowledge of the impacts of these activities (D01-OM-OE02- AN1, RF- OSE-II-1-AF1)
- The preservation actions mentioned in the previous chapter, which make it possible to locate and protect the issues of the coastline

The last action that may lead to potentially negative impacts on CI habitats and species concerns the development of inter-port coordination (DE-OSE-V-1-AF1), which has in particular the objective of capturing traffic in the ports of the coastline, which may lead to an increase in maritime traffic, an activity that puts a lot of pressure on marine species, in particular marine mammals and sea birds. The SBSD action plan provides for several actions to reduce these impacts, in particular action D01-MT-OE03-AN1 aimed at reducing the risks of ship strikes with marine mammals, as well as actions to improve knowledge of the impacts of the activities mentioned above.

### Uncertain impacts on CI habitats and species

Five actions may result in uncertain positive or negative impacts on CI habitats and species at this stage. The following graph shows how uncertain impacts are distributed across the CI issue groups and the type of impacts that could potentially be generated.



Thus, the uncertain impacts of the action plan are unlikely to be positive: only the amphibian PC species is concerned by a possible improvement of practices. The nature of the impacts is otherwise mainly concerned with the degradation of benthic habitats and species habitats, and even potential destruction of marine habitats.

The actions concerned are:

- An action leading to possible offshore developments and consequently a potential destruction of marine habitats via the development of tidal turbines (TE-OSE-II-3-AF1)
- Three actions related to aquaculture development that may lead to degradation of habitats and species habitats (DE-OSE-VIII-6-AF1, DE-OSE-VIII-6-AF2, DE-OSE-VIII-6-AN2)
- An action leading to a potential decrease in pressure on amphihaline CPs by improving fishing practices (awareness of professionals and better management of fish stocks) (DE-OSE-VIII-1-AF1).

It should be noted that there are no uncertain impacts on marine mammals.



## 6. Analysis of the measures taken to Avoid, Reduce and Compensate - ARC - environmental impacts

The measures taken to avoid, reduce and ultimately compensate for negative environmental impacts are part of the iterative process of environmental assessment outlined above (SEA methodology). This so-called ARC sequence for minimising the impacts of development projects on biodiversity and the environment is also intended to be applied at the level of public planning policies such as the Strategic Coastal Strategic Document, whether in their strategic or operational aspects. However, unlike what is possible in impact assessments at the scale of precisely defined projects, we have already highlighted above the difficulty of reaching a precise conclusion on the ability of the operational part of the SBSO to restore GES. Consequently, while it is possible to detail here the avoidance and reduction measures implemented during the process of drawing up the action plan, it is not possible to specify the residual impact and therefore to propose possible compensatory measures for this possible residual impact. Finally, as the implementation of the RE sequence is characterised by its progressive nature as the action plan evolves, the following elements can be considered as the justification of the final choices made.

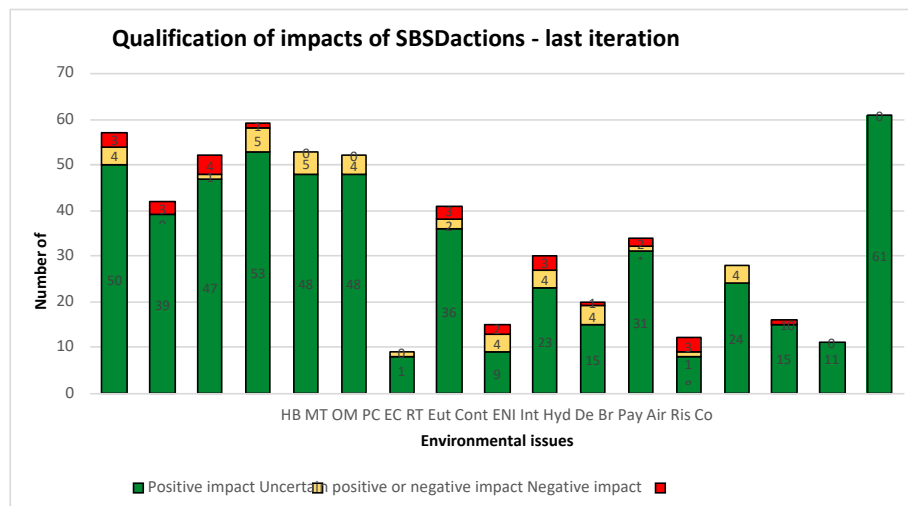
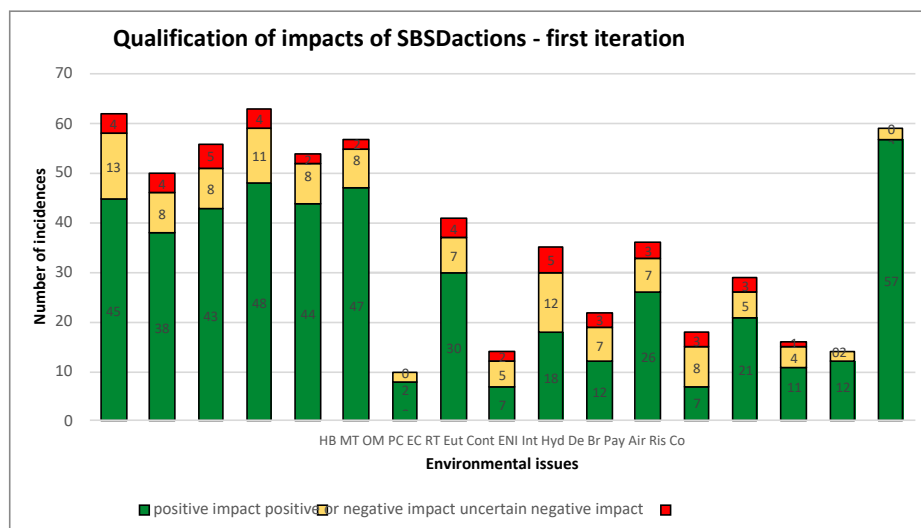
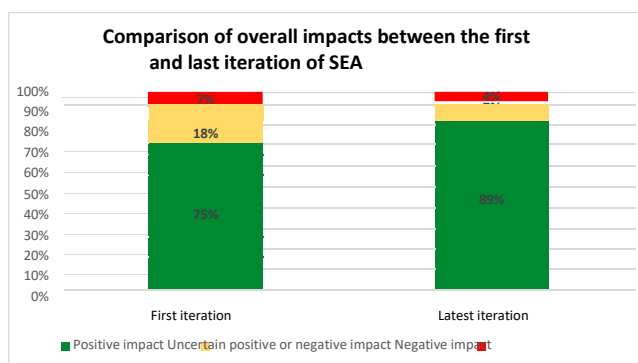
The iterative process of SEA has made it possible to integrate reduction or avoidance measures into certain actions that initially had potential negative or uncertain impacts. In some cases, this integration has changed the characterisation of the impacts from negative or uncertain to positive, and in others it has reduced the negative impact, although it is not possible to say to what extent. The product of this whole process of progressive improvement of the DFS NAMO Action Plan in terms of its environmental impacts is detailed below.

During successive iterations of the SEA:

- some 20 RE measures were proposed for socio-economic actions with potentially negative or uncertain impacts;
- about 70% of them have been integrated into the action plan sheets.

In addition to taking into account the ER measures proposed by the evaluator, the evolution of the action plan has also led to an improvement in impacts, notably through two channels: 1) the inclusion of measures A (flanking) and 2) the inclusion of new actions with positive impacts between the first and second versions of the action plan. On the first point, the evaluator proposed some forty Measure A's for socio-economic actions, whether their impacts are negative, uncertain or positive. Slightly less than half of them were taken into account, and in particular, for some uncertain impacts, they allowed the change to positive impacts and, for positive impacts, to broaden the range of issues concerned.

The product of these different developments in the Action Plan in terms of its environmental impacts is illustrated globally and in detail by environmental issue in the graphs below.



These graphs highlight the following points:

(1) in terms of the overall evolution of impacts, a decrease in the proportion of negative and uncertain impacts, especially in favour of positive impacts. This is due to 1) the integration of RE measures into certain socio-economic actions (e.g. DE-0SE-VI-1-AF1 on the integration of a higher environmental requirement in the shipbuilding industry), 2) the dialogue on numerous accompanying measures which have removed many uncertain impacts and 3) the addition of new environmental measures generating additional positive impacts.

(2) from the point of view of the evolution by environmental issue, a decrease in uncertain impacts for all issues, particularly those relating to the biocenosis (HB, MT, OM, PC) and those relating to pressures on the marine environment (Cont, Int, Hyd, De, Br). Negative impacts on commercial species, food webs and the landscape are also being eliminated.

Finally, in addition to these developments directly related to the iterative process of SEA, it should be noted that some actions or sub-actions of the action plan may be considered as RE measures of another action (when it is an action) or of the same action (when it is a sub-action). These RE measures directly integrated into the action plan by the designers are summarised in the table below.

| Action or sub-action that can be considered as an RE measure   | Justification  |
|--|--|
| EMR SA4 DE-OSE-IV-2-AF1<br><i>Support the technological development of MREs to reduce costs and increase their reliability</i>   | The coordination, within the liaison committee between the major ports of the Atlantic arc, of the investments and developments necessary for the implementation of MRE projects, may be of a nature, by pooling the latter, to reduce the impacts due to the development of ports and induced by the technological deployment of MRE.   |
| EMR SA4 DE-OSE-IV-1-AN1<br><i>Develop preferred offshore wind project areas, in the short, medium and long term, notably through public participation processes (under the aegis of the National Commission for Public Debate (CIMER 2019)).</i> | The mutualisation of the connection of wind farms may be able to avoid and/or reduce new impacts of the action concerning the deployment of MRE.   |
| EMR DE-OSE-IV-1-AF1<br><i>Coordinate the monitoring and environmental assessment of offshore wind farms at the level of the coastline</i>  | Coordinating monitoring and environmental expertise can help to ensure environmentally friendly implementation (development of ERC measures, better monitoring of the ARC approach for each park, consideration of cumulative effects, etc.) and ultimately reduce the impact of action concerning the deployment of MRE.  |
| DE-OSE-VIII-6-AN1<br><i>Securing the procedures for examining applications for authorisation to operate marine crops</i>   | Support for project leaders and instructors is conducive to better consideration of the environment and can help to avoid or reduce the impacts of aquaculture development actions (in particular DE-OSE-VIII-6-AF1).  |
| DE-OSE-IX-1-AF1<br><i>Update the assessment of silica sand and shell sand requirements for the Brittany and Pays de la Loire regions by 2025 (DOGGM)</i>   | In the event that the review of requirements reveals a shortfall in supply, the MOGM provides for (1) measures to propose ways of reducing land-based requirements and (2) an evolution of production capacities that is necessarily compatible with the protection of environmental components. These are therefore measures to reduce the impacts of marine aggregates exploitation. |
| Action RF-OSE-II-1-AF1<br><i>Carrying out studies to improve knowledge of the impacts of activities at sea</i>   | Knowledge studies focusing on the impacts of activities at sea are likely to contribute in the long term to the avoidance and reduction of these impacting activities.   |

| Action or sub-action that can be considered as an RE measure   | Justification   |
|--|---|
| D01-OM-OE02-AN1<br><i>Prefiguring a national coordination body for coastal scientific councils (CSF) on offshore wind energy</i> | The contribution of scientific expertise at the different stages of the process (issuing opinions on scientific protocols, on the results of monitoring and on proposals for the evolution of ARC measures, link with the acquisition of knowledge), coordinated moreover on a national scale, is likely to avoid and reduce the impacts on the development of offshore wind energy in the long term. |

Furthermore, the action plan of the NAMO coast's SBSD shows a good articulation between the programme's actions, notably through the integration in the socio-economic sheets of links with environmental actions designed to frame, and therefore potentially reduce, the potential effects of economic actions.

Finally, it should be noted that DIRM NAMO, in parallel with the work of the consultancy firm, contributed to the identification of the impacts for each socio-economic and environmental action and to the taking into account of the ARC sequence, and that these elements appear in each action sheet, under the headings "environmental impacts" and "environmental impact".

"ARC sequence". It should be noted that these headings are specific to the NAMO coastline and do not appear in the action sheet model proposed at national level. In any case, this work testifies to the strong awareness and consideration of the DIRM and its partners (since it was shared at the CMF), for taking the environment into account throughout the process of drawing up the action plan, as well as for taking into account the opinion of the environmental authority, which recommended that the ARC approach be applied during the development of the plan

of the 2nd<sup>nd</sup> phase of the SBSD development. However, in its common approach to all the coastlines, the design office has done its expert work without direct influence on its sections. Rather, it was during the iterative exchanges with the DIRM that certain elements were integrated directly into the explanation of the actions and sub-actions and thus established a better understanding and/or consideration of the environment, in the sense of gradually improving the impacts as described above.

## 7. Impact monitoring indicators

The façade strategy paper (FSD) consists of four parts, the third of which is devoted to the arrangements for evaluating the implementation of the DSF. The monitoring mechanism is therefore an integral part of this third part, which, together with the action plan, constitutes the operational part of the DSF.

The development of this monitoring system enables France to meet its obligations under the two EU framework directives on Marine Strategy (MSFD) and Maritime Spatial Planning (MSFD). It thus defines the monitoring strategy to be put in place with the following objectives

- To update and clarify the evolution of the existing situation on the seafloor;
- To evaluate the achievement of strategic objectives specific to each coastline.

This joint monitoring system for the environmental and socio-economic strategic objectives is therefore, like the DSF, being developed for the first time. It integrates the monitoring system of the MSFD, which was the subject of a first version during the first cycle of this directive implemented prior to the drafting of the DSF. This first version of the "DSF" monitoring system was finalised at the end of January 2021.

For this environmental assessment, the monitoring system was mobilised in two directions<sup>33</sup>:

- on the one hand, to understand its capacity to improve the monitoring of the evolution of the GES gap, since this capacity conditions the possibility to assess the overall impact of the action plan in a more robust way;
- secondly, to understand its capacity to monitor the main environmental impacts identified during the analysis, and in particular those impacts presenting a potential risk for the restoration of the good status of environmental issues, i.e. negative or uncertain impacts.

### 7.1. Capacity of the monitoring system to improve the monitoring of the GES gap

This capacity is directly linked to the improvement of the MSFD monitoring system, which is the subject of Annex 1 of the monitoring system. The improvements for the second cycle proposed in this annex<sup>34</sup> can be seen in the light of the assessment of the GES deviation or the level of challenge that was made at the scale of the different vocation zones of the coastline - see part 4 of this report. This is the purpose of the table below.

<sup>33</sup> Mobilisation within an extremely tight timeframe given the concomitant finalisation of the monitoring scheme and the environmental report.

<sup>34</sup> And in particular in the tables in Part 3 "Summary of the devices integrated in the monitoring programme" of each monitoring programme detailed in Annex 1 of the DDS.

| Issues      | Overall assessment at the level of all VZs | Overall reliability across all VZs | Monitoring system as described in Annex 1 of the DDS  |
|-------------|--|------------------------------------|---|
| <b>HB</b>   | Overall high GES gap                       | Low                                | None operational, almost 60% not operational but expected to be at the end of this cycle and more than 40% to be established  |
| <b>MT</b>   | Overall average GES gap                    | Average                            | About 70% of the schemes operational, and 30% not operational but expected to be at the end of this cycle   |
| <b>OM</b>   | Overall average GES gap                    | Low                                | About 50% of the schemes operational, and 50% not operational but expected to be at the end of this cycle   |
| <b>PC</b>   | Overall high GES gap                       | Low                                | Two out of four schemes are operational, the other two should be operational by the end of this cycle<br>Furthermore, one out of four sub-programmes is to be set up and will therefore not be operational at the scale of the next cycle |
| <b>EC</b>   | Overall high GES gap                       | Low                                | Two thirds of the schemes are operational and one third are not operational but should be by the end of this cycle  |
| <b>RT</b>   | Not rated                                  | Not rated                          | No specific monitoring system targeted at this issue  |
| <b>Eut</b>  | Overall low GES gap                        | Good                               | All devices are operational   |
| <b>Cont</b> | Overall average GES gap                    | Good (not assessed)                | Approximately 70% of schemes operational and 30% not operational but expected to be at the end of this cycle  |
| <b>NIS</b>  | Overall medium level of concern            | Good                               | Monitoring programme fully under development  |
| <b>Int</b>  | Overall medium level of concern            | Good                               | Half of the schemes are operational and the rest are not operational but should be by the end of this cycle   |
| <b>Hyd</b>  | Overall medium level of concern            | Average                            | 40% of schemes operational and 60% of schemes not operational but expected to be at the end of this cycle   |
| <b>From</b> | Overall medium level of concern            | Good                               | Two out of nine schemes to be set up and out of the others, 50% are operational and 50% are not operational but should be at the end of this cycle  |
| <b>Br</b>   | Overall medium level of concern            | Good                               | One in four of the schemes to be created and of the remaining three, only a quarter are operational and three quarters are not operational but should be by the end of this cycle   |

This table shows that the assessment of the GES gap is expected to improve significantly in the next cycle, provided that the currently non-operational monitoring devices are effectively operational by the end of 2026. Only three issues are still expected to have significant uncertainties in terms of assessing their status at that time:

- **benthic habitats**, for which the monitoring system should be improved, while maintaining a certain number of systems still in the research or experimental stage ("to be set up" systems in the table). Given the importance of this issue on the NAMO coast (deviation from the GES difficult to assess but high overall), we can only recommend that the utmost attention be paid to improving the monitoring system for it;
- **fish and cephalopods**, for which, although two schemes are operational, two will be operational by the end of the cycle, but one sub-programme has yet to be set up and will not be operational by the end of this cycle. Thus, the monitoring system should not allow for a complete evaluation of this important issue for the NAMO coastline (deviation from the GES difficult to assess but high overall);



- **food webs**, which is an issue whose GES is neither defined nor assessed today, and which is not subject to a specific monitoring programme for the next cycle;
- **non-native species**, for which the monitoring programme is not expected to be operational by 2026 as it is still under development. Even if the level of this issue has been considered to be fairly low overall on the NAMO coastline, it is nevertheless necessary to remain vigilant about the ability to assess it.

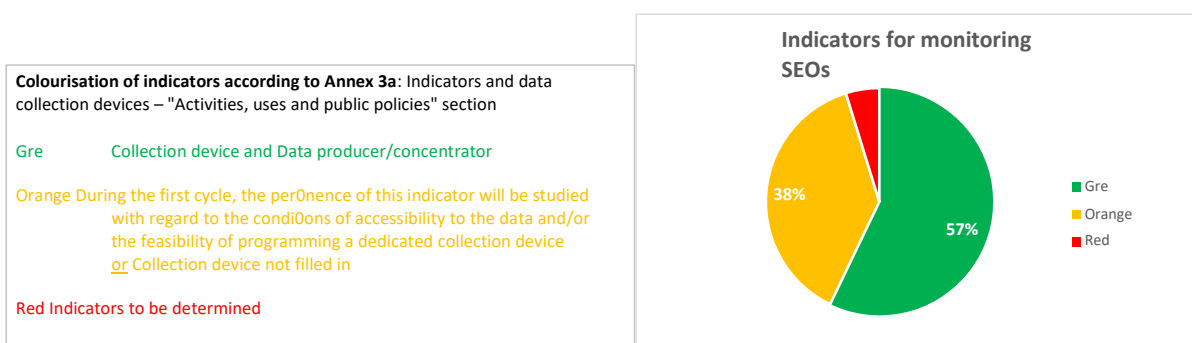
## 7.2. Capacity of the monitoring system to report on the main impacts identified

The aim here is to understand **the monitoring capacity of the main environmental impacts identified during the analysis**. This refers to the definition of the indicators proposed in the SFM and the operational nature of the monitoring system put in place to assess them.

In order to do this, we have included all socio-economic actions that are likely to have one or more negative or uncertain environmental impacts. For these, we studied the indicators planned for the socio-economic and environmental objectives (see Annexes 6a and 6b of the DSF's SFM<sup>35</sup>), and established, on the basis of Annexes 3a and 3b of the monitoring mechanism<sup>36</sup>, typologies concerning the more or less operational nature of these indicators. We also looked at the existence of specific indicators for socio-economic activities that could generate the negative or uncertain environmental impacts, and similarly looked at their more or less operational nature. The following three paragraphs summarise these analyses.

### ***FOLLOWING UP ON NEGATIVE OR UNCERTAIN IMPACTS – READING ON THE MONITORING INDICATORS ATTACHED TO THE SOCIO-ECONOMIC OBJECTIVES***

On the NAMO coast, 10 socio-economic actions are likely to have negative (26 impacts) or uncertain (40 impacts) impacts. In the monitoring system, these actions refer to 21 monitoring indicators linked to the socio-economic objectives. Their operability can be approached according to the following typology and results for the 21 indicators concerned.



The monitoring of socio-economic actions with negative or uncertain environmental impacts seems rather operational from an indicator point of view<sup>35</sup>

Annex 6: Strategic objectives and associated indicators Part A: Environmental objectives (6a) and Part B: Socio-economic objectives (6b)

<sup>36</sup> in Annex 3a: Indicators and data collection devices – Part "activities, uses and public policies" and Annex 3b: Focus on Environmental Objectives (EOs), Good environmental status (GES) criteria and Economic and Social Analysis (ESA)

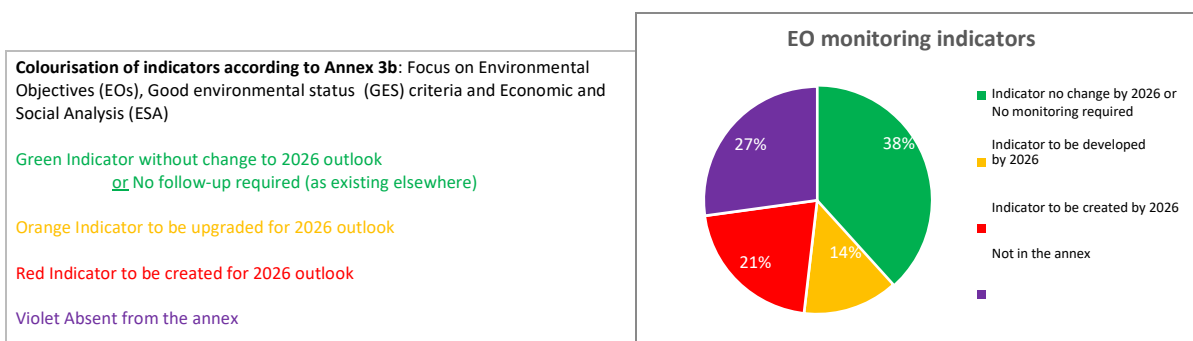
attached to the ESOs, since more than half of them (green for 12/21) have a data collection system and a data producer and only one has yet to be defined (red for 1/21). However, an effort remains to be made on the other indicators (orange for 8/21): to prove the relevance of the indicator and/or to specify the collection system.

Of the ten actions, those with negative impacts are MRE, ports and fisheries and aquaculture. The operational character of the socio-economic monitoring indicators is heterogeneous according to these themes: 100% operational for fisheries and aquaculture, more mixed for MRE (1 green, 4 orange, 0 red) and especially for ports (1 green, 4 orange and 1 red).

### ***FOLLOWING UP ON NEGATIVE OR UNCERTAIN IMPACTS – READING ON THE MONITORING INDICATORS ATTACHED TO THE ENVIRONMENTAL OBJECTIVES***

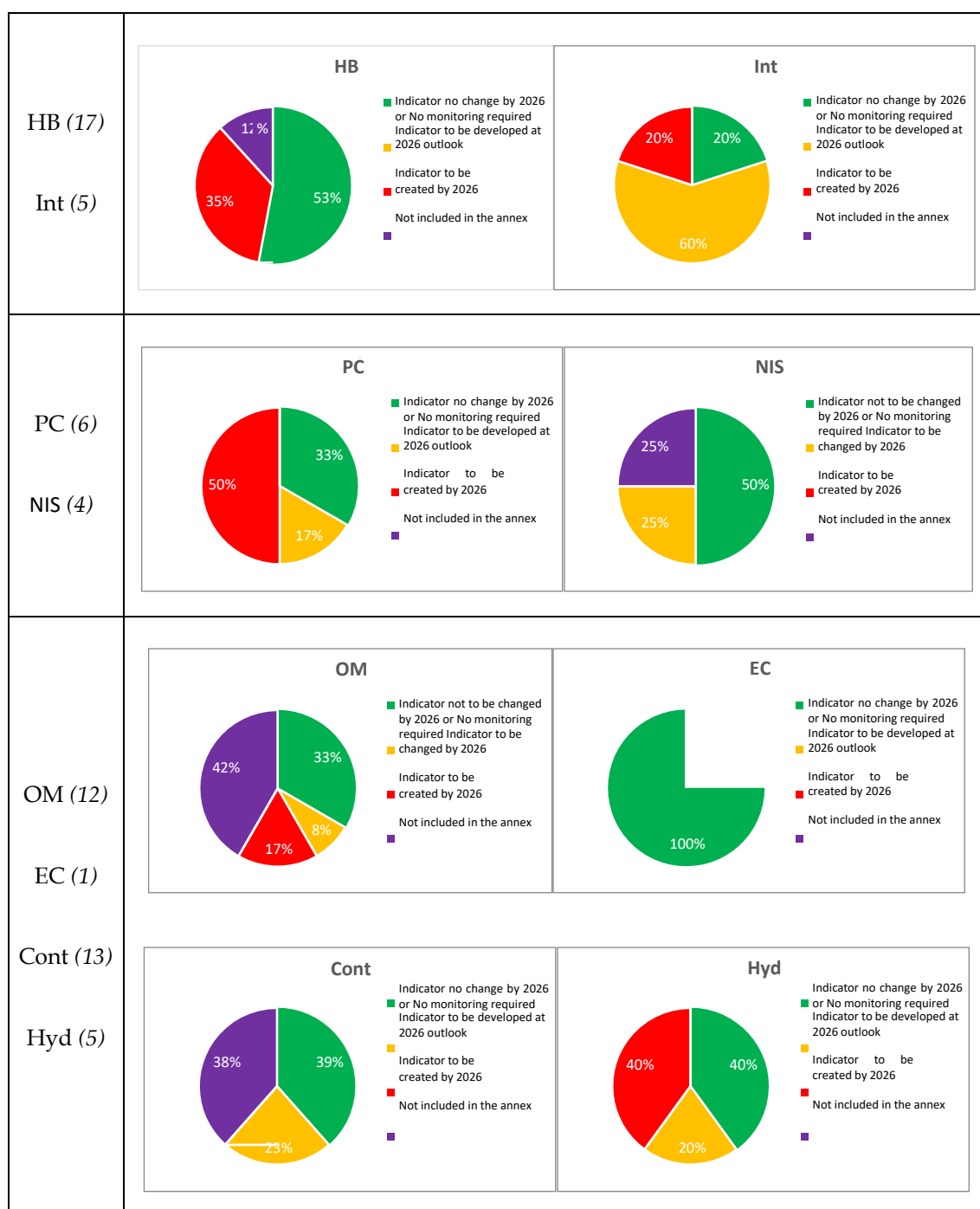
On the NAMO coast, the 66 negative and uncertain impacts concern 15 out of 17 issues (except Ris and Co), with between 1 and 7 impacts per issue. The main issues concerned are HB, Int (7 incidences), PC, ENI (6 incidences), OM, EC, Cont, Hyd (5). Other issues are less concerned: RT, Br, Pay (4 incidences), MT, De (3 incidences) and Eut, Air (1 incidence).

In the monitoring system, the issues related to the biocenosis and the pressures refer to 81 monitoring indicators linked to the environmental objectives. Their operability can be approached according to the following typology and results for the 81 indicators concerned.



The monitoring of socio-economic actions with negative or uncertain environmental impacts seems to be less operational from the point of view of EO indicators than from the point of view of SEO indicators as mentioned above. In fact, barely 40% of them (green for 31/81) have an indicator that is already operational (No change by 2026 or No monitoring required under the SBSDB because it is being carried out elsewhere) and just over 20% are to be created (red for 17/81). An effort remains to be made on the other indicators (amber for 11/21): evolve existing indicators to obtain information on finer indicators in the framework of the DSF. It should also be noted that it is not possible to comment on almost 30% of the indicators, as they are not included in Annex 3b of the monitoring scheme.

For the main issues concerned with negative and uncertain impacts, the results are as follows (in brackets, the number of indicators on each descriptor):



The operability of the monitoring of indicators concerning the issues on which there are the most negative and uncertain impacts appears to be very heterogeneous. A particular effort should be made to monitor the integrity of the seabed, fish and cephalopods and hydrographic conditions.

### OPERATIONALITY OF ACTIVITY-SPECIFIC ENVIRONMENTAL INDICATORS

Among the 81 indicators for monitoring environmental objectives, we were able to identify about 30 (31/81) specific to activities, in particular those likely to generate the negative and uncertain impacts of our 10 socio-economic actions:

- Fishing: commercial fishing (5 - 3 green and 2 purple), shore fishing (1 green), commercial and recreational fishing (4 - 2 green and 2 red)
- Aquaculture (2 - 1 green and 1 purple)
- Energy production (1 green)
- Material extraction (5 - 4 green and 1 orange)
- Artificialisation of the coastline (3 orange)
- Shipping and boating: Shipping (2 - 1 green and 1 orange), Boating (3 - 1 green, 1 red and 1 purple), Mixed (3 purple)
- Ports (2 - 1 green and 1 orange)

First of all, as shown in the graph opposite, the indicators that can be identified as specific to activities have a higher overall operability than the indicators as a whole (48% green against 38% and 10% red against 21%), which is a good thing.

In addition, for MREs, ports and fisheries/aquaculture, which are the main activities affected by

negative and uncertain impacts, the results are rather encouraging, with the indicators being quite strongly operational, between 50% and 100%. It should be noted, however, that there is only one specific indicator for MREs, compared to two for ports and, above all, 12 for fishing/aquaculture.

