

**DIRECTORATE-GENERAL FOR PLANNING, HOUSING
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**SUB-DIRECTORATE FOR THE PROTECTION AND RESTORATION OF
COASTAL AND MARINE ECOSYSTEMS**

**STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE
MEDITERRANEAN SEA BASIN DOCUMENTS**

**OPERATIONAL ASPECTS OF THE SEA BASIN STRATEGY
DOCUMENT**

Environmental report
submitted for consultation

February 2021



Évaluer les Politiques et Innover
pour les Citoyens et les Espaces



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1. Non-technical summary

INTRODUCTION

Sea Basin Strategy Documents (Documents Stratégiques de Façades Sea Basin Strategy Documents) must be subject to an impact assessment, as noted in Article R122-17 of the Environmental Code.

The purpose of this environmental assessment is to ensure that the choices that have been made are relevant with regard to the environmental issues at stake; this is achieved by assessing the positive and negative impacts in a predictive manner, and by proposing, if necessary, a set of measures to avoid, reduce and compensate for the negative impacts. This assessment was carried out by a group of independent consultancies who were responsible for producing the report, and it was monitored by a steering committee made up of the MTES, the four DIRMs and the public establishments that provided scientific and technical support in preparing the Sea Basin Strategy Document (OFB, IFREMER and CEREMA).

The particular context in which the Sea Basin Strategy Documents were drawn up, gives this SEA certain specific features:

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

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 Sea Basin Strategy Document on the environment by: (1) reinforcing the spatialization of the analysis, (2) analysing more precisely and in a spatialized way at the scale of each vocation zone, the situation of the various environmental issues with regard to the Good Ecological Status or in terms of level of the challenge and (3) linking a number of characteristics to the nature of the identified impacts thereby 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 Sea Basin Strategy Document 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 dimensioned 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 context of the health crisis 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 Sea Basin Strategy Documents.

BRIEF PRESENTATION OF THE SEA BASIN STRATEGY DOCUMENT AND THE CONTEXT IN WHICH IT WAS DEVELOPED

From a formal point of view, the Environment Code stipulates (Articles R219-1-7 to R219-1-14) that the sea basin document comprises four parts:

- the existing situation, the issues at stake and a draft vision for the future of the coastline in 2030; (part 1)
- the definition of strategic targets from an economic, social and environmental point of view and the associated indicators; they are accompanied by a designated uses 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 Sea basin Strategy Document constitutes the "**Sea basin strategy**", which was developed in 2018 and was subject to an initial strategic environmental assessment. Following consultations, this Sea basin 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 Sea Basin Strategy Document. The latter was developed between October 2020 and January 2021 and is the subject of a second Strategic Environmental Assessment of the Sea Basin Strategy Document. **This report concerns this second SEA and therefore focuses on the operational part of the Sea Basin Strategy Document.**

The sea basin 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 good environmental status by 2020

of the marine environment. For example, Member States must draw up Action Plans for the Marine Environment 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 Action Plan for the Marine Environment.

The Sea Basin Strategy Document 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 coastline administrative commission, the composition of which is set by inter-prefectoral order 49/2016 of 9 June 2016, and on the Sea Basin Council (CMF), a consultation body provided for by article L.219-6-1 of the 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 Sea Basin Strategy Document 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 (River Basin Management Plan). This document also identifies other documents with which the Sea Basin Strategy Document should be linked.

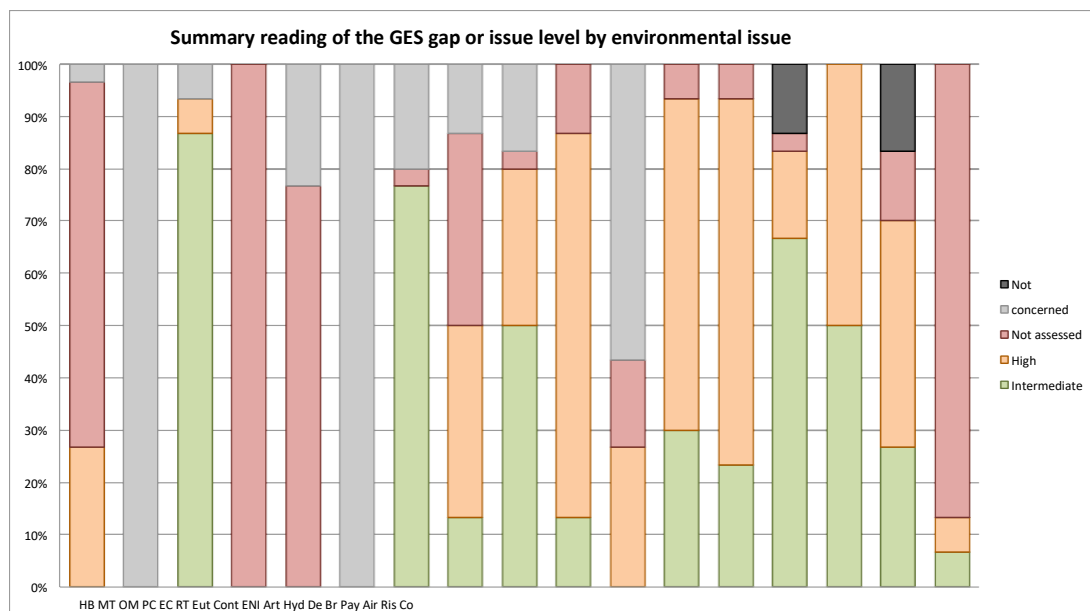
THE ENVIRONMENTAL ISSUES OF THE COASTLINE

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.

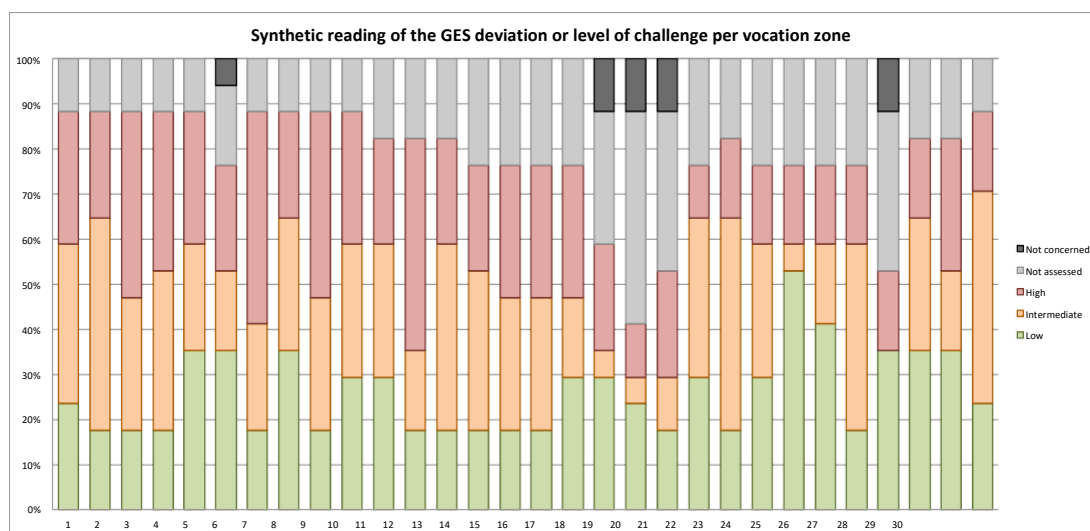
Category of issues	Acron.	Environmental issues	Correspondence to descriptors MSFD	Characteristic elements
Issues related to the components of the marine environment	HB	Benthic habitats	D1-HB	Quality of major biogenic, rocky, sedimentary, deep, wetland habitat types
	MT	Mammals and turtles	D1-MT	Species distribution and abundance: home range of sedentary bottlenose dolphin groups, seal colonies, feeding areas, other cetaceans
	OM	Sea birds	D1-OM	Species distribution and abundance: nesting, feeding areas, colonies, wintering sites of sea birds 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), localized populations (benthic invertebrates, elasmobranchs), concentration and migration areas for amphibian 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	ENI	Non-native species	D2	Non-native species that are invasive or disrupt ecosystems
	Eut	Eutrophication	D5	Human-induced eutrophication
	Int	Sea-floor integrity	D6	Integrity of the sea-floor and artificialization of the coastline
	Hyd	Modification of the hydrographic conditions	D7	Hydrographic conditions
	Cont	Contaminations chemical and biological	D8 and D9	Chemical contaminants in the environment, phycotoxins, microbiological contaminants
	From	Litter	D10	Amount of floating, shoreline, bottom, ingested litter and micro-litter
	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 humans	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 being a reading by environmental challenge and the second a reading by vocation zone.



The percentages are relative to the number of vocation zones (i.e. 30). 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 7, just over 50% of the issues have an GES deviation or a high issue level.

The most important issues for the coastline concern benthic habitats, fish and cephalopods, commercial species and knowledge, where the gap with the GES is high for the vast majority of the areas of interest. Mammals and turtles as well as food webs do not show an assessment of good status, hydrographic conditions and, to a lesser extent, commercial species show an insufficiently assessed deviation from GES. The assessed issues with a weak score particularly relate to predominantly offshore areas. The issues with a rather low GES deviation on a large majority of the

areas of interest are sea birds, eutrophication and landscape. It should be noted that 50% of the vocation zones have a low GES deviation on air and non-native species issues. 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.

The distribution of the GES gap or issue level by vocation zone shows a majority of zones where between 15 and 35% of the issues have a low GES gap or issue level (28 zones). The areas with the lowest GES deviation are areas 24 (Scandola) and 25 (Western coast of Corsica). Offshore areas are among the least assessed areas.

IMPACT ANALYSIS

Situation in the absence of an Sea Basin Strategy Document

In order to try to clarify the evolution of environmental issues in the absence of a Sea Basin Strategy Document, 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	Summary	Summary reliability
Beach activities		+
Agriculture	↘	++
Aquaculture	↘	+
Artificialization of the coastline		++
Underwater cables		+
Shipbuilding		++
Defence		+
Extraction of materials	↘	+
Industries	↘	+
Recreational boating	→	+
Recreational fishing		
Professional fishing	↘	++
Energy production		+
R & D	→	+
Maritime transport		+
Maritime public works		+

N.B.: no trend could be defined for recreational fishing due to the lack of indicators. However, according to the DIRM's expertise, recreational fishing activity is stable.

Two important findings emerge from this table:

- on the one hand, the most important activities on the coast have been growing in recent years – seaside activities and maritime transport in particular;
- on the other hand, the reliability of these trend estimates remains limited in the absence of an effective system for monitoring the evolution of pressures exerted by socio-economic activities, which has yet to be built (see part 7 of this report).

It could be deduced from the first observation that, in the absence of a Sea Basin Strategy Document, pressures will continue on the marine environment and that the situation of many 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 two reasons:

(1) 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;

(2) 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 DPA

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

Part I - Adapting the coastline and its activities	<p>At the end of the analysis of Part I, it appears that the related actions of the plan are likely to generate nearly 251 potential impacts on the 17 environmental issues. About 83% are considered positive, 13% uncertain and 4% negative.</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, 29% concern issues related to pressures on the marine environment and 24% concern other societal issues.</p> <p>The issues most strongly concerned in this section are benthic habitats (26), knowledge (22), fish and cephalopods (21), sea-floor integrity (21), food webs (18), landscape (18). The issues least concerned are litter (9), noise (8), air (6), NIS (6) and eutrophication (3).</p>
Part II - Managing fisheries resources - supporting the fishing and aquaculture professions	<p>At the end of the analysis of this part II, it appears that the actions of the plan are these reports are likely to generate around 128 potential impacts on 16 environmental issues (no impacts on risks). About 77% are considered positive, 17% uncertain and 6% negative.</p> <p>With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 55% of the impacts concern issues related to components of the marine environment, 30% concern issues related to pressures on the marine environment and 14% concern other societal issues.</p> <p>The issues most strongly concerned in this section are fish and cephalopods (18), commercial species (17), benthic habitats (14) and knowledge (14). The issues least impacted are mammals and turtles (5), eutrophication (4), landscape (3), noise (1) and air quality (1).</p>
Part III - Protecting emblematic species and spaces	<p>The analysis of Part III shows that the related actions of the plan are likely to generate 39 potential impacts on 11 environmental issues (no impacts on hydrology, NIS, eutrophication, noise, air quality and risks). About 92% are considered positive and 8% uncertain.</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, 18% concern issues related to pressures on the marine environment and 21% concern other societal issues.</p> <p>The issues most strongly affected in this section are benthic habitats and food webs. The issues least concerned are fish and cephalopods, litter and contaminants.</p>

<p>Part IV - Structuring, coordinating and promoting innovation in ports, maritime transport, nautical and naval industries</p>	<p>The analysis of Part IV shows that the related actions of the plan are likely to generate 68 potential impacts on 16 environmental issues (no impacts on risks). About 87% are considered positive, and 13% uncertain.</p> <p>With regard to the three sets of issues defined in the initial assessment, 41% of the impacts concern issues related to the components of the marine environment, 41% concern issues related to pressures on the marine environment and 18% concern other societal issues.</p> <p>The issues most strongly concerned in this section are contaminants. The issues least concerned are landscape, NIS and eutrophication.</p>
<p>Part V - Structuring, coordinating and promoting innovation in ports, maritime transport, nautical and naval industries</p>	<p>At the end of the analysis of Part V, it appears that the actions of the plan relating to it are likely to generate nearly 80 potential impacts on the 17 environmental issues. All impacts are considered positive.</p> <p>With regard to the three sets of issues defined in the initial assessment, 46% of the impacts concern issues related to the components of the marine environment, 41% concern issues related to pressures on the marine environment and 13% concern other societal issues.</p> <p>The issues most strongly affected in this section are benthic habitats, sea birds, mammals and turtles, fish and cephalopods, and commercial species. The issues least concerned are knowledge, risks and air quality.</p>
<p>Part VI - Structuring, coordinating and promoting innovation in ports, maritime transport, nautical and naval industries</p>	<p>The analysis of this part VI shows that the related actions of the plan are likely to generate around 73 potential impacts on 11 environmental issues (no impacts on noise, sea-floor integrity, hydrology, NIS, risks and air quality). All impacts are considered positive.</p> <p>With regard to the three sets of issues defined in the initial assessment, 66% of the impacts concern issues related to the components of the marine environment, 23% concern issues related to pressures on the marine environment and 11% concern other societal issues.</p> <p>The issues most strongly affected in this section are benthic habitats, sea birds, mammals and turtles, fish and cephalopods, food webs, commercial species, litter and contaminants. The issues least affected are landscape, knowledge and eutrophication.</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. Although the strong dominance of positive impacts, as well as the localised nature of the negative impacts (MRE implementation zones, possible aquaculture development zones), allow us to conclude that the action plan has a positive impact on them overall, it is impossible to state its extent and therefore the capacity of the action plan to restore good 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 for sea birds is much more favourable and the action plan should at least reinforce this, even if the impact of future wind farms on migratory birds will require the utmost vigilance;

— for the last two issues in this first group (mammals and turtles and food webs), the GES is not defined and the deviation from it not assessed; it is therefore even more difficult to comment on the overall impact of the action plan.

On the issues related to pressures on the marine environment, the impact of the Sea Basin Strategy Document should be less significant than for those of the first group, given the smaller number of actions impacting on these issues, although 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 modest for eutrophication, NIS and noise, which does not have the same consequences given the different situation of these issues (see section 4). Eutrophication is indeed rather favourable on the coastline, in contrast to noise, which is a relatively important issue, with the NIS being in an intermediate situation. Thus, while the a priori modest impact of the action plan seems to be little problematic for eutrophication, it could be more problematic for NIS in certain vocation zones, and for noise pollution;

— more important for contaminants, sea-floor integrity, hydrographic conditions and litter. This greater impact of the plan on these four issues is all the more relevant as they present fairly high levels of challenge. Nevertheless, it is impossible to make a statement on a possible return to good status as this has not been defined for three of them (litter, hydrographic conditions and integrity of the sea-floor). As for contaminants, the overall gap seems to be quite large and difficult to close at the scale of this action plan;

The "Other societal issues" will all be positively impacted by the action plan as it has a very high proportion of positive impacts and no negative impacts. 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 of large-scale wind farms on the landscape;

— the impacts on air quality are much less numerous, although all of them are positive. 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;

— the impacts on risks are also relatively few, for a relatively high number of issues on a good part of the coastline (coastline of the two regions Provence-Alpes-Côte d'Azur and Occitanie);

— finally, the impacts on knowledge are numerous, all positive and mostly short-term. The plan should therefore significantly improve the level of knowledge about the coastline, which is highly relevant given the existing uncertainties.

SPATIALIZED IMPACTS AT THE LEVEL OF THE VOCATION ZONES

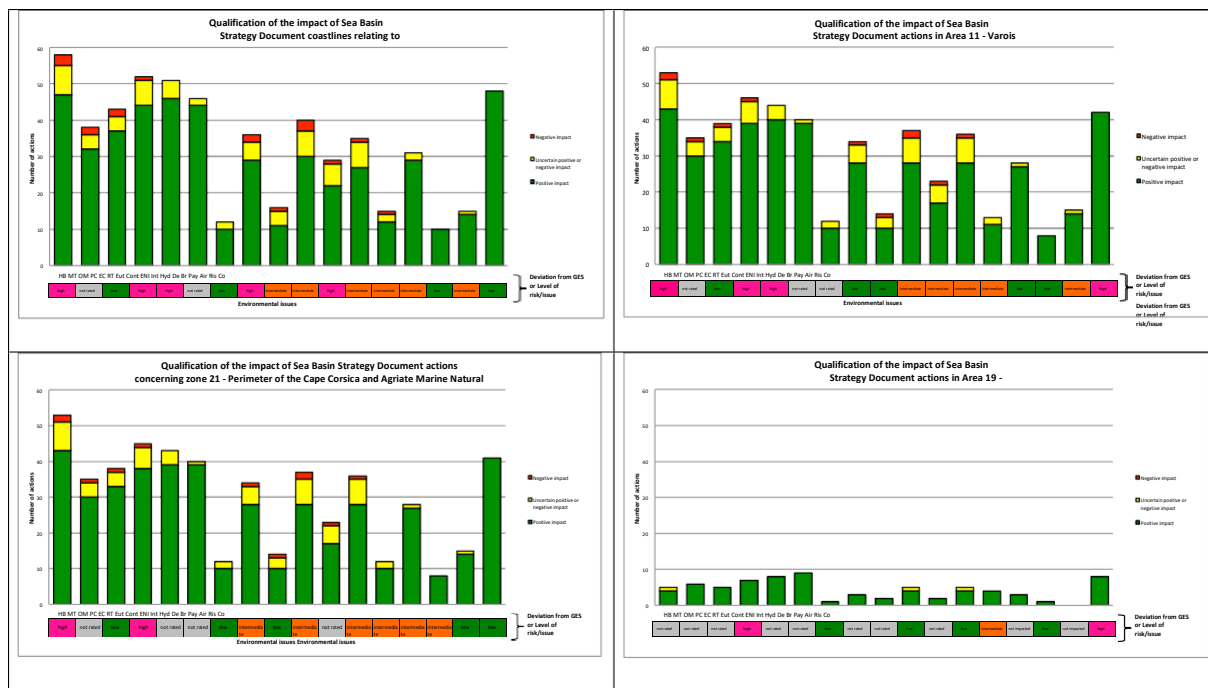
With regard to the vocation zones affected by the impacts described above, two profiles of vocation zones can be distinguished in the first place: the vocation zones that are located offshore and the coastal vocation zones. In fact,

— the coastal areas have a fairly similar impact profile overall, close to the profile of the entire coastline described in the following sections

on it (see below an illustration of an area of the Occitanie coastline, an area of the Provence-Alpes-Côte d'Azur coastline, and an area of the Corsican coastline);

- the offshore areas have a much lower number of impacts, which is related to the overall lower number of issues in these areas (see illustration below of an offshore area).

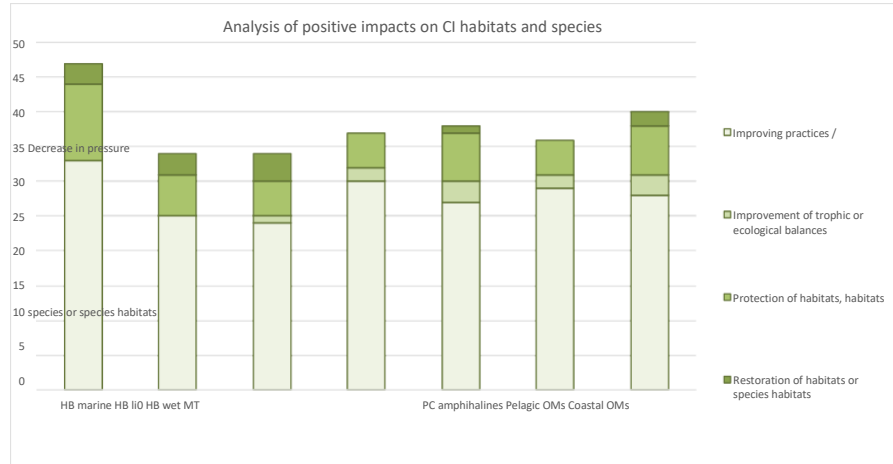
Illustration: impact profiles for three coastal areas and one offshore area (see Annex 4 Environmental Report for details on all areas)



IMPACT OF THE SEA BASIN STRATEGY DOCUMENT ON NATURA 2000 SITES ALONG THE COAST

Positive impacts on CI habitats and species

The majority of the impacts of Sea Basin Strategy Document actions are positive on habitats and species of Community interest (concerns 63 Sea Basin Strategy Document actions). The following graph shows the distribution of these impacts by group of issues of community interest.



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, professional and recreational fishing, production

	<p>electricity, dismantling industries, tourism and yachting, seaside activities and which are likely to be located within Natura 2000 sites. The actions of the Sea Basin Strategy Document should thus enable better consideration of CI issues by limiting the degradation of marine, coastal or wetland benthic habitats, reducing pollution and litter, reducing the incidental capture of marine mammals or sea birds, and limiting the risks of collisions and disturbance of marine megafauna during work at sea or induced by the various activities.</p>
Uncertain impacts on the habitats and IC species	<p>About ten actions may lead to uncertain impacts at this stage, either positive or negative impacts on CI habitats and species. The following graph shows how the uncertain impacts are distributed across the CI issue groups:</p> <p>As illustrated in the graph above, the majority of the nature of the uncertain impacts on Natura 2000 habitats and species is about improving practices or reduction of pressures.</p> <p>Only pelagic and coastal sea birds are affected by species destruction.</p>
Impacts negative on habitats and IC species	<p>NEGATIVE IMPACT ON HABITATS AND CI SPECIES</p> <p>Three actions are likely to generate negative impacts on habitats and species. The majority of the negative impacts on Natura 2000 habitats or species concern destruction or degradation. Only the Natura 2000 issues of Mammals and Marine Turtles present negative impacts of the species disturbance type as shown in the graph below:</p>

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

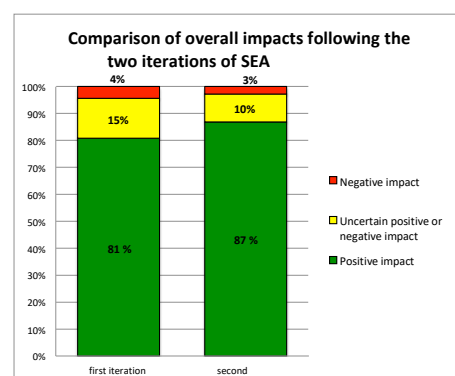
The iterative process of SEA has made it possible to integrate reduction or avoidance measures into certain actions that initially had potential negative or uncertain impacts. In some cases, this integration has changed the characterisation of the impacts from negative or uncertain to positive, and in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

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

— approximately half of them were included in the action plan sheets, the DIRM having justified its choice not to include the others during discussions with the evaluator (often because these ER measures were already the subject of other actions, particularly environmental ones).

In addition to taking into account the ER measures proposed by the evaluator, the evolution of the action plan can also lead to an improvement in impacts, notably with the integration of new actions presenting positive impacts.

The product of these different developments in the Action Plan in terms of its environmental impact is illustrated in the graph opposite.



IMPACT MONITORING INDICATORS

The development of the monitoring system, which, together with the action plan, forms the operational part of the Sea Basin Strategy Document, enables France to meet its obligations under the two framework directives on Marine Strategy (MSFD) and Maritime Spatial Planning Directive (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 for the maritime coastline;
- Evaluate the achievement of the strategic targets of each coastline.

This joint monitoring system for the environmental and socio-economic strategic targets is therefore, like the Sea Basin Strategy Document, 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 Sea Basin Strategy Document. This first version of the "Sea Basin Strategy Document" 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 CSBD monitoring system, which is the subject of Annex 1 of the monitoring system. We can include the

improvements for the second cycle proposed in this annex1 in relation to the assessment of the GES deviation or the level of challenge that may have been made at the scale of the different vocation zones of the coastline. This is the purpose of the table below.

Issues	Overall assessment at the scale 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	Not rated	Not applicable	About 70% of the schemes operational, and 30% not operational but expected to be at the end of this cycle
OM	Overall low GES gap	Average	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 of the three schemes are operational, but the third is still to be set up and will therefore not be operational in the next cycle
EC	Overall high GES gap	Average	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 applicable	No specific monitoring system targeted at this issue
Eut	Overall low GES gap	Good	Three out of four schemes operational and the fourth not operational but expected to be at the end of this cycle
Cont	Overall average GES gap	Average	Two thirds of the schemes operational and one third not operational but expected to be at the end of this cycle
ENI	Overall low level of concern	Good	Monitoring programme fully under development
Int	Overall medium level of concern	Good	Just over half of the schemes are operational and the remainder are non-operational but should be by the end of this cycle
Hyd	Not rated	Not applicable	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

operational by the end of 2026.

¹ 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.

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.**

<p>Operationality of monitoring of negative or uncertain impacts - reading on monitoring indicators linked to socio-economic objectives</p>	<p>On the MED side, 11 socio-economic actions are likely to present as negative (18 impacts) or uncertain (65 impacts). In the monitoring system, these actions refer to 27 monitoring indicators linked to the socio-economic objectives. Their operationality can be approached according to the typology and with the following results for the 27 indicators concerned.</p> <div data-bbox="507 616 1042 840"> <p>Use of colour for indicators according to Annex 3a: Indicators and data collection devices - "Activities, uses and public policies" section</p> <p>Green Collection device and Data producer/concentrator</p> <p>Orange In the first cycle, the relevance of this indicator will be studied with regard to the data accessibility conditions and/or the feasibility of programming a dedicated collection system <u>or</u> Collection device not completed</p> <p>Red Indicators to be defined</p> </div> <div data-bbox="1050 542 1479 855"> <p>Indicators for monitoring SEOs</p> <table border="1"> <caption>Indicators for monitoring SEOs</caption> <thead> <tr> <th>Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Green</td> <td>41%</td> </tr> <tr> <td>Orange</td> <td>59%</td> </tr> <tr> <td>Red</td> <td>0%</td> </tr> </tbody> </table> </div>	Category	Percentage	Green	41%	Orange	59%	Red	0%				
Category	Percentage												
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<p>Operationality of monitoring of negative or uncertain impacts - reading on monitoring indicators linked to environmental targets</p>	<p>On the MED side, the 83 negative and uncertain impacts concern 15 issues out of 17 (only Air and Knowledge are not concerned), with between 1 and 11 impacts per issue. The main issues concerned are HB (11 incidences), Int (10 incidences) PC, De (8 incidences), Cont, Hyd (7), MT, OM (6), EC and ENI (5). Other issues are impacted less: Br (3 incidences), RT, Eut, Pay (2 incidences) and Ris (1 incidence).</p> <p>In the monitoring system, the issues related to the biocenosis and the pressures refer to 78 monitoring indicators linked to the environmental targets. Their operationality can be approached according to the typology and with the following results for the 78 indicators concerned.</p> <div data-bbox="507 1249 1010 1512"> <p>Use of colour for indicators according to Annex 3b: Focus on the objectives Environmental (ET), Good Ecological Status (GES) criteria and the Economic and Social (AES)</p> <p>Green Indicator without modifications by 2026 <u>or</u> No follow-up required (as already in place elsewhere)</p> <p>Orange</p> <p>Red Indicator to be created by 2026</p> <p>Violet Not in the annex</p> </div> <div data-bbox="1018 1227 1479 1512"> <p>Indicators for monitoring ETs</p> <table border="1"> <caption>Indicators for monitoring ETs</caption> <thead> <tr> <th>Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Green</td> <td>35%</td> </tr> <tr> <td>Orange</td> <td>15%</td> </tr> <tr> <td>Red</td> <td>17%</td> </tr> <tr> <td>Violet</td> <td>17%</td> </tr> <tr> <td>Not included in the Annex</td> <td>16%</td> </tr> </tbody> </table> </div>	Category	Percentage	Green	35%	Orange	15%	Red	17%	Violet	17%	Not included in the Annex	16%
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Not included in the Annex	16%												

The monitoring of socio-economic actions with negative or uncertain environmental impacts seems to be less operational from the point of view of ET indicators than from the point of view of SEO indicators. In fact, barely 35% of them have an indicator that is already operational (No change by 2026 or No monitoring required under the Sea Basin Strategy Document because it is being carried out elsewhere) and 15% are 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 Sea Basin Strategy Document. It should also be noted that it is not possible to comment on almost 33% of the indicators, as they are not included in Annex 3b of the monitoring scheme.

In addition, for MRE, ports and fisheries/aquaculture, which are the main activities concerned by negative and uncertain impacts, the number of specific indicators and their operational character differs greatly for these three activities:

- for MREs, a single operational indicator;
- for ports, three indicators, two of which are operational;
- for fisheries/aquaculture, many more indicators (14) but not very operational to date (33%).

Attention should therefore be paid to strengthening the monitoring of the impacts of these activities, by extending the specific indicators (MRE) and/or improving their operability (fisheries/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

programmes on the environment² establishes the principle of an environmental assessment prior to their adoption (or "ex-ante" assessment) of those that are likely to have significant effects on the environment and which set the framework for subsequent decisions. The Sea Basin Documents (Documents Stratégiques de Façade - SFDs) meet this definition and must therefore be subject to such an assessment, as mentioned in Article R122-17 of the Environment Code, which lists the various plans and programmes concerned.

The purpose of this environmental assessment is to ensure that the choices that have been made are relevant with regard to the environmental issues at stake; this is achieved by assessing the positive and negative impacts in a predictive manner, and by proposing, if necessary, a set of measures to avoid, reduce and 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 Sea Basin Strategy Documents - recalled below - gives this SEA certain specific features:

(1) it pertains to a strategy document in the field of sustainable development at sea, which therefore pursues environmental targets. As a result, the initial state of the environment and the objectives to be achieved in this area are consubstantial with the Sea Basin Strategy Document, through its marine environmental component, constituted by the APME (Action Plan for the Marine Environment);

(2) due to the integrative nature of the Sea Basin Strategy Document, which constitutes the implementation of two European directives and the fact that the environmental component was drawn up earlier – the APME having been the subject of an initial implementation cycle prior to the introduction of the Sea Basin Strategy Documents – the approach is therefore part of an iterative consultation process since the first cycle of the APME has already been submitted to the environmental authority for its opinion;

² 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.

- (3) the fact that the Sea Basin Strategy Document was developed in two stages - strategic and then operational
- each of them is subject to an environmental assessment, the operational one, which is the subject of this report, benefits from the feedback of the Environmental Authority on the strategic one;
- (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 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 kinds and result both from the nature of the programme evaluated - the operational part of the Sea Basin Strategy Document and in particular its action plan (DPA) - and from the fact that

feedback from the Environmental Authority (EA) on the environmental assessment of the strategic component of the SFD3.

a) A more accurate assessment of significant effects

The environmental assessment carried out by EPICES & ASCA on the strategic component of the Sea Basin Strategy Documents identified a large number of potential impacts of this planning document, but did not draw conclusions on its ability to promote the achievement of Good Ecological Status (GES) by 2026 at the latest 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 Sea Basin Strategy Document 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 spatialization of the analysis, i.e. to complete the overall assessment at the scale of the entire maritime coastline with an assessment of the impacts at the scale of each vocation zone defined during the first phase of the preparation of the Sea Basin Strategy Document;
- 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 Ecological Status (deviation from GES) or in terms of the level of issue if GES is not defined;
- the third is to look at the nature of the identified impacts (positive or negative) and associate with them 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.), making it possible to better compare and analyse them in a global 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 Sea Basin Strategy Document 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 Sea Basin Strategy Document, the stakeholders in the front line were led to question the coherence of the two types of objectives included in this planning document (environmental targets 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 Sea Basin Strategy Document is therefore central to the development of its operational component, and the environmental assessment of the Sea Basin Strategy Document must take this into account. Two methodological approaches were used to promote this more integrated approach:

- the first is to seek to analyse the overall impact of the Sea Basin Strategy Document'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;

³ Opinions n°2018 104, 2018 105, 2018 106 and 2018 107 of 20 February 2019.

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

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 Sea Basin Strategy Document, 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 Covid-19 . 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;
- 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.

⁴ The summary results of these different analyses carried out in parallel with this SEA are provided in Annex 6 of this 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 an extension 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 Sea Basin Strategy Document, 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 Sea Basin Strategy Document and the context in which it was

3.1. Origin and development of the Sea Basin Strategy Documents

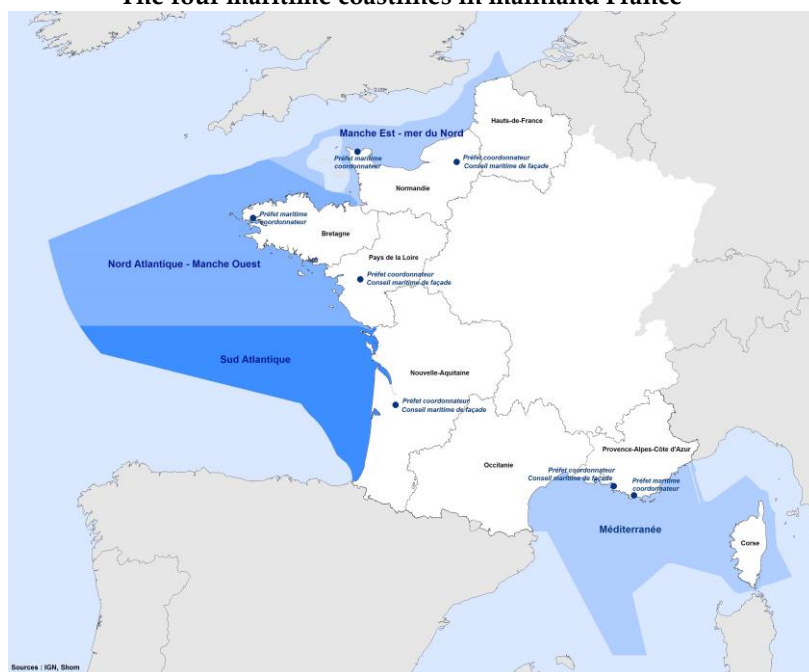
With its maritime and coastal areas, France has a remarkable natural heritage and a significant potential for socio-economic development. The sea and coastline are already subject to numerous uses, but they are also subject to numerous pressures due to climate change, land-based pollution or the impact 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 overseas maritime basins, a planning document – the Sea basin Strategy Document or the overseas maritime basin – must specify the conditions for implementing the national strategy, taking account of local specificities. It will include spatial planning in the form of a designated uses map of maritime spaces. In mainland France, the Sea basin Strategy Document is drawn up by the State in consultation with the maritime and coastal stakeholders meeting within the Sea Basin Council. It is subject to prior consultation with the public.

The establishment of Sea basin Strategy Documents is part of two common initiatives at European level, which are the subject of the "marine strategy" and "maritime spatial planning" framework directives.

The consultation with the public concerns the proposed vision for the coastline. It is a prerequisite for the definition of the Sea basin strategy. It took place for two months from 26 January 2018.

The four maritime coastlines in mainland France



The legal and political framework of the Sea Basin Strategy Document (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 has a presence 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. The aim is 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 Environment 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 Sea basin Strategy Documents and maritime basin strategy documents.

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 "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 Action Plans for the Marine Environment 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 documents are the implementation of these two directives. As such, they include elements of maritime spatial planning and the Action Plan for the Marine Environment.

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. They include 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 will summarise for the general public the issues at stake and will specify in particular 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 determined 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 Sea basin Strategy Documents are intended to provide guidelines for everything that impacts upon the sea and the coastline in 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 (River Basin Management Plan), 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 Document is subject to an **obligation to take into account** any terrestrial project, plan or programme that has an influence on the sea, and is obliged to be **compatible with** urban planning documents (coastal SCOTs, PLUs or equivalent documents). For projects, plans and programmes that would be located exclusively at sea, this obligation becomes a requirement of **compatibility** in all cases.

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

- the existing situation, the issues at stake and a draft vision for the future of the coastline in 2030; (part 1)
- the definition of strategic targets from an economic, social and environmental point of view and the associated indicators; they are accompanied by a designated uses 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 Sea Basin Strategy Document (Sea Basin Strategy Document) constitute the "**Sea basin strategy**". The latter was developed in 2018 and was subject to an initial strategic environmental assessment. Following consultations, this Sea basin strategy was officially adopted in each coastline in September/October 2019.

Parts 3 and 4, namely the monitoring system to assess compliance with the objectives and the action plan, which sets out the implementation programme to achieve the previously set objectives, constitute the **operational part** of the Sea Basin Strategy Document. The latter was developed between October 2020 and January 2021 and is the subject of a second Strategic Environmental Assessment of the Sea Basin Strategy Document. **This report concerns this second SEA and therefore focuses on the operational part of the Sea Basin Strategy Document.**

The process of developing Sea Basin Strategy Documents

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 coordination 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 coastline administrative commission, the composition of which is set by inter-prefectoral order 49/2016 of 9 June 2016, and on the Sea Basin Council (CMF), a consultation body provided for by article L.219-6-1 of the 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 Sea Basin Strategy Document 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.

The process of developing the Sea Basin Strategy Document 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 Sea Basin Strategy Document, not only by the State but also by local authorities and other partners, and by the implementation of European and international policies. The Water and Biodiversity Directorate (DEB) has contributed to this inventory by carrying out a survey of actions

and international coastlines in May 2019⁵;

- analysis of the sufficiency of these existing actions in relation to the achievement of the strategic targets set out in the first part of the Sea Basin Strategy Document. This analysis, conducted in each coastline

according to the experts, does not constitute a robust evaluation of the capacity of existing actions to achieve the objectives set, and generally concludes that existing actions need to be reinforced by new ones. 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 the sufficiency analyses carried out on the coastline, (2) the proposals for new actions

⁵ 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.

⁶ Which would have been methodologically very difficult to achieve anyway.

arising 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 DREALs, the MTES departments and associated experts (OFB in particular). Six one-day national meetings were held from November 2019 to January 2020;

- a coastline 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 1st July 2020;

- following this national harmonisation, a new version of the environmental action plan was sent by the MTES to the coastlines 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 for the coastline 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 CNP Bleu in December 2020.

Then, in relation to the **socio-economic actions**, the elaboration process can be described by the following steps:

- 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 DIRM, 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, the latter having been stabilised later.

3.2. The particular context of the Mediterranean coast

At the level of the Mediterranean coastline, the preparation of the Action Plan began on 18 October 2019 with an initial meeting of the members of the CMF to identify the work priorities and the courses of action relating to certain strategic targets included in the coastline strategy, as well as to validate the methods of future association (working method, actors to be associated).

A series of workshops on the whole coastline, according to the modalities discussed on 18 October, then took place in November 2019 over six half-days, in Perpignan, Montpellier, Marseille, Nice, Ajaccio and Bastia. During the workshops, a spatialization of the actions was proposed to the stakeholders per vocation zone: they were thus led to compare this list of actions with the reality of the issues in their territories, to validate the spatialization that was made and finally to amend or specify the content of each action. The permanent frontage committee validated the minutes of these workshops in December 2019.

Following the national harmonisation work between coastlines on the environmental aspects, the State services and the technical services of the local authorities were brought together in March 2020 to validate the piloting and partnerships of the actions.

A final stakeholder workshop was held by video conference on 6 October 2020, and the draft plan was presented to the Administrative Commission on 8 October 2020. Finally, a finalisation meeting between the DREALs, DDTMs and DIRM was organised on 15 October 2020.

3.3. The operational component of the Sea Basin Strategy Document for the Mediterranean coast

This draft report was prepared without a complete version of the action plan in its "mock-up" form. The impact analysis was carried out on the basis of the V8 version of the action sheets provided on 8 December 2020.

The summary of the action plan as provided to us - the "Action Plan Structuring" file dated 16 November 2020 - comprises six main parts:

1. Adapting the coastline and its activities
2. Managing fisheries resources: supporting the fishing and aquaculture professions
3. Protecting emblematic species and spaces
4. Structuring, coordinating and promoting innovation in ports, maritime transport, nautical and naval industries
5. Educate, raise awareness, provide training throughout life
6. Reducing litter on our coastline and in our sea

Each of these parts includes both environmental and socio-economic actions, reflecting a desire to achieve an integrated approach to the action plan. The presentation of impacts in Chapter 5 reflects this organisation of the action plan.

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

3.4.1 ARTICULATION OF THE ACTION PLAN / RIVER BASIN MANAGEMENT PLAN

The Master Plan for Water Development and Management (River Basin Management Plan) 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 Sea Basin Strategy Document is the implementation document for the MSFD, which aims to achieve or maintain good environmental status of marine waters on European territory, and which has been implemented in France through the Action Plans for the Marine Environment (APME) initiated in 2012 and integrated into the Sea Basin Strategy Document 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 a 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 Plan for the Marine Environment (APME) into the Sea basin Strategy Documents.

This technical note specifies in particular:

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

- reciprocal participation of the de-concentrated 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 Sea Basin Strategy Documents and the DIRMs in the technical secretariats responsible for drawing up the River Basin Management Plans;
- reciprocal information of the Basin Committees (BC) and the Maritime Councils of the coastlines (MCF) on the River Basin Management Plans and Sea Basin Strategy Documents 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 Sea Basin Strategy Document monitoring system and the River Basin Management Plan monitoring programme ;
- articulation of the environmental component of the strategic targets and action plans of the SFDs with the orientations of the River Basin Management Plan(s) and their programme of measures. This linkage involves in particular (i) the partial coupling of the timetables for the action plans of the Sea Basin Strategy Document, the River Basin Management Plans and their programmes of measures, (ii) the categorisation of the sources of pressure on the marine environment targeted by the strategic targets and action plans of the Sea Basin Strategy Document and the definition of the associated measures and actions in the programmes of

River Basin Management Plan(s) measures and Sea Basin Strategy Document action plans. Three types of pressure sources were thus defined: sources of pressure giving rise to measures that are only detailed in the River Basin Management Plans 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 Sea Basin Strategy Documents (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 Sea Basin Strategy Documents and in the River Basin Management Plans and/or their programmes of measures (e.g. loss of functional sea bird habitats in coastal wetlands), (iii) the setting of complementary targets associated with the environmental targets of the BSDs and concerning the River Basin Management Plans;

— articulation of the environmental component of the status of the existing Sea Basin Strategy Documents 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 Sea Basin Strategy Document 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 Sea Basin Strategy Document and the River Basin Management Plan;

(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 Mediterranean coastline level, the CMF involves members of the Basin Committee, which ensures good consistency between the Sea Basin Strategy Document and the River Basin Management Plan. Joint work between the technical secretariats of the APME and the Rhône Méditerranée basin was also carried out to ensure that the documents were complementary.

The Rhone-Mediterranean River Basin Management Plan and its programme of measures contribute in particular to achieving the environmental targets of the Sea Basin Strategy Document relating to the reduction of land-based inputs to the sea, the preservation of coastal marine biodiversity through the regulation of pressures linked to uses at sea and ecological restoration, the fight against invasive species and the reduction of land-based litter in marine waters.

The Sea Basin Strategy Document specifies the different provisions of the River Basin Management Plan and measures of the programme of measures that contribute to the implementation of the Sea Basin Strategy Document and the achievement of its objectives. Among others, the following can be highlighted:

— that certain guidelines and provisions of the draft River Basin Management Plans for the Rhône Méditerranée and Corsica for 2022/2027 contribute to the achievement of some twenty environmental targets of the Sea Basin Strategy Document in the following areas: benthic habitats, sea birds, non-indigenous species (NIS), the fight against eutrophication, the integrity of the sea-floor, hydrographic conditions, contaminants and litter;

— that some of the measures of the WFD 2022/2027 programme of measures will contribute to the achievement of the following objectives of the Sea Basin Strategy Document: (Avoid the physical degradation of Mediterranean phanerogam meadows and coralligenous vegetation), D05OE3 (Do not increase nutrient inputs in areas that are impacted very little or not at all by eutrophication), D07OE3 (Limit the pressures and obstacles to sea-land connectivity in estuaries and coastal lagoons), D07OE4 (Ensure an adequate volume of freshwater in the coastal sector all year round, D08OE4 (Ensure sufficient freshwater in coastal areas throughout the year, in particular by reducing water abstraction levels (groundwater and surface water) in the catchment area), D08OE1 (Reduce contaminant inputs due to rainfall from municipalities, coastal settlements and ports), D08OE3 (Reduce discharges of liquid effluents (black water, grey water), hydrocarbon residues and hazardous substances from commercial, fishing and recreational

vessels), D08OE7 (Reduce discharges of land-based contaminants into the sea, excluding dredging/reclamation), D09OE1 (Reduce direct transfers of microbiological pollutants, in particular to bathing areas and shellfish production areas).

3.4.2 ARTICULATION OF Sea Basin Strategy Document WITH THE SCHEMA REGIONAL D'AMENAGEMENT, DE DEVELOPMENT DURABLE AND'ÉGALITY OF TERRITOIRES (SRADDET) - PLAN D'AMENAGEMENT ET DE DEVELOPMENT DURABLE DE LA CORSE (PADDUC)

L'PROGRESS OF THE SRADDET - PADDUC

The progress of the SRADDET⁷ (Occitanie and Provence-Alpes-Côte d'Azur) and the PADDUC (Corsica) on the MED coast is heterogeneous between the three regions:

- In Corsica, after a long period of concerted preparation (2010 to 2015), the Assembly of Corsica approved the PADDUC, in its initial version, on 2 October 2015. It was drawn up in three main stages⁸ by (1) adoption of the development model, the main guidelines and the strategy for drawing up the PADDUC in July 2012, (2) adoption of the PADD, the technical version of the chosen development model, in January 2014 and (3) presentation of the Corsican Development Plan in September 2014. The PADDUC was recently amended on 21 October 2020 to re-establish the map of Strategic Agricultural Areas (ESA).
- In Provence-Alpes-Côte d'Azur, after a period of concerted preparation (end of 2016 to end of 2019), the Provence-Alpes-Côte d'Azur Regional Council adopted the SRADDET on 26 June 2019 and it was approved by prefectural decree on 15 October 2019. The main stages in the preparation of the SRADDET are as follows: (1) the SRADDET preparation process was launched on 3 November 2016 by the regional assembly, (2) three main guidelines were defined and validated on 16 December 2016, (3) 2017 was the year of consultation and co-construction with the regional partners and the population of the objectives, the spatial project and the rules and (4) in 2018, the co-construction process continued until the SRADDET was approved.
- In Occitania, after 2 years of exchanges and co-construction with the territories, citizens and actors in the field, the draft SRADDET of the Occitania region was adopted at the Plenary Assembly on 19 December 2019. To date, this project has still not been approved by a prefectural decree. The main stages in the preparation of the SRADDET are as follows: (1) The consultation was launched on 02 October 2017 and gathered more than 80 participants, (2) Between the end of 2017 and September 2018, a series of territorial workshops and a day with youth were held. A "citizen MOOC" was set up between the end of 2017 and the beginning of 2018 based on a dozen short thematic videos to enable all citizens to acquire the prerequisites for optimising citizen participation, (3) The official referral of the territories on the SRADDET rules in December 2018

⁷ Which absorbs the Regional Litter Prevention and Management Plan (PRPGD), the Regional Climate Air and Energy Plan (SRCAE), the Regional Plan for Ecological Coherence (SRCE), the Regional Infrastructure and Transport Plan (SRIT), the Regional Intermodality Plan (SRI)

⁸ See the Synthesis of the PADDUC

THE LINK BETWEEN THE PADDUC AND THE Sea Basin Strategy Document MED

The articulation between the **PADDUC9(Corsica)** and the Sea Basin Strategy Document MED has the following characteristics:

- The PADDUC is a document which was produced and adopted well before the reflections on the Sea Basin Strategy Documents and more specifically that of MED. Indeed, as the PADDUC was adopted on 2 October 2015, it makes no mention of the Sea Basin Strategy Document. Only the SEA of the PADDUC mentions that the document should be compatible with the objectives of the Sea Basin Strategy Document of the Mediterranean coast.
- The strategic orientations of the PADD part of the PADDUC are articulated in three main parts: 1 - Making society, 2 - Diversifying the economy for sustainable territorial development, 3 - Planning for balanced development and ecological and societal transition. It is the third part that speaks most strongly and specifically about the sea and the coastline. Indeed, two strategic orientations refer directly to the sea and the coastline:
 - Strategic guideline 11 - Towards controlled and integrated urban development and more specifically its operational objective 11.2.4- ensure a balance in the spatial distribution of urbanisation between the areas close to the shore, the coastal hinterland and the interior. This objective recalls the respect of the "Coast Law" and the limitation of excessive urbanisation of the "Espaces Proches du Rivages";
 - Strategic Direction 13 - Promoting Integrated Coastal Zone Management and more specifically the strategic directions:
 - 13.1 - Ensure the preservation of biological and ecological balances, sites and landscapes of the coastal heritage, (1) by strengthening the MPAs, (2) by specifying and strengthening the law "(3) ensuring greater coherence in the preservation of coastal land and sea areas;
 - 13.2 - Take into account coastal risks and manage the coastline;
 - 13.3 - Develop activities in an integrated manner, with a view to preserving the environment and public access to the sea, giving priority to the development of economic activities requiring immediate proximity to the water in coastal areas and their integration into the environment.
- Two documents are annexed to the PADDUC and deal specifically with the coast and the sea:
 - The Littoral booklet (Annex 3 of the PADDUC) specifies the methods of application of the "Littoral" law with regard to local geographical particularities in order to facilitate its application in urban planning documents in Corsica;
 - The individualised chapter valid as a Sea Development Plan (Annex 6 of the PADDUC). The SMVM has three components: (1) the thematic guidelines for the development of the sea, (2) the equipment and development projects linked to the sea and (3) the prescriptions of the individual chapter of the SMVM. It is a land-use planning and knowledge-building tool that aims to better integrate and enhance the coastline. It is also a zoning tool, aiming at the

⁹ All the documents of the PADDUC can be found on the following website: https://www.aue.corsica/Le-Padduc-dans-son-integralite_a47.html

reconciling the development of sea-related activities with the preservation of natural or remarkable areas. It is the closest thing to the objective of a Sea Basin Strategy Document as it also proposes land use maps on the same themes as those covered by the Sea Basin Strategy Document. The vocations are as follows: protection of the environment and of the biological balance on land and in the sea, agriculture, aquaculture, professional fishing activities, seaside activities, pleasure boating, leisure and industrial port activities / maritime safety and navigation.

- On the Sea Basin Strategy Document side, the description of each Sea Basin Strategy Document action reports on the links with the objectives of the PADDUCD where relevant.

THE LINK BETWEEN THE SRADDET PROVENCE-ALPES-CÔTE D'AZUR AND THE SEA BASIN STRATEGY DOCUMENT MED

The link between the SRADDET Provence-Alpes-Côte d'Azur ¹⁰ and the Sea Basin Strategy Document MED has the following characteristics:

- The SRADDET is an enforceable document with a hierarchy of compatibility with the River Basin Management Plan and consideration with the Sea Basin Strategy Document. It is in this capacity that the Sea Basin Strategy Document is mentioned in the draft SRADDET (only once, however): " Furthermore, the SRADDET will have to take into account the Sea Basin Strategy Document (Sea Basin Strategy Document) drawn up within the framework of the Conseil Maritime de Façade (Sea Basin Council) led by the Regional Prefect and the Maritime Prefect. This Sea Basin Strategy Document is part of the implementation, at national level, of two European directives: the Marine Strategy Framework Directive (MSFD) and the Maritime Spatial Planning Framework Directive (MSP)
- The 68 objectives of the SRADDET are based on three guidelines: 1 - Strengthen and perpetuate the attractiveness of the regional territory, 2 - Control the consumption of space, strengthen the centralities and their networking and 3 - Combine equality and diversity for united and welcoming territories. It is the first guideline that speaks most strongly and specifically about the sea and the coast.
- The SEA of the SRADDET Provence-Alpes-Côte d'Azur produced in June 2019 analysed the articulation with the Sea Basin Strategy Document. The following points emerge:
 - On risk prevention and coastline management:
 - Objective 9 invites territories to engage in integrated coastal zone planning and management;
 - Objective 10 aims to improve the territory's resilience to risks and climate change and to guarantee access to water resources for all;
 - Objectives 11, 16, 37, 47, 48 and 50 establish a set of measures to anticipate and reduce natural risks.
 - On knowledge, research and innovation as well as education and training for the maritime professions:
 - Objective 20 invites the territories to facilitate and support the emergence of tourism based on digital innovation;
 - Objective 13 states the need to strengthen and disseminate knowledge of biodiversity.

¹⁰ all SRADDET documents can be found on the following website: <https://connaissance-territoire.maregionsud.fr/avenir-de-nos-territoires/le-schema-regional/>

- On the sustainable development of economic, maritime and coastal activities and the enhancement of resources:
 - Objectives 1 and 3 aim to strengthen the major ports through better multimodal connections;
 - Objective 2 calls for a port and river strategy and the continuation of the "clean ports" label;
 - Objective 9 aims to promote the economic development of maritime activities in line with sustainable and shared management of the sea;
 - Objective 19 provides for the development of offshore floating wind farms;
 - Objective 50, where fisheries reserves are included in the blue framework.
- The protection of environments, resources, biological and ecological balances and the preservation of sites, landscapes and heritage:
 - Objectives 17, 47, 48 and 54 aim to protect landscapes, heritage, landscape features from urbanisation and the living environment;
 - Objective 14 takes up the quantitative objectives of the River Basin Management Plan;
 - Objective 50 identifies the green and blue framework as a structuring element of the regional territory, which should determine upstream planning and development choices and the preservation of all its components. It sets targets for optimal rehabilitation.
 - Objective 57 also envisages reasoned accessibility to the sites by collective or soft transport models connecting beyond the multimodal exchange poles (PEM) and to reduce the environmental impacts of tourism development.
 - Objectives 11, 16, 37, 47, 48 and 50 establish a set of measures to anticipate and reduce natural risks.

In conclusion, the SEA argues that the SRADDET takes very good account of the Sea Basin Strategy Document Méditerranée in terms of both objectives and rules.

- On the Sea Basin Strategy Document side, the description of each Sea Basin Strategy Document action reports on the links with the objectives of the SRADDET where relevant in a "Complementary Public Policies" section.
- The document does not explicitly mention an association of the DIRM MED in the elaboration of the SRADDET.

THE LINK BETWEEN THE SRADDET OCCITANIA AND THE SEA BASIN STRATEGY DOCUMENT MED

The articulation between the SRADDET Occitanie¹¹ and the Sea Basin Strategy Document MED has the following characteristics:

- The Sea Basin Strategy Document is only mentioned once in the SRADDET: *"The National Strategy for the Sea and the Coastline, supported by the State, and the Mediterranean Sea basin Strategy Document (Sea Basin Strategy Document), drawn up with the stakeholders of the sea, aims to reconcile the development of activities and the preservation of natural coastal and marine areas. The Region's objectives are in line with its guidelines for preserving and restoring the coastline and maritime area, in particular by preserving and restoring the ecological continuities and reservoirs of the land-lagoon-sea system. This paragraph only describes the objectives of the Sea Basin Strategy Document and states that the Region is in line with them, but without specifying how.*

¹¹ all SRADDET documents can be found on the following website: <https://www.laregion.fr/-occitanie-2040->

- The 27 thematic objectives of the SRADDET are structured around three challenges: 1 - The challenge of attractiveness in order to welcome people in a good and sustainable way, 2 - The challenge of cooperation in order to strengthen territorial solidarity and 3 - The challenge of influence for a virtuous development of all territories. All the challenges deal with the sea and the coastline. The thematic objectives concerned are
 - Objectives 1.1 - Mobility, 1.8 - Transport consumption and 3.7 - Logistics aim to increase the modal share of maritime freight;
 - Objective 1.3 - Housing aims to support the transformation of seaside resorts (energy renovation, adaptation to coastal risks, etc.) ;
 - Objective 1.4- Land use aims in particular to achieve zero net artificialization on a regional scale by 2040. This objective of zero artificialization is nevertheless more of an incentive than a prescription, according to the opinion of the EA issued on 22/04/2020;
 - Objective 1.7 - Consumption of building aims to promote the deployment of thalasso-thermal systems on the coast;
 - Objective 1.9 - MRE production aims in particular to promote the installation of commercial floating wind farms at sea (2030 target : 1.5 GW) ;
 - Objective 2.7 - Biodiversity aims in particular to preserve the coastline and the marine environment;
 - Objective 2.9 - Litter aims in particular to encourage the creation of litter recovery channels in fishing ports;
 - Objective 3.5- Blue economy aims in particular to develop the blue economy and coastal tourism while respecting the challenges of biodiversity preservation and restoration;
 - Objective 3.6 - Resilience aims in particular to make the coastline a showcase for resilience.
- On the Sea Basin Strategy Document side, the description of each Sea Basin Strategy Document action reports on the links with the objectives of the SRADDET where relevant in a "Complementary Public Policies" section.
- The document does not explicitly mention an association of the DIRM MED in the elaboration of the SRADDET.

3.4.3 LINK BETWEEN THE SDF AND OTHER PLANS AND PROGRAMMES

SEA AND COASTAL PLAN FOR THE REGION PROVENCE-ALPES-CÔTE D'AZUR

The Provence-Alpes-Côte d'Azur region's Sea and Coastal Plan was published in June 2019. It proposes a number of ambitions for 2030, broken down into five horizons: (1) an asserted maritime identity, (2) a maritime sector of excellence, (3) a successful energy and ecological transition, (4) attractive maritime professions, and (5) optimised governance and sources of funding. Associated with these five horizons is a list of priority actions to be implemented within 3 years and another list of actions to be implemented within 10 years.

The CMF is mentioned in the context of Horizon 5 as a forum for discussion and consultation between the many maritime stakeholders, which defines the guidelines for the sustainable development of maritime activities on the scale of the coastline, particularly through the Sea Basin Strategy Document.

In addition, some priority actions to be undertaken in the next 3 or 10 years are common to those of the Sea Basin Strategy Document Action Plan: deployment of the "Clean Ports" certification, installation of two commercial floating wind turbine projects at sea, etc. Many other actions appear to be complementary to those of the Sea Basin Strategy Document DPA, in the sense that they could contribute to achieving the objectives of the Sea basin strategy in many areas:

protection of benthic habitats (Posidonia Plan), adaptation to climate change, water sports, coastline management, training for jobs at sea, etc.

COASTAL PLAN 21 FOR THE OCCITANIA REGION

Launched on July 2016, the Coastal 21 plan aims to shape the coastline of the 21st century. In terms of method, a consultation of stakeholders and the collection of written contributions should make it possible to draw up recommendations to guide the action of the State and the Occitanie region on the coast, through calls for projects launched within the framework of the CPER. The Plan thus appears to be more of a financial tool than a strategic document, and it is therefore difficult to analyse its articulation with the Sea Basin Strategy Document given this different nature.

REGIONAL STRATEGY FOR THE INTEGRATED MANAGEMENT OF THE COASTLINE OF THE OCCITANIA REGION

The regional integrated coastline management strategy "Occitanie Coastline 2018 / 2050" was published by the Prefecture of the Occitanie region in July 2018. A document that is specific to the State, it sets out a list of principles and recommendations for managing the coastline, but does not constitute a strategic plan complete with objectives and actions. It is therefore difficult, as with the Coastal Plan 21, to analyse its articulation with the Sea Basin Strategy Document Action Plan.

OTHER PLANS AND PROGRAMMES

Several other plans and programmes expire in 2021, and the next generation is being developed. They are therefore not yet available but will have to take into account the Sea Basin Strategy Document. These include:

- the flood risk management plan (PGRI) for the Rhône Méditerranée basin;
- the management plan for migratory fish (PLAGEPOMI) for the Rhône Méditerranée basin;
- the regional plans for economic development, innovation and internationalisation (SRDEII) of the Occitanie and Provence-Alpes-Côte d'Azur regions;
- the regional tourism and leisure development plans (SRDTL) of the Occitanie, Provence-Alpes-Côte d'Azur and Corsica regions.

4. The environmental issues of the coastline

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 APME (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 Sea Basin Strategy Document, were mobilised within this production:

- the scientific and technical synthesis of the initial assessment of the ecological status of marine waters and the environmental impact of human activities on these waters with regard to the 11 descriptors of the MSFD (Annex 2 to the Sea Basin Strategy Document);
- the files associated with the environmental targets (Annex 4 to the Sea Basin Strategy Document, pages 51-284);
- the map of environmental issues, including the mapping of ecological issues as well as the description of sectors with ecological issues identified in the French Mediterranean during Cycle 2 of the MSFD (partly in appendix 1 p 299-314);
- the environmental report of the strategic environmental assessment of the coastline 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, that the following table recalls these factors¹² :

¹² It should be noted that this reference framework of 17 issues was discussed and validated by the national SEA steering committee

Category of issues	Acron.	Environmental issues	Correspondence to descriptors MSFD	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-HB	Species distribution and abundance: home range of sedentary bottlenose dolphin groups, seal colonies, feeding areas, other cetaceans
	OM	Sea birds	D1-HB	Species distribution and abundance: nesting, feeding areas, colonies, wintering sites of sea birds and coastal birds, maximum density areas, functional areas
	PC	Fish and cephalopods	D1-HB	Distribution and abundance of species: functional fishing areas (spawning grounds, nurseries), localized populations (benthic invertebrates, elasmobranchs), concentration and migration areas for amphibious fish
	EC	Commercial species	D1-HB	Stock status of commercially exploited fish and shellfish species
	RT	Food webs	D1-HB	Trophic balance
Issues related to pressures on the marine environment	ENI	Non-native species	D1-HB	Non-native species that are invasive or disrupt ecosystems
	Eut	Eutrophication	D1-HB	Human-induced eutrophication
	Int	Sea-floor integrity	D1-HB	Integrity of the sea-floor and artificialization of the coastline
	Hyd	Modification of the hydrographic conditions	D1-HB	Hydrographic conditions
	Cont	Contaminations - chemical and biological	D8 and D9	Chemical contaminants in the environment, phycotoxins, microbiological contaminants
	From	Litter	D1-HB	Amount of floating, shoreline, bottom, ingested litter and micro-litter
	Br	Noise	D1-HB	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 humans	Not relevant	Climatic, natural and industrial risks
	Co	Knowledge	Not relevant	Production of knowledge on environments, species and socio-economic activities

To supplement the initial environmental assessment of the Sea Basin Strategy Document, 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 annexes to the Sea Basin Strategy Document, and applicable vocation area by vocation area, has been developed in order to

to qualify the deviation from good environmental status (GES) by zone¹³.

- 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 spatialized 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, Int, Hyd, De, Br, Air, Ris), or to assess this level based on elements favourable to the issue (case of : Pay, Co).

Thus, the spatialization obtained is the object of a cross between the results on good environmental status given at the scale of the coastline and the specificities of each vocation zone in

the criteria and qualifications are set out in the annexes to the DSF¹⁴.

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

The detailed methodology is presented in Annexes 1 and 2 of the environmental report.

4.2. Issues related to the components of the marine environment

4.2.1. Benthic habitats

LOCALISATION OF HABITATS FACING STRONG CHALLENGES AND ASSESSMENT OF THEIR STATUS ON THE SCALE OF THE COASTLINE

The French Mediterranean is particularly representative of **sedimentary habitats**; they occupy nearly 99% of the shelf and almost all of the abysses. On the continental shelf, muddy and detrital sediments cover almost the entire circalittoral zone. They are usually located from the fine infralittoral sands in the Gulf of Lion and the Posidonia meadows in Provence-Alpes-Côte d'Azur and Corsica up to the limits of the slope. These sediments are important functional areas for many fish species. Some biogenic sedimentary bottom habitats also have very diverse and vulnerable biocenoses. In particular, we should mention the meadows, the maerl and rhodolith associations (present mainly in Corsica and in the Hyères bay, and on smaller surfaces elsewhere in Provence-Alpes-Côte d'Azur) on the detrital bottoms up to about 40 metres, but also the pennatula, *Isidella elongata* gorgonian and ctenoid (or comatula) associations on the silted-up sectors of the plateau beyond 40 metres in depth.

¹³ Annexes 2 and 4 to the Sea Basin Strategy Document are the only studies available to date that have sought to accurately assess the good environmental status of the 11 MSFD descriptors.

¹⁴ Scientific assessment of the status of the GES carried out in 2018 partly in Annex 1 to the Sea Basin Strategy Document (detailed analysis, incorporating assessment criteria) and Annex 4 (summary of results per sheet); distribution of habitats and species at stake by MMN sectors partly in Annex 1.

The *Posidonia* **meadow** habitat of the infralittoral stage is the pivotal ecosystem of the Mediterranean coastal strip. It occupies nearly 900 km² mainly in Corsica and Provence-Alpes-Côte d'Azur. It offers many key ecological functions: stabilisation and oxygenation of sediments, spawning grounds and nurseries, etc. Under certain swell and current conditions, the meadow takes the form of "barrier reefs"

"These are particularly vulnerable habitats.

Reefs represent smaller areas than sedimentary habitats but can extend in three dimensions, particularly at the level of the drop-offs. They support many biogenic habitats that are highly diverse and sensitive. They provide habitats for a wide range of animal species. Several species, which depend on rocky environments, are facing challenges because of their vulnerability: the brown meagre, the dusky grouper, the giant limpet, the flat lobster and the date shell.

The **oceanic slope** with notably the canyons of Lacaze-Duthiers, Cassidaigne, Porto and Valinco and the seamounts of Asinara and Cape Corsica presents a very diversified fixed fauna on the rocky sectors (white, yellow, red and black corals, gorgonians, sponges and oysters). The muddy sectors also present a diversified fauna similar to that observed on the plateau (pennatulas, gorgonians and crinoids), particularly in the Petit Rhône, Couronne and Saint Florent canyons. The abyssal plain consists of fine sediments. Its central part is marked by "topographic highs" formed by salt accumulations. The ecosystems associated with the plain and these landforms are not known.

To measure the state of benthic habitats, the BenthVal indicator quantifies the loss of species abundance between two years sampled during the period 2012- 2016. On the Mediterranean coast, the BenthVal indicator was calculated for a total of 31 stations characteristic of six major types of benthic habitat on loose substrates

Main types of benthic habitats of loose substrates	BenthVal indicator 2012-2016 (The number represents the number of measuring stations)		
	Drop from the housing m	Stability of the state of housing	Increase from the state of the habitat m
Circalittoral sands coastal	10	3	
Coarse sediments - coastal circalittorals	5	2	
Rocks and reefs - infralittoral biogenic	3	1	
Coastal circalittoral silt	3		
Coarse sediments - infralittoral	2		
Infralittoral sands	2		

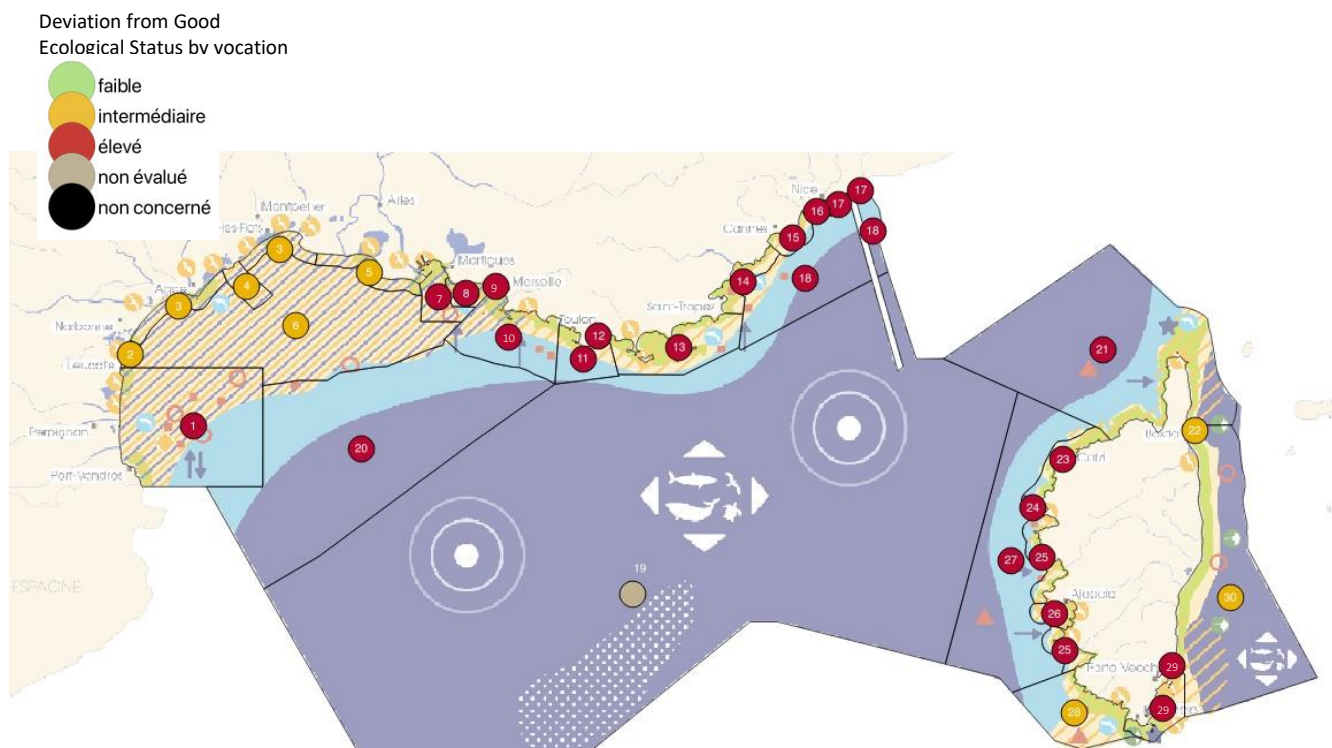
Source - Assessment of the achievement of good environmental status of benthic habitats under descriptors 1 and 6 - Sea Basin Strategy Document Annex 2

For the coastline, the indicator tells us that:

- Overall, all the main types of benthic habitat on loose substrates are in a state of deterioration;
- Some stations measuring they types of habitats in coastal circalittoral sands and sediments and infralittoral biogenic rocks and reefs show evidence of a stable habitat status.

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

BENTHIC HABITAT ISSUE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices
 Background map: Ecological issues in the Western Mediterranean produced by AFB, 2018
 Coordinate system: WSG84 / Pseudo Mercator Edition:
 01/2021, Epices

At the scale of the coastline, in terms of deviation from good status, 8 areas have a deviation from GES classified as "intermediate", 21 areas have a deviation from GES classified as "high" and one offshore area has a deviation from GES that could not be assessed due to lack of data on habitat status. The GES deviation for this issue, which is high overall along the coastline, shows some spatial disparities that can be highlighted:

- Vocation areas located on the Occitanie region's coastline have more areas with a deviation from the GES qualified as "intermediate" (3 out of 4 vocation areas);
- The only coastal vocation zone in the Provence-Alpes-Côte d'Azur region with an GES gap classified as "intermediate" is the Camargue. The same applies to the Gulf of Lion plateau in the offshore areas;
- Corsica's vocation zones with an "intermediate" GES gap tend to be located in the East and South.

For all the areas with an GES gap assessment, the reliability of the results obtained is considered to be low as the GES gap is mainly based on Natura 2000 data and the European Red List classification of habitats where possible, as the GES status could not be assessed on its own.

PRESSURES ON HABITATS

The **main pressures exerted by human activities on benthic** habitats are the following (source: detailed ET data sheets in Annex 4.3 of the Sea Basin Strategy Document):

Benthic habitat type Pressure-generating activity	Intertidal rocky habitats	Subtidal and circalittoral rocky habitats	Sedimentary habitats	Phanerogam and coralligenous beds
Maritime public works	No Yes	No Yes	No Yes	No Yes
Artificialization of the coastline	No Yes	No Yes	No Yes	No Yes
Agriculture and industry	No Yes			No Yes
Professional fishing	Yes Yes	Yes Yes	Yes Yes	Yes Yes
Recreational fishing	Yes Yes		Yes Yes	
Aquaculture				Yes Yes
Extraction of materials			No Yes	
Coastal tourism				Yes Yes
Beach activities and beach use			No Yes	Yes Yes
Boating and water sports				Yes Yes

Caption:

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

4.2.2. Mammals and turtles

LOCALIZATION OF STRONG CHALLENGES CONCERNING MARINE MAMMALS AND TURTLES AND ASSESSMENT OF THEIR STATUS AT THE SCALE OF THE COASTLINE

The French Agency for Biodiversity (now OFB: Office Français de la Biodiversité) in its document presenting the ecological challenges of the coastline shows that the Mediterranean regularly has seven species of marine mammals: large divers (fin whales and sperm whales), bottlenose dolphins, blue and white dolphins, Risso's dolphins and beaked whales. The bottlenose dolphin, a mainly coastal species, is concentrated in the Gulf of Lion, Cap Corse, the Bouches de Bonifacio, and more widely in the Provence-Alpes-Côte d'Azur region. The distribution and abundance of beaked whales is poorly known. The offshore waters are also frequented by loggerhead turtles (in summer).

On the Mediterranean coast, the small number of elements calculated does not allow a quantitative assessment of the achievement of the GES for any group of mammal species

marine¹⁵. However, the lack of a quantitative assessment of the achievement of the GES should not obscure the pressures on these populations. Indeed, the IUCN has classified bottlenose dolphins, fin whales and striped dolphins as Vulnerable, and sperm whales and common dolphins as Endangered (IUCN, 2012). Furthermore, data from the RNE (Réseau National d'Echouage) indicate worrying rates of additional mortality caused by incidental captures, for bottlenose dolphins and blue and white dolphins, and collisions for fin whales.

With regard to turtles, it is difficult in the current state of knowledge to assess quantitatively the achievement of the GES. However, some trends can be identified:

- Analysis of the time series (1990 to 2017) of the RTMMF (Réseau Tortues Marines de Méditerranée Française) observation network shows a high rate of incidental catches, particularly of loggerhead sea turtles;
- The comparison of the status assessment in 2018 with the initial assessment in 2012 and another assessment carried out at national level in 2013 under the Habitats, Fauna and Flora Directive shows a conservation status of the leatherback and loggerhead turtle assessed as "unfavourable poor" on the Mediterranean coast, which would correspond to a failure to achieve the GES under the MSFD. Only the "Range" parameter was assessed as "Favourable" for both species. The parameter "species habitat" was assessed as "Unfavourable" for the loggerhead turtle and "Unknown" for the leatherback turtle.

¹⁵ See Annex 4 "Tables and detailed fact sheets for strategic targets and associated indicators"

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

MARINE MAMMALS AND TURTLES



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices
Background map: Ecological issues in the Western Mediterranean produced by AFB, 2018
Coordinate system: WSG84 / Pseudo Mercator Edition:
01/2021, Epices

According to Annex 4 of the Sea Basin Strategy Document (p108), the GES cannot be assessed for all the marine mammals of the MED coastline.

PRESSURES ON MARINE MAMMALS AND SEA TURTLES

The main sources of pressure exerted by human activities on marine mammals and sea turtles are the following (source: detailed ET data sheets in Annex 4.3 of the Sea Basin Strategy Document):

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. Sea birds

LOCALISATION OF STRONG CHALLENGES FOR SEABIRDS AND ASSESSMENT OF THEIR STATUS

The Gulf of Lion is the main area of concentration of marine avifauna (shearwaters, terns, storm-petrels, gulls and seagulls) in summer and to a lesser extent in winter. The open sea is less frequented except by storm-petrels and pygmy gulls in winter.

The lagoons, islands and islets of the coastline are important areas for the nesting of sea birds. This gives the coastline an important responsibility for the conservation of eight marine species (storm-petrels, yelkouan and scopoli shearwaters, Audouin's gulls, ragged-tailed gulls and yellow-legged gulls, Hansel terns and crested cormorants) and for the long-necked gravelot in the coastal zone.

The analysis of the assessment of good environmental status shows that, according to the following criteria:

- Of the 15 species of breeding sea birds, according to the population abundance criterion, 11 species achieve good status, 3 species are not assessed and one species does not achieve good status: the **Storm petrel**;
- Of the 5 species of coastal shorebirds, according to the population abundance criterion, all species achieve good status;
- Of the 15 sea bird species, according to the criterion of young bird production, 14 could not be assessed and one achieved good status;
- The criterion of abundance of birds at sea (26 species) could not be assessed.

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

SEABIRD ISSUE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices
 Background map: Ecological issues in the Western Mediterranean produced by AFB, 2018
 Coordinate system: WSG84 / Pseudo Mercator Edition:
 01/2021, Epices

At the scale of the coastline, in terms of deviation from good status, 26 areas have a deviation from GES classified as "low", two areas have a deviation from GES classified as "intermediate" and two offshore areas have a deviation from GES that could not be assessed due to the lack of data on the status of sea birds. The deviation from the GES on this issue, which is generally low on the whole of the coastline, shows some spatial disparities which can be highlighted:

- The vocation zones located on the coast of the Occitanie and Provence-Alpes-Côte d'Azur regions present, for all the vocation zones, a deviation from the GES qualified as "low";
- The two vocation zones located in the south of Corsica (the Bouches de Bonifacio) show a deviation from the GES classified as "intermediate". This is because the calculation of the GES gap concerns a limited number of bird species, and of these species, the only one that does not meet the criterion for calculating the gap is the storm-petrel.

The reliability analysis highlights two groups of areas for which the reliability of the results obtained for the GES deviation is:

- Average for the majority of the zones of vocation, this being due, for the zones located on the coast of the Occitanie and Provence-Alpes-Côte d'Azur regions, to a rather high number of evaluated species compensating for the number of non-evaluated species, whereas the zones located in the North, South and East of Corsica concern very few species but are mostly evaluated;

- Low for the vocation zones located on the west coast of Corsica (VZ 23, 24, 25, 26 and 27), this being due to the limited number of species concerned and in part not evaluated, which explains the low reliability of the results.

PRESSURES ON SEABIRDS AND COASTAL BIRDS

The main sources of pressure on sea birds from human activities are as follows (source: detailed ET data sheets in Annex 4.3 of the Sea Basin Strategy Document):

Pressure-generating activity	Sea birds
Coastal tourism	Yes
Beach activities and beach use	Yes
Boating and water sports	Yes
Artificialization of the coastline	No
Professional fishing	No
Power generation	No
Recreational fishing	No

Caption:

✓ Pressure-generating activity for sea birds (most contributory)

✓ Activity dependent on the ecological status of sea birds

4.2.4. Fish and cephalopods

ALL SPECIES 16

LOCALISATION OF STRONG CHALLENGES CONCERNING FISH AND CEPHALOPODS AND EVALUATION OF THEIR CONDITION

The Gulf of Lion is a major sector in the Mediterranean for nurseries and spawning grounds for pelagic fish (sprat, anchovy, sardine, horse mackerel, hake, tuna) and demersal fish (sole, gurnard, mullet, etc.). The edges of the slope are of particular interest for hake, horse mackerel and langoustines. In addition, several species of elasmobranchs with very unfavourable conservation status at global level are present in the marine sub-region (e.g. white skate, angel shark and Mediterranean mantis, shark, basking shark and blue shark). There is also a reported area of black skate capture (also threatened) in eastern Corsica. These species present very strong conservation issues. The offshore waters are also frequented by pelagic fish (bluefin tuna and swordfish). Finally, the Rhône is an important transition zone for certain amphihalines such as shad and lampreys.

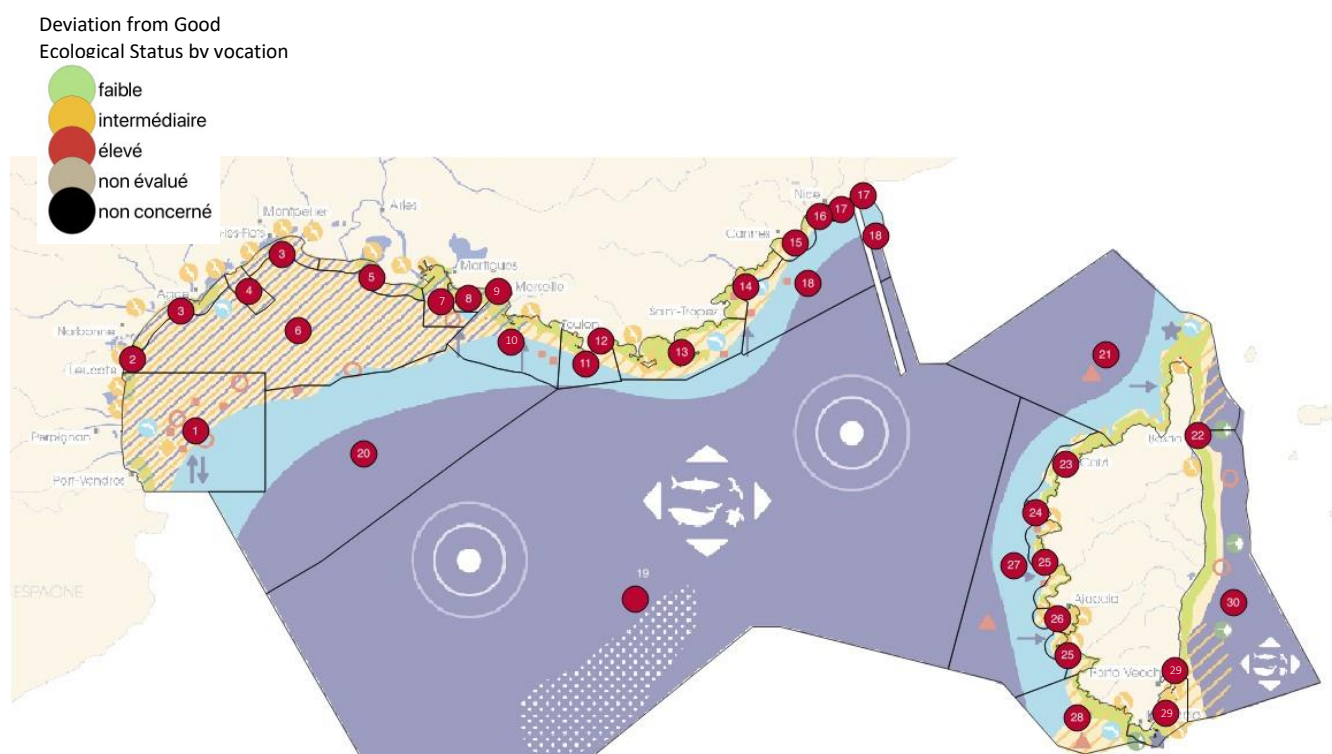
The study of the assessment of good environmental status for fisheries resources shows that it was possible to assess whether or not GES had been achieved for a total of 42 species on the Mediterranean coast (6 species of coastal fish, 5 species of pelagic fish, 28 species of demersal fish and 3 species of amphibious fish), i.e. less than 20% of the list of species identified as relevant at national level for the assessment of the "Fish" and "Cephalopod" components.

¹⁶ Corresponding to descriptor D1 GES

Of the small number of species for which the GES could be assessed, 6 species of coastal fish (i.e. 100% of the total species assessed), 4 species of pelagic fish (i.e. 80%), 10 species of demersal fish (i.e. 35%), and 3 species of amphihaline fish (i.e. 100%) do not achieve the GES. For the amphihaline fish assessed (eel, sea lamprey and Rhone shad), it should be noted that the trends in the overall status are decreasing.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE Vocation ZONES: GAP TO GES

FISH AND CEPHALOPODS ISSUE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices
Background map: Ecological issues in the Western Mediterranean produced by AFB, 2018
Coordinate system: WSG84 / Pseudo Mercator Edition:
01/2021, Epices

Regardless of the vocation zone, there are very 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 in all the vocation zones of the coastline. In addition, the reliability of these results is low (the Occitanie and Provence-Alpes-Côte d'Azur regions and 3 offshore areas) to medium (the Corsican areas and 2 offshore areas) because, for a large proportion of the species at stake identified in Annex 2 of the Sea Basin Strategy Document, the status of the GES has not been assessed.

PRESSURES ON FISH AND CEPHALOPODS

The main sources of pressure from human activities on fish and cephalopods - wild species - are the following (source: detailed ET data sheets in Annex 4.3 of the Sea Basin Strategy Document):

Type of fish and cephalopods 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
Artificialization of the coastline	No Yes	No Yes	No Yes	No Yes
Coastal tourism	Yes Yes		Yes Yes	
Boating and water sports	Yes Yes	Yes Yes	Yes Yes	
Beach activities and beach use			Yes Yes	Yes Yes

Caption:

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

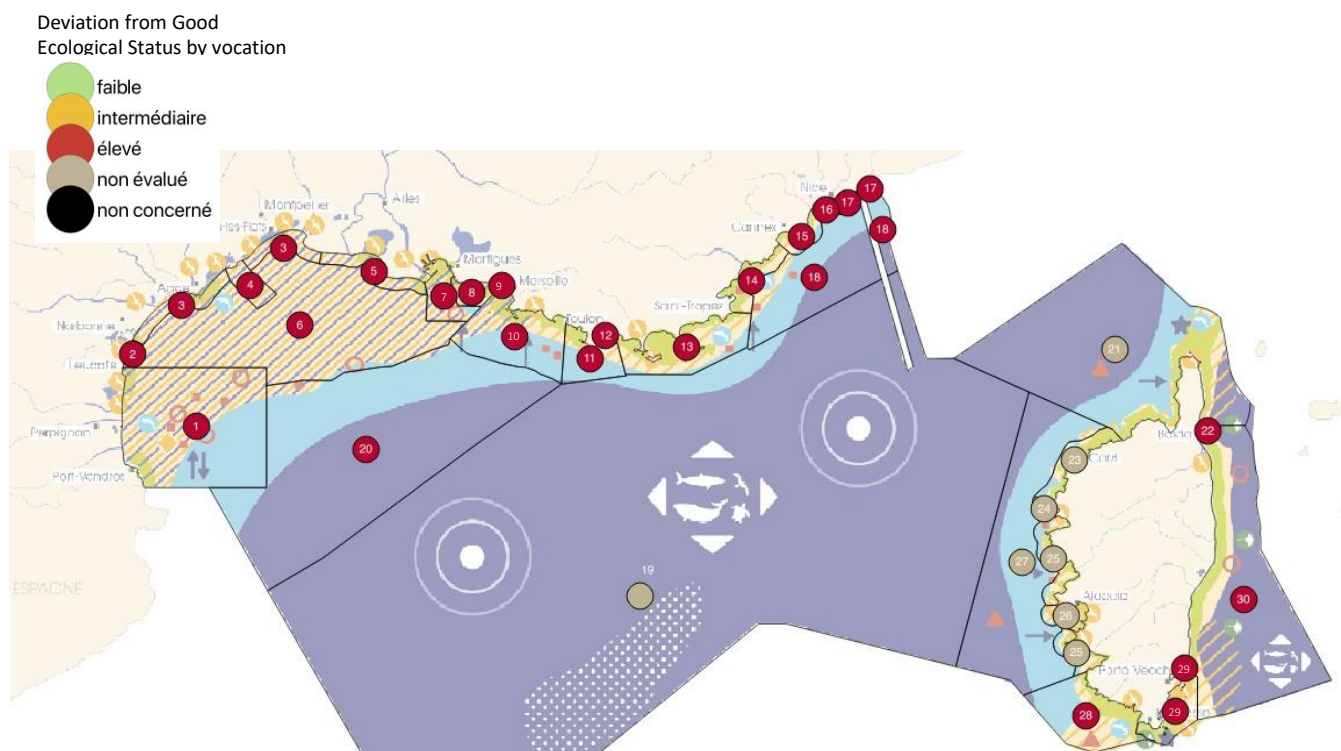
COMMERCIAL SPECIES 17

LOCALISATION OF STRONG CHALLENGES CONCERNING COMMERCIAL SPECIES AND EVALUATION OF THEIR CONDITION

The Mediterranean coastline is a coastline where commercial fishing has a relatively lower presence if we compare the number of stock species (for example 8 stocks in the Mediterranean, compared to 86 for the MEMN coastline). For commercially exploited species, the achievement of good environmental status is based on the Common Fisheries Policy objective of maximum sustainable yield. Overall, it can be said that of the 8 species giving rise to scientific expertise in the Mediterranean, 5 have benefited from a quantitative assessment: 1 species (Bluefin tuna) meets the GES, while 4 do not. On the other hand, the results obtained over the last 10 years show that conditions are improving for bluefin tuna and are stabilising for 3 stocks that do not reach the GES.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: GAP TO GES

COMMERCIAL SPECIES ISSUE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices
 Background map: Ecological issues in the Western Mediterranean produced by AFB, 2018
 Coordinate system: WSG84 / Pseudo Mercator Edition:
 01/2021, Epices

Regardless of the vocation area, where the issue could be assessed (for 23 of the 30 vocation areas), there are very few commercial species for which the GES is achieved. Thus, a high GES deviation is observed for the commercial species issue in all the vocation zones of the coastline for which the GES deviation could be calculated. Moreover, the reliability of these results is rather low.

4.2.5. Food webs

LOCALISATION OF STRONG CHALLENGES CONCERNING FOOD WEBS AND EVALUATION OF THEIR CONDITION

The ecosystem of the north-western Mediterranean basin is home to several special pelagic habitats that structure its functioning. These are land-sea interface zones such as river plumes, sea-lagoon transition areas and zones of remobilisation of marine nutrients from deeper waters. These phenomena are particularly important at the edge of the continental shelf on the oceanic slope (eddies, upwellings, downwellings). The Strait of Bonifacio, Cape Corsica and certain canyons (Lacaze-Duthiers, Cassidaigne, Stoechades, Saint Florent, Sagone and Ajaccio) are, by virtue of their conformation and orientation, primordial sectors of exchange between the surface waters and the deep waters. Further offshore, under the effect of cold winds, important convections are established between the cooled surface waters and the deeper waters.

The planktonic communities (plants and animals) of the coastline and the resulting food webs are very strongly conditioned by these pelagic habitats. Small pelagic fish (sardines, sprats, anchovies) are another key link in these food webs on which many species depend directly to complete their life cycle. Since 2008, the functioning of the food webs seems to have been disrupted; changes in zooplankton communities, the origin of which is poorly explained, have led to a significant drop in the biomass of small pelagics.

With regard to the assessment of good environmental status, in the absence of a scientific report on this topic, no conclusion on the status of the GES can be drawn. However, the analysis of the ecological status of forage species subject to harvesting : sandeel, anchovy, sprat and sardine (source report D3, Initial State and ICES Opinion) shows that :

- The GES is not met for anchovies in particular;
- For sardines, despite the collapse of commercial catches since 2008 and an almost zero exploitation rate since 2010, the situation for sardines remains stable compared to previous years. The sardine in the Gulf of Lion is therefore considered to be in ecological disequilibrium as its situation does not seem to be linked to overexploitation;
- No assessment for sandeels and sprat. The main pressures that impact the food web are
 - Nutrient inputs;
 - Harvesting of fodder species ;
 - Changes in hydrographic conditions.

Other pressures to be considered include inputs of hazardous litter substances, inputs of organic matter, introduction of microbial pathogens and introduction of non-native species.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: GAP TO GES

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

4.3. Issues related to pressures on the marine environment

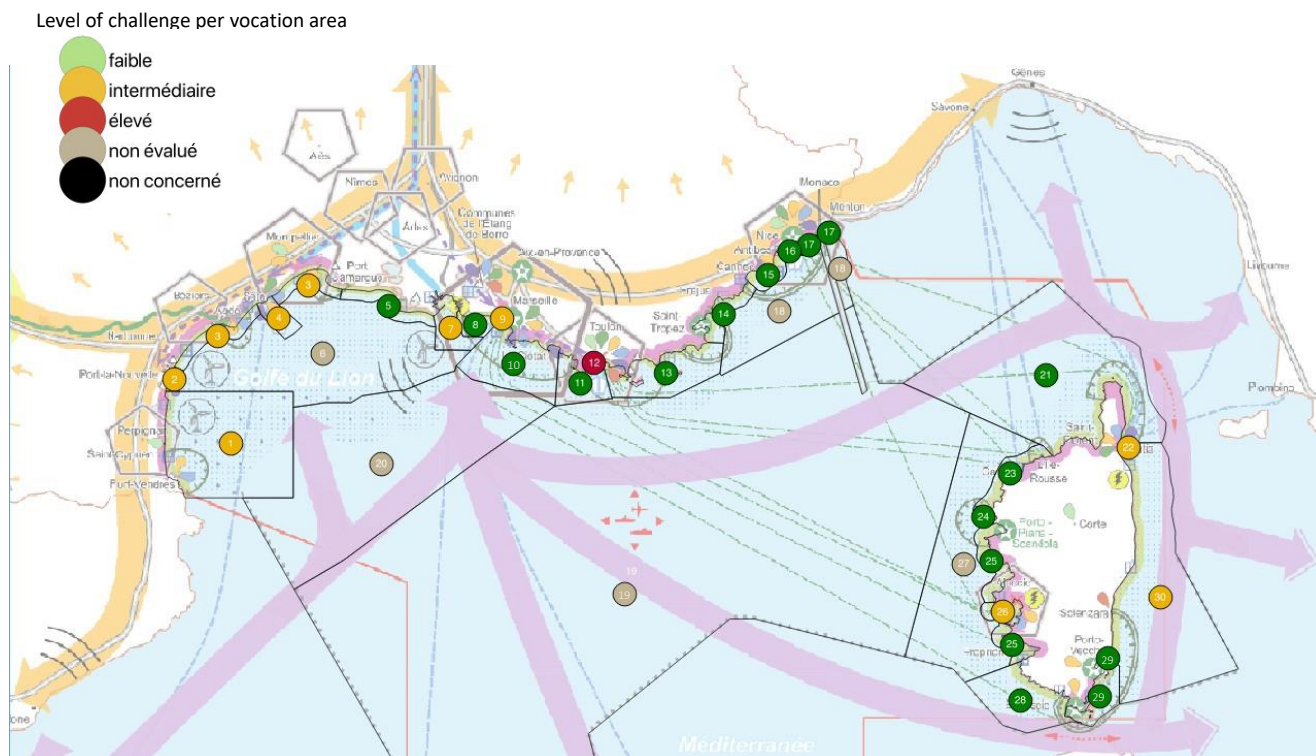
4.3.1. Non-native species

LOCALIZATION OF PRESSURES FROM NON-NATIVE SPECIES AND ASSESSMENT OF THE LEVEL OF ISSUE

Since 2012, 34 new NIS have been reported in French waters in mainland France, 28 of which correspond to a first report on a French scale. Eleven new NIS were reported in the Mediterranean. They are arthropods (6 species), bryozoans (2 species), an annelid, a mollusc and a cnidarian. Given the heterogeneity of the available data due to the lack of standardisation of methods, it is currently not possible to statistically assess whether or not the GES

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGE

NON-INDIGENOUS SPECIES ISSUE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

Background map: The maritime and marine activity of the Mediterranean coast - DIRM MED, Cerema MED, SHOM - Copyrights = Mapinfo Corpora.on - Realisa.on : Cerema Normandie Centre - Date: 07/2019

Coordinate system: WGS84 / Pseudo Mercator Edition: 01/2021, Epices

Spatialization of the ENI 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.

Thus, at the scale of the coastline, in terms of the level of challenge, 15 vocation zones present a level of challenge qualified as "low", 9 zones present a level of challenge qualified as "intermediate", one zone presents a level of challenge qualified as "high" and all the offshore zones do not present this challenge. This level of challenge presents spatial disparities that can be highlighted:

- The vocation zones in the Occitanie region all have a level of challenge qualified as "intermediate" due to the presence within these zones of activities that are potentially sources of pressure (shellfish farming areas, aquarium and commercial port);
- The vocation zones of the Corsican and Provence-Alpes-Côte d'Azur coastline are mainly zones with a "low" level of concern, with the exception of 6 zones, one of which, the Rade de Toulon, has a "high" level of concern due to the combined presence of shellfish farming zones and a commercial port.

The reliability of the results is good because the potential sources of pressure could be precisely located in the vocation areas.

ORIGINS OF ENI PRESSURE

The main anthropogenic activities that may contribute to the introduction of NIS are the following (source: Sea Basin Strategy Document ET sheets Annex 4.3).

Pressure-generating activity	Non-native species
Maritime transport and ports	No Yes
Defence and public intervention at sea	No Yes
Aquaculture	Yes Yes
Boating and water sports	No Yes
Recreational fishing	Yes Yes
Artificialization of the coastline	No Yes

Caption:

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

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

In the absence of a dedicated monitoring programme, it is difficult at present to measure whether the impacts of non-native species are decreasing or increasing.

As far as the costs of degradation are concerned, since the state of scientific knowledge is currently in a phase of characterising the pressure, only the costs of monitoring and information could be correctly entered. 1.35 million per year.

4.3.2. Eutrophication

LOCALIZATION OF EUTROPHICATION PRESSURES AND ASSESSMENT OF THE LEVEL OF PRESSURES

Eutrophication¹⁸ is a process driven by an enrichment of water by nutrients, especially nitrogen and/or phosphorus compounds, leading to: an increase in algal growth, primary production and biomass; a change in the balance of organisms; a degradation of water quality.

The analysis of the achievement of good environmental status shows that the GES has not been achieved on 0.1% of the Mediterranean coastline. In fact, only a small area of 13 km² at the mouth of the Rhone does not reach the GES due to the combined action of (nitrogenous) nutrients, chlorophyll-a and turbidity.

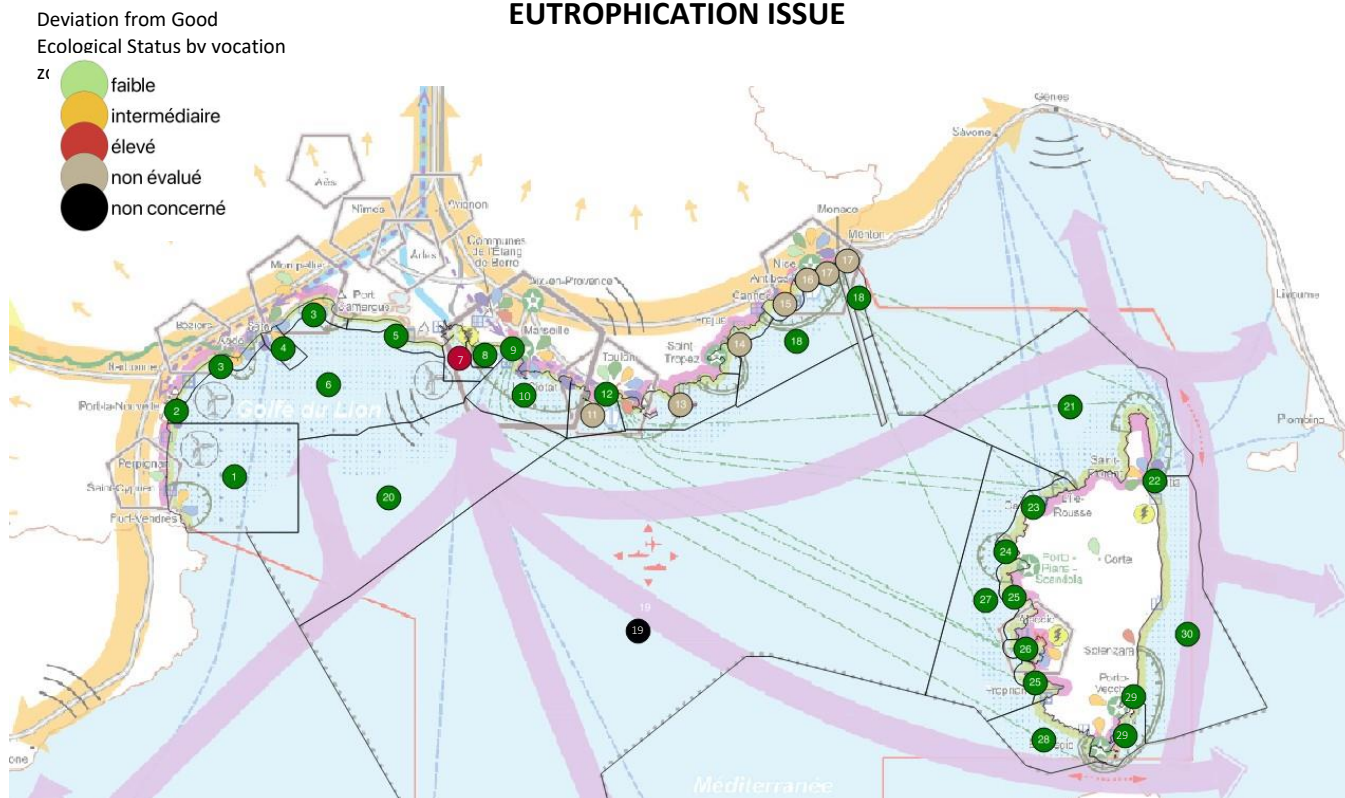
Compared to the initial assessment in 2012, there have been some changes. The 2012 assessment identified 2 areas as potentially problematic with regard to eutrophication: the coastal area extending from the Gulf of Fos to Sète and the wider area extending from Fos to Banyuls. The 2018 assessment downgrades only a small part of the first area. If we look at the results of the criterion-based assessment, there is indeed a degradation signal that extends a little further offshore (but still within the intermediate zone) from nutrients, chlorophyll-a and turbidity. There is also very little chlorophyll-a degradation in the Gulf of Lions, although the area is much smaller than that estimated in the 2012 assessment.

¹⁸ according to the MSFD by task group5, 2010 Ferreira et al., 2010

The main ecological issues impacted by this pressure are: HFAs (spawning grounds, nurseries), sedimentary and rocky intertidal habitats, pelagic habitats and food webs.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: GAP TO GES

EUTROPHICATION ISSUE



Data source: environmental evaluation of the Sea Basin Strategy National action programme carried out by Epices

Background map: The maritime and marine activity of the Mediterranean coast - DIRM MED, Cerema MED, SHOM - Copyrights = Mapinfo Corpora.on - Realisa.on : Cerema

Normandie Centre - Date: 07/2019

Coordinate system: WGS84 / Pseudo Mercator Edition:

01/2021, Epices

The above is reflected in the spatialization by vocation zone. Thus, on the scale of the coastline, in terms of deviation from good status, 23 zones show a deviation from the GES qualified as "low", one zone, that of the Gulf of Fos-sur-Mer, shows a deviation from the GES qualified as "high" and 6 other zones in the region show a deviation from the GES that could not be evaluated. The deviation from the GES on this issue, which is generally low on the whole coastline, shows some spatial disparities that can be highlighted:

- The vocation areas located on the Occitania region's coastline, Corsica and the offshore areas present, for all vocation areas, a deviation from the GES qualified as "low";
- As regards the coastal vocation zones of the Provence-Alpes-Côte d'Azur region, (1) the 6 zones located in the East have maritime sectors that could not be assessed, (2) 5 zones located in the West have a "low" GES deviation and (3) only the zone of the Gulf of Fos-sur-Mer has maritime sectors with a "high" GES deviation.

The reliability of the results is rather good, as the GES deviation results have been assessed on the basis of a division into maritime sectors, the perimeter of which is more precise than that of the vocation zones.

ORIGINES OF THE PRESSURES OF EUTROPHICATION PRESSURES

The main inputs of nutrients are by land, river and/or air. The main activities generating eutrophication are agriculture, maritime transport and the artificialization of the coastline (source: detailed ET data sheets in Annex 4.3 of the Sea Basin Strategy Document):

Pressure-generating activity	Eutrophication	
Agriculture	No	Yes
Artificialization 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 contributory)

✓ Activity dependent on eutrophication status

The overall estimate of the costs related to the phenomenon of marine eutrophication highlights the importance of the costs related to prevention and avoidance measures resulting mainly from the actions implemented to preserve water quality. Depending on local issues, the distribution of costs at the national level in each marine sub-region for the different types of actions implemented remains highly variable. In the Western Mediterranean, monitoring and information actions represent about 2.1% of the total cost of these actions at the scale of the RS, compared to 97.9% for prevention and avoidance actions. 44.8 million and represent 17% of the costs of eutrophication on a national scale.

4.3.3. Integrity of the sea-floor

LOCALISATION OF PRESSURES AFFECTING THE INTEGRITY OF THE SEABED AND ASSESSMENT OF THE LEVEL OF THE CHALLENGES

The definition of good environmental status of sea-floor integrity is as follows: the level of sea-floor integrity ensures that the structure and functions of ecosystems are maintained and that benthic ecosystems, in particular, are not disturbed.

Potential physical pressures on the seabed are assessed from data relating to human activities likely to generate these pressures: coastal development, dredging and dumping of dredged material, anchoring, aquaculture and professional troll fishing.

Although the GES assessment has many limitations and uncertainties due to the data used, assumptions made and lack of knowledge, it nevertheless provides a relatively representative picture of reality (in terms of the extent of application of different activities):

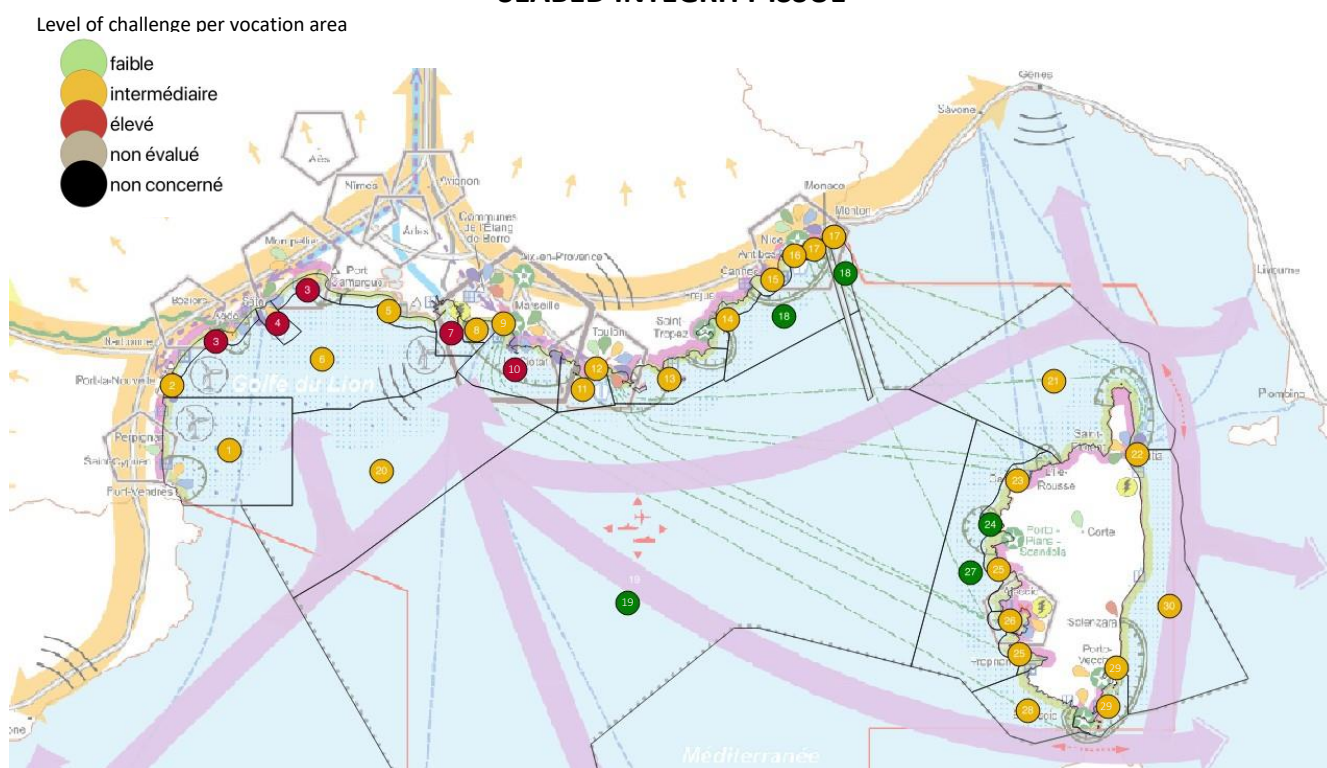
- Potential physical disturbances of the seabed represent an area of more than 12,014 km² in the MMN MO (10.5% of the coastline area) and are mainly located in the coastal areas of the Gulf of

Lion and on the east coast of Corsica. Although the use of available data on professional troll fisheries increases the area actually under pressure, the 2018 assessment shows that almost 97% of the area of potential physical disturbance of the seabed is attributable to this activity.

- The extent of potential physical disturbance is highly variable (from 0 to 91%) depending on the major habitat type considered: (1) For the "coastal circalittoral" and "offshore circalittoral" habitats as well as the lower and upper bathyal sediments, professional troll fishing is responsible for more than 93% of the total potential physical disturbance; (2) For "infralittoral" habitats, the contribution of anchorage activities to the total level of potential physical disturbance is particularly significant and varies from 32% to 77%, depending on the habitat in question.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGE

SEABED INTEGRITY ISSUE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

Background map: The maritime and marine activity of the Mediterranean coast - DIRM MED, Cerema MED, SHOM - Copyrights = Mapinfo Corpora.on - Realisa.on : Cerema Normandie Centre - Date: 07/2019

Coordinate system: WGS84 / Pseudo Mercator Edition: 01/2021, Epices

As the ecological status of the integrity of the sea-floor was not assessed, the spatialization of the issue by vocation zone was based on the distribution of activities that could exert pressure on the integrity of the sea-floor.

At the scale of the coastline, in terms of level of challenge, 4 vocation zones present a level of challenge qualified as "low", 22 zones present a level of challenge qualified as "intermediate" and 4 zones present a level of challenge qualified as "high". There are spatial disparities in this level of challenge:

- The vocation zones of the Occitanie region present both zones with a level of challenge qualified as "intermediate" and a level of challenge qualified as "high"

the presence within these areas of activities that are potential sources of pressure, in particular towed gear fishing;

- The vocation zones of the Corsican and Provence-Alpes-Côte d'Azur coastline are mainly zones with a level of challenge that is "intermediate";
- The offshore vocation zones have a mostly "low" level of concern, due to the absence of most of the activities that put pressure on this issue.

The reliability of the results is rather good because the potential sources of pressure could be globally located on the vocation areas.

ORIGIN OF PRESSURES AFFECTING THE INTEGRITY OF THE SEABED

The main anthropogenic activities likely to contribute to the artificialization of the seabed are the following (source: Sea Basin Strategy Document ET sheets, Annex 4.3):

Pressure-generating activity	Artificialization 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
Underwater cables	No Yes
Boating and water sports	No Yes
Power generation	No Yes
Research and development	No Yes
Recreational fishing	No Yes

Caption:

✓ Activity generating artificialization of the seabed (the most contributory)

✓ Activity dependent on the integrity of the sea-floor

4.3.4. Changes in hydrographic conditions

LOCALIZATION OF PRESSURES MODIFYING HYDROGRAPHIC CONDITIONS AND ASSESSMENT OF THE LEVEL OF CHALLENGE

The coastline has 4 main hydrological structures, which are:

- A significant front and upwelling on the canyon heads allowing for extensive blooms in the spring present in the sectors of north-western Corsica, western Corsica, the southwestern canyons of the Gulf of Lion;
- A zone of strong currents allowing for the mixing of waters under the influence of wind regimes (upwelling, downwelling and eddies) in the north-western and southern sectors of Corsica;

- A cyclonic circulation to the south, which forms an area of cooler and relatively more productive water in the broad south-eastern sector of Corsica;
- Occasionally high chlorophyll levels with the recurrent presence of anticyclonic eddies opposite Marseille.

The assessment of the good environmental status of water conditions considers six pressures: changes in the nature of the bottom and in current and wave regimes, temperature, salinity and turbidity.

The GES's assessment of hydrographic conditions, based on data on human activities, has shown significant variations in exposure to pressures:

- The coastal zone and the plateau zone are the most exposed to the hydrographic pressures considered.
- The modification pressures of "turbidity" and "background nature" present the largest potential exposure areas (15% of the Mediterranean coast). However, the exposure index remains mostly low.

In addition, approximately 90% of the major benthic habitat types have a habitat area potentially subject to a medium to high risk of change greater than 30% of the total habitat area, as a result of cumulative exposure to hydrographic pressures.

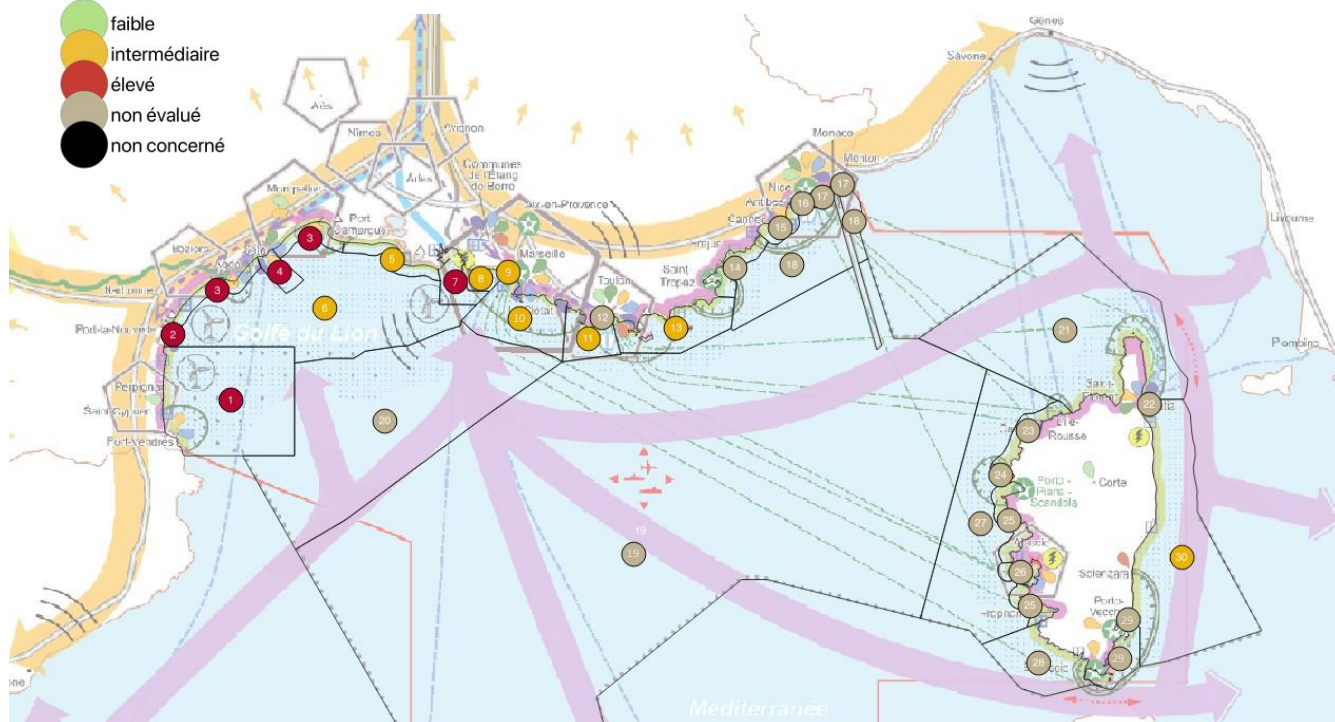
In respect of the Mediterranean coastline, the habitats most at risk are "infralittoral sands", "infralittoral silt" and "infralittoral biogenic rocks and reefs" that are located in the coastal zone.

The costs of degradation - or rather the costs associated with knowledge of this issue - linked to the change in hydrographic conditions are estimated at almost 100,000 euros per year for monitoring and information, to which must be added 600,000 euros per year for research on hydrodynamics and the introduction of energy (not specific to the change in hydrographic conditions).

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGE

ISSUE OF CHANGE IN HYDROGRAPHIC CONDITIONS

Level of challenge per vocation area



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

Background map: The maritime and marine activity of the Mediterranean coast - DIRM MED, Cerema MED, SHOM - Copyrights = Mapinfo Corpora.on - Realisa.on :

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The results presented above are taken from the scientific and technical synthesis prepared for descriptor D7, and are based mainly on the map of potential risks of modification of benthic habitats.

At the scale of the coastline, in terms of level of challenge, 8 areas have a level of challenge qualified as "intermediate", 5 areas have a level of challenge qualified as "high" and the other areas have no hydrographic challenge assessed. This level of challenge has the following spatial disparities:

- The vocation zones of the Occitanie region all have a level of challenge qualified as "high";
- The coastal vocation zones of the Provence-Alpes-Côte d'Azur region are mostly zones with an "intermediate" level of challenge;
- The other vocation areas in Corsica and offshore have very little assessed hydrographic issue.

The reliability of the results is rather good because the levels of potential risk of benthic habitat modification are rather homogeneous within the same vocation area.

4.3.5. Chemical and microbiological contamination

LOCALISATION OF CHEMICAL AND MICROBIOLOGICAL CONTAMINATION PRESSURES AND ASSESSMENT OF THE PRESSURE LEVEL

All the ecological issues are affected by this pressure, particularly the animal species present in the coastal zone.

The GES assessment of chemical contaminants in the environment according to the criterion of concentration in sediment, bivalve molluscs and fish shows mainly that :

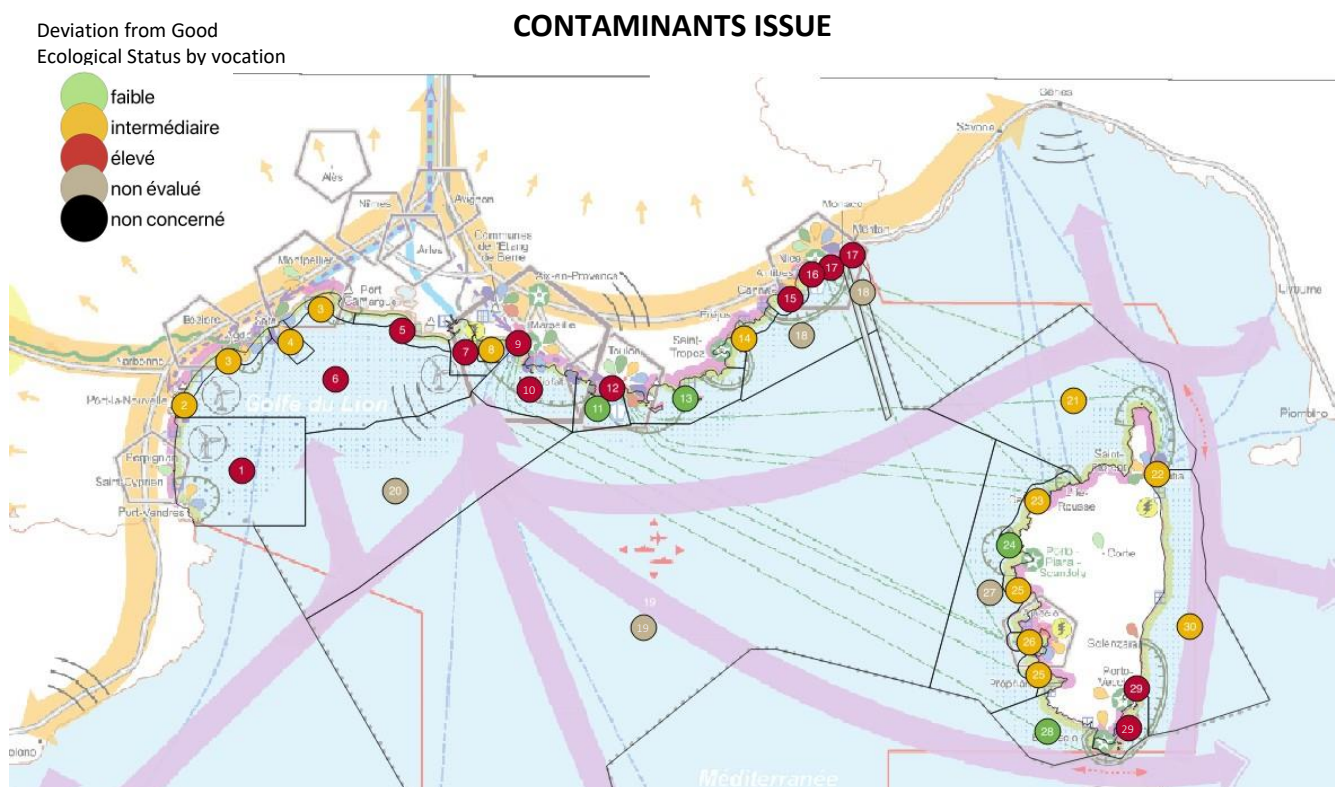
- In **sediments**, the GES is not reached for at least one station for the 7 metals assessed, for most of the hydrocarbons (PAHs) and for all the polychlorinated biphenyls (PCBs), in particular for a dioxin-like congener, CB 118
 "type congener, CB 118;
 the threshold value for metals was exceeded at the stations located between Fos-sur-Mer and Nice and in Corsica, for PAHs over the entire Mediterranean coastline and for PCBs from the mouth of the Petit-Rhône to the Bay of Marseille and the Bay of Nice.
- For **bivalve molluscs**, the GES is not reached for lead at three stations located around Toulon, for PCBs in the Fos-Marseille-Toulon region, for PAHs at numerous stations on the Spanish border and between Fos and Toulon, and for all the organochlorine pesticides monitored at several stations spread over the entire coastline. The GES is also not reached for tributyltin (TBT) at 20 stations (37% of the stations monitored), 11 of which are near the mouth of the Rhône.
- For **fish**, the GES is not reached for various PCB congeners in mackerel and hake.

Regarding health issues, of the 11 indicators on the content of different groups of chemical contaminants and algal toxins (phycotoxins) in edible tissues of seafood products potentially intended for human consumption, 7 indicators meet the GES and 4 do not. In fact,

- significant exceedance of the maximum regulatory limit are observed for mercury, lead and some phycotoxins.
- No exceedance of the regulatory limit was found for cadmium, hydrocarbons, polychlorinated biphenyls and groups of dioxin-like compounds.

The main sources of chemical contamination are: agriculture (pesticides, chemical fertilisers, antibiotics and antiparasitics, metals, etc.), industry (PAHs, PCBs, drug residues, metals, VOCs, POPs, etc.) and maritime transport and ports (degassing, collisions, damage, groundings, etc.).

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: GAP TO GES



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

Background map: The maritime and marine activity of the Mediterranean coast - DIRM MED, Cerema MED, SHOM - Copyrights = Mapinfo Corpora.on - Realisa.on : Cerema Normandie Centre - Date: 07/2019

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The results presented above come from the scientific and technical synthesis prepared for descriptor D8, and are based on the state maps of concentrations of contaminants (metals, PAHs¹⁹, PCBs²⁰ and pesticides), in sediments and bivalve molluscs, and on the Imposex bioindicator map.

At the scale of the coastline, in terms of deviation from good status, 4 vocation zones have a deviation from GES classified as "low", 11 areas have a deviation from GES classified as "intermediate", 11 other areas have a deviation from GES classified as "high" and 4 offshore areas have a deviation from GES that could not be assessed. The GES gap on this issue shows spatial disparities that can be highlighted:

- The Occitania and Corsica vocation zones have a majority of zones with an "intermediate" GES gap and some zones with a "high" or "low" gap;
- The coastal vocation zones of the Provence-Alpes-Côte d'Azur region have a majority of zones with a "high" GES deviation because at least

¹⁹ Polycyclic Aromatic Hydrocarbons

²⁰ Polychlorinated biphenyls

one or even two substances of different contaminants (metals, PAHs, PCBs and pesticides) exceed the thresholds.

The reliability of the results is rather average (for 17 use areas) or even low (for 7 use areas) because the results of the GES deviation calculation are based on measurement points with heterogeneous results on the status of the concentration of contaminants in the same use area.

ORIGINS OF CHEMICAL AND MICROBIOLOGICAL CONTAMINATION PRESSURES

The main source of microbiological contamination is the artificialization of the coastline through diffuse and punctual terrestrial inputs (in the case of overflowing wastewater treatment plants (WWTP)) of microbial pathogens and bacteria resulting from domestic activities and collective and non-collective wastewater treatment systems (source: Sea Basin Strategy Document ET sheets, annex 4.3):

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

Caption:

- ✓ Activity generating chemical and microbiological contamination (most contributory)
- ✓ Activity dependent on the state of chemical and microbiological contamination

The analysis of the costs of degradation reveals that :

- The costs of degradation by chemical contamination amount to 153 million euros. In the Mediterranean, these costs represent 25.9% of the national costs. Prevention and avoidance costs are the most important (92.4% of total costs on the coastline) and result at 44.8% from the management of sewage sludge and at 36.1% from measures taken to limit industrial discharges. The costs of monitoring and information actions represent about 7.5% of the total cost. The cost of mitigation measures is almost zero (0.1%);
- The costs of degradation by microbiological contamination amount to 616 million euros. The costs of prevention and avoidance (99.2%) concern almost exclusively sanitation systems, whether urban (collective sanitation) or agricultural (purification of livestock). The actions implemented to carry out monitoring and improve knowledge only represent 0.4% of the costs, while the measures to mitigate pollution by decontaminating shellfish classified in zone B represent approximately 0.4% of the expenditure carried out within the marine sub-region;
- With regard to oil pollution, no accidental oil pollution, either major or minor, affected the Mediterranean coastline between 2012 and 2016.

4.3.6. Litter

LOCALISATION OF PRESSURES LINKED TO WASTE AND ASSESSMENT OF THE LEVEL OF STAKE

The litter considered in this issue is macro- and micro-litter on the shoreline, floating and on the bottom.

The species impacted are all marine species that are likely to interact with the litter: turtles, birds, mammals, invertebrates or fish. Impacts on species are related to ingestion, entanglement (fishing gear, strapping, etc.) and overlap.

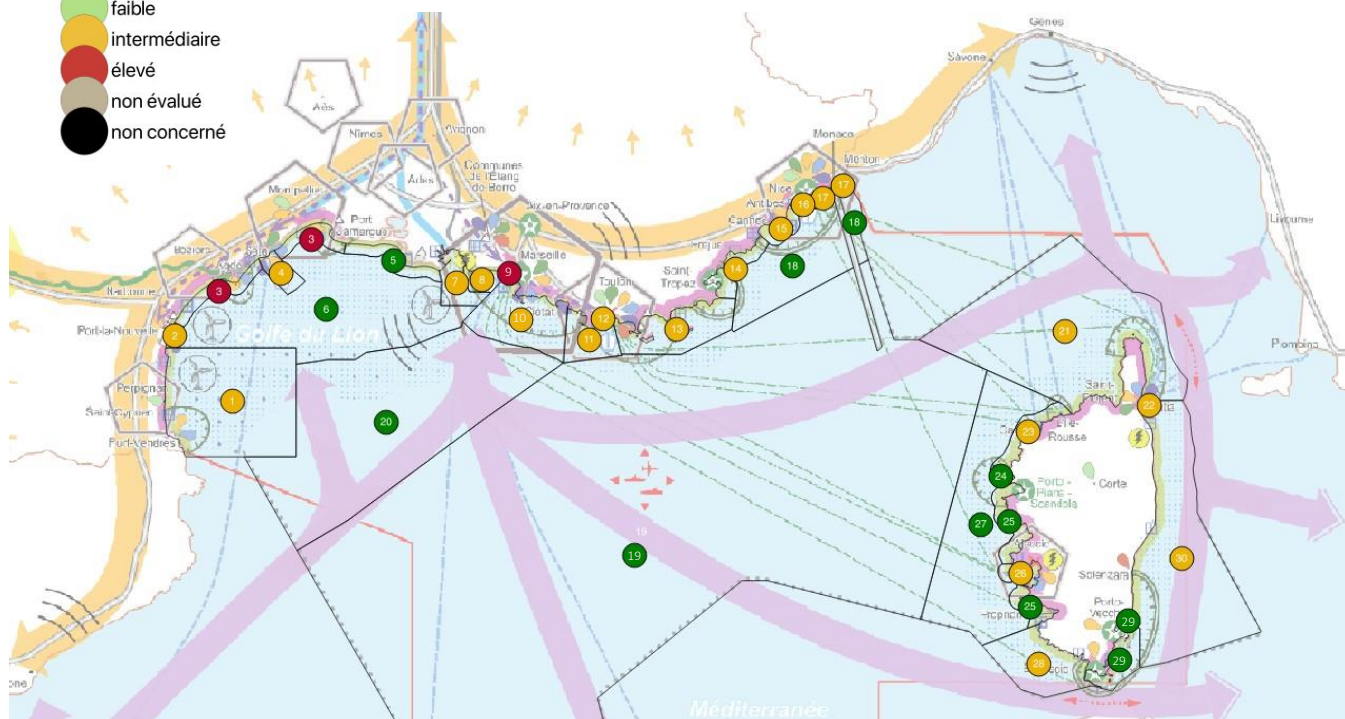
Despite the acquisition of a lot of better structured data since the initial assessment of the APME cycle 1 in 2012, only the following indicators could be assessed:

- Floating litter and litter on the bottom: the GES is not achieved in the Mediterranean coastline due to the lack of a significant downward trend since 2012;
- Floating micro-litter: the GES is achieved due to a significant decrease since 2012.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGE

WASTE ISSUE

Level of challenge per vocation area



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

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The results presented above are taken from the description of descriptor D10 (environmental target and associated indicators), and are based on the maps showing the main activities that generate litter on the coastline.

At the scale of the coastline, in terms of level of challenge, 9 vocation zones present a level of challenge qualified as "low", 19 zones present a level of challenge qualified as "intermediate" and 2 zones present a level of challenge qualified as "high". This level of challenge presents spatial disparities that can be highlighted:

- The vocation zones in the Occitania and Provence-Alpes-Côte d'Azur regions are mostly zones with a level of challenge qualified as "intermediate" due to the presence within these zones of activities or geographical configurations (presence of large rivers) that are potentially sources of pressure;
- The vocation zones of the Corsican coastline also have a high proportion of areas with an "intermediate" level of concern, but also three areas less affected by litter;
- The offshore vocation zones all have areas with a level of challenge that is "low" which is due to the criteria taken into account and the absence of most of the activities that cause pressure on the issue (excluding maritime transport).

The reliability of the results is rather good because potential sources of pressure could be

generally located in the vocation zones.

ORIGINES OF WASTE-RELATED PRESSURES

The main sources of litter are land-based activities (urban, tourist, port and industrial areas), transfer routes (waterways, urban wastewater) and maritime activities (maritime transport, fishing, aquaculture, boating) (source: Sea Basin Strategy Document ET sheets, Annex 4.3):

Pressure-generating activity	Litter
Maritime transport and ports	No Yes
Professional fishing	Yes Yes
Aquaculture	Yes Yes
Industries	No Yes
Artificialization of the coastline	No Yes
Recreational fishing	Yes Yes
Coastal tourism, seaside activities and beach use, boating and water sports	Yes Yes

Caption:

✓ Litter generating activity (most contributory)

✓ Activity dependent on litter status

The costs of degradation by marine litter amount to approximately 2.4 million euros per year. Monitoring and information costs are among the most important (65%). They represent almost half of the costs on the four coastlines because litter research is strongly located in the Mediterranean. Avoidance and prevention costs represent 25.4% and mitigation costs 9.8% of the total costs of litter degradation on the Mediterranean coast.

4.3.7. Noise emissions

LOCALIZATION OF PRESSURES LINKED TO NOISE AND ASSESSMENT OF THE LEVEL OF STAKE

There are two main sources of noise emissions that can cause environmental impacts: maritime traffic and sonar activities. The main known interaction is with cetaceans.

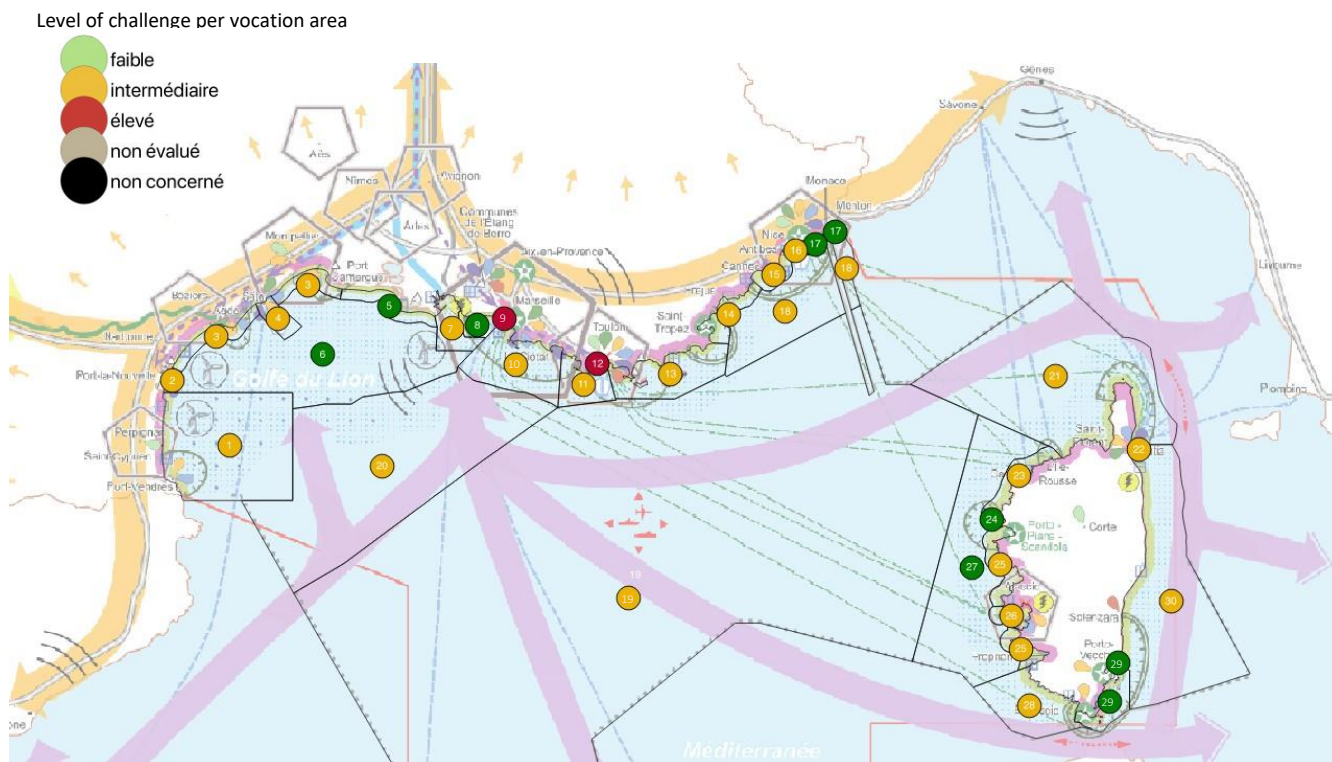
Pressure from merchant shipping in the western Mediterranean is moderate to high. It is dominated by a diagonal axis originating from the maritime routes between Gibraltar and the southern coast of France (in particular Marseille) and the Gulf of Genoa. Traffic noise increases significantly in places with high activity such as off the coasts of Toulon and Marseille.

Sonar broadcasts use sound signals to detect or position objects, to study the seabed and ocean volume or to transmit data. Pressure from noise emissions in the western Mediterranean is moderate and has been increasing in recent years, unlike in other marine sub-regions.

Anthropogenic activities cause continuous (e.g. maritime transport) and impulsive (e.g. port works or offshore wind turbines) noise emissions that can generate impacts on the marine environment. The achievement of Good Ecological Status is considered as not assessed.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGE

NOISE ISSUE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

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As noise was not assessed, the spatialization of the issue by use area was based on the distribution of activities that may exert noise emission pressures.

At the scale of the coastline, in terms of level of challenge, 7 vocation zones present a level of challenge qualified as "low", 21 zones present a level of challenge qualified as "intermediate" and 2 zones present a level of challenge qualified as "high". This level of challenge presents spatial disparities that can be highlighted:

- The vocation zones of the Occitanie region all present a level of challenge qualified as "intermediate" due to the presence within these zones of activities that are potentially sources of pressure;
- The vocation zones of the Provence-Alpes-Côte d'Azur region present a majority of zones with an "intermediate" level of concern, but also three zones with a level of concern qualified as "low" and two others "high" because these are the zones concerning the bays of Toulon and Marseille, concentrating a lot of noise generating activities;
- The vocation zones located on the Corsican coastline and in the open sea are mainly areas with an "intermediate" level of challenge.

The reliability of the results is rather good because the potential sources of pressure could be located in the vocation areas.

ORIGINS OF NOISE PRESSURE

The main human activities likely to generate noise are the following (source: Sea Basin Strategy Document OE sheets annex 4.3):

Pressure-generating activity	Noise emissions
Maritime transport and ports	No Yes
Maritime public works	No Yes
Defence and public intervention at sea	No Yes
Research and development	No Yes
Extraction of materials	No Yes
Underwater cables	No Yes
Power generation	No Yes
Boating and water sports	No Yes

Caption:

✓ Activity generating noise emissions (most contributory)

✓ Activity dependent on noise emissions

Noise-related degradation costs are estimated at just over €153,000 of monitoring and information per year.

4.4. Other societal issues

4.4.1. Landscapes and cultural heritage

QUALIFICATION OF LANDSCAPES POSING STRONG CHALLENGES

Although the regions and communities of the coastline share common features of the Mediterranean landscape, each has its own unique character, sites and heritage that contribute to their identity and attractiveness. The coastline of the Occitanie region has a low, sandy coastline with numerous lidos between the sea and a string of coastal ponds. The Provence-Alpes-Côte d'Azur region offers a more diverse and rocky coastline. Corsica offers a wide variety of landscapes, with rocky coasts occupying more than half of the shores or sandy and humid areas on the eastern coast.

The landscape is not only coastal it is also infra-littoral, to be considered from the shore, and finally underwater, where remarkable habitats (underwater drop-offs, canyons) are home to fauna and flora that is emblematic of the Mediterranean Sea (Posidonia meadows, coralligenous concretions). This natural and underwater heritage also rubs shoulders with a tangible and intangible heritage, linked to human activities developed around the sea: Genoese towers, citadels, semaphores, lighthouses, boats of heritage interest and underwater archaeological sites dot the Mediterranean coastline.

National, regional and marine nature parks determine through their management document (national park charter, marine nature park management plan, etc.) the guidelines for the protection, enhancement and development of their territory. The charters determine in particular the guidelines and fundamental principles for the protection of landscape structures in the park territory. On the scale of the Mediterranean coastline:

- Three NRP are present: the Camargue NRP in Provence-Alpes-Côte d'Azur, the Narbonnaise en Méditerranée NRP in Occitania, and the Corsica NRP;
- There are two national parks: the Port-Cros NP and the Calanques NP in Provence-Alpes-Côte d'Azur;
- There are two natural marine parks: the Gulf of Lion in Occitania and the Cap Corse and Agiate in Corsica.

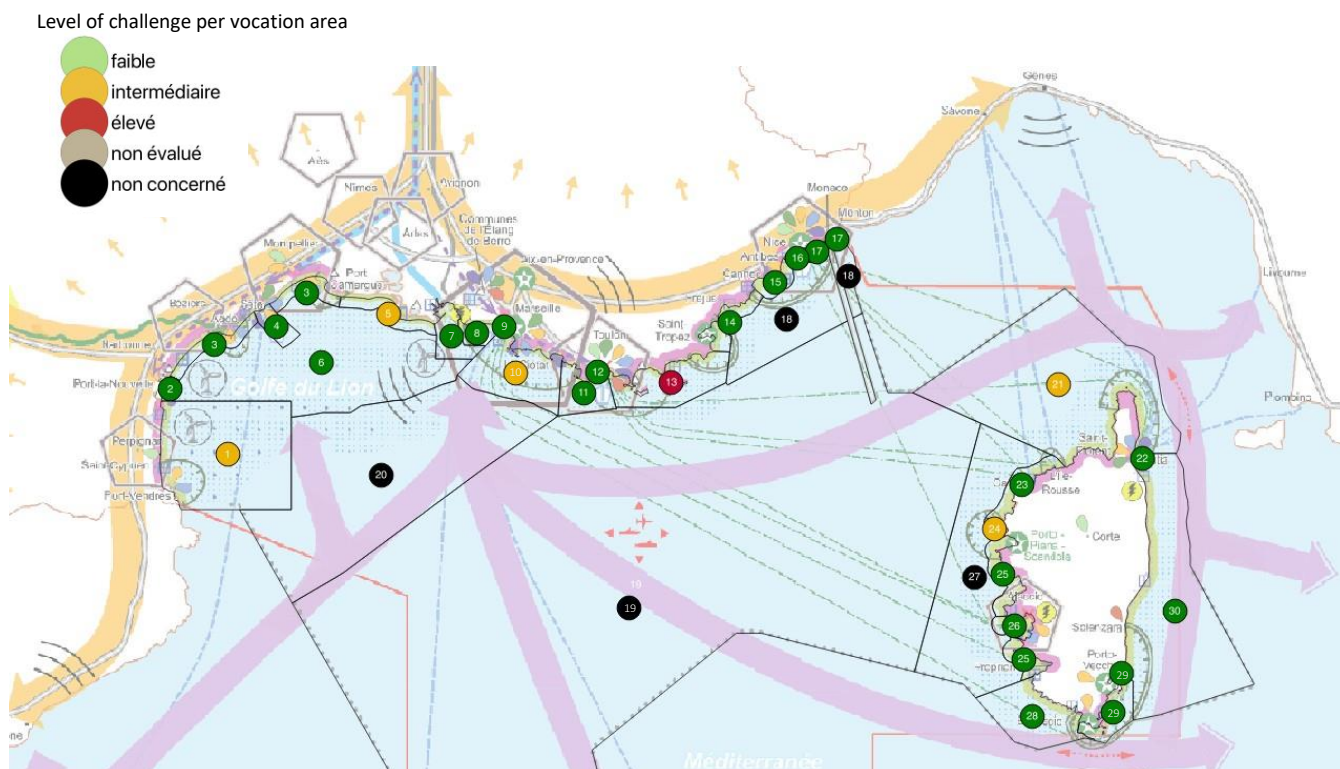
The underwater relief, whether exposed to natural light or not, is one of the components of the underwater landscape. Indeed, once immersed, the diver discovers two horizontal surfaces which act as markers. On the one hand the underwater relief, but also the surface, the boundary between air and water. The main types of remarkable underwater landscapes of the Mediterranean coast are its sandy bottom, the Mediterranean Posidonia, coralligenous concretions, drop-offs, underwater caves and the wrecks. The coastline is home to a quarter of the scuba diving licence holders in mainland France (source EES APME 1 MED).

Essentially educational (and/or discovery), underwater trails are territorial tools that include a sporting activity to discover the marine environment, either independently or accompanied, on a specific site and under the responsibility of a structure. There are around twenty underwater trails on the Mediterranean coast (source: EES APME 1 MED).

The main pressures on the landscape are mainly linked to the artificialization of the coastline (urbanization, infrastructures, shacking etc.), maritime transport and yachting (litter disposal, wrecks).

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGE

LAND AND SEASCAPE ISSUES



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

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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 that 20 vocation zones present a level of issue qualified as "low", 5 zones present a level of issue qualified as "intermediate" and 1 zone presents a level of issue qualified as "high". Offshore areas are only marginally affected by this issue.

Among the areas with a high landscape value are the Marine or Regional Natural Park areas (Gulf of Lion, Cap Corse and Agiate and the Camargue), the National Park areas (the Calanques and Port-Cros) or the reserve areas (Scandola).

The reliability of the results is very good because the criteria used to qualify the level of landscape challenge could be precisely located on the vocation zones.

4.4.2. Air quality

QUALIFICATION OF THE SPECIFICITIES OF THE QUALITY OF COASTAL AIR

Air quality is determined by the quantities of pollutants (fine particles, heavy metals, etc.) present in the breathable atmosphere. This concentration of pollutants evolves

depending on local emissions, regional inputs, dispersion and transformation phenomena.

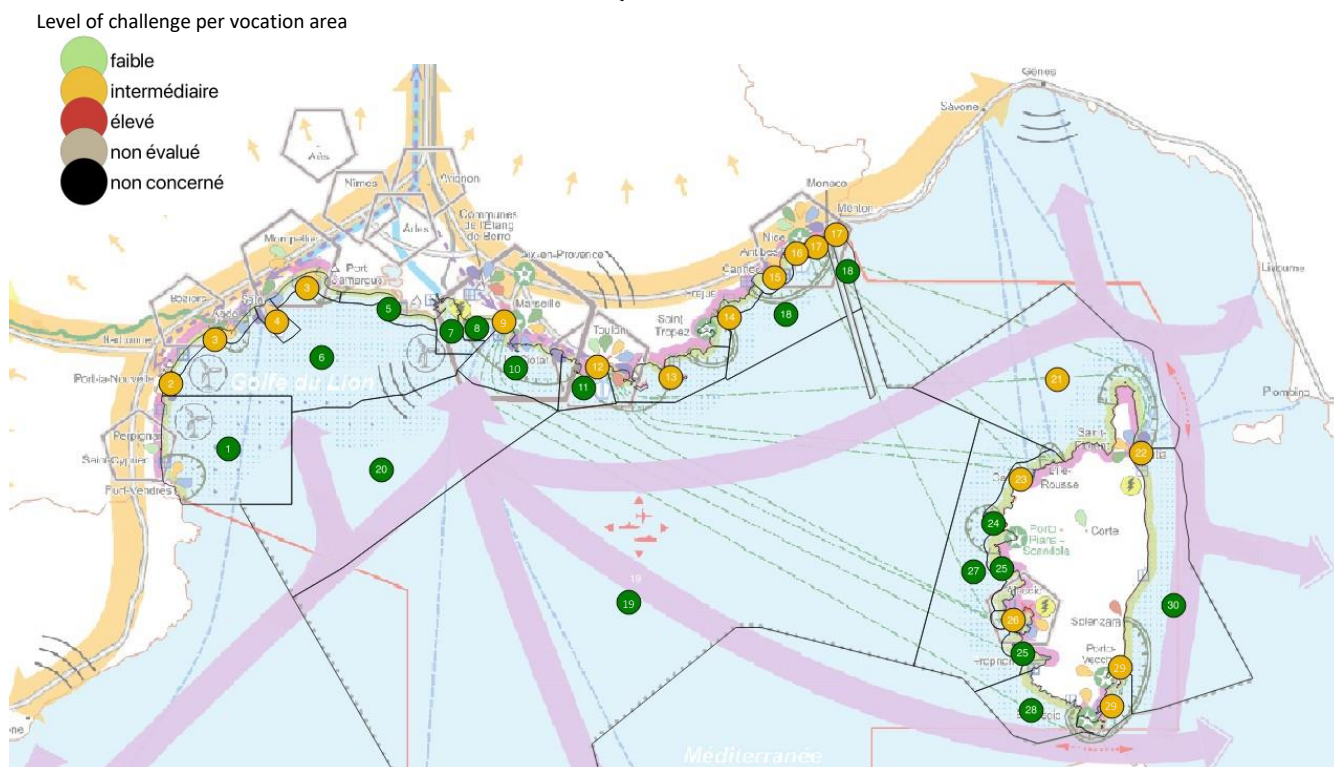
The analysis of the air quality theme of the 3 environmental profiles of the 3 regions (new and/or old) of the Mediterranean coast (Provence-Alpes-Côte d'Azur and Languedoc-Roussillon and Corsica) shows us that :

- In Provence-Alpes-Côte d'Azur, air quality is generally degraded, particularly on the coast where the concentration of people and activities is very high. This deterioration can be explained by:
 - urban pollution mainly due to transport in the region's three main seaside conurbations (Aix-Marseille, Toulon, Nice);
 - industrial pollution around the Etang de Berre area;
 - photochemical ozone pollution among the highest in Europe, taking into account the climatic conditions.
- In Occitanie, on the perimeter of the ex-region Languedoc-Roussillon, the indices which provide a global daily information on the quality of the air are very good up to two thirds of the days of the year according to the territories and previous years. They are average to mediocre the rest of the time, and very rarely bad. In most cases, it is the presence of ozone that is responsible for the deterioration of the index, but sometimes it can also be particulate matter or nitrogen dioxide.
- Corsica is confronted with atmospheric pollution that is produced locally or on the continent and then carried by the winds, or both. The main negative points raised in the 2016 Environmental Profile are:
 - the annual average for NO₂ (nitrogen dioxide) was exceeded at the station measuring traffic in Bastia;
 - a regional exceedance of the human health protection target value for ozone;
 - saturation of roads and an increase in maritime traffic.

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

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGE

AIR QUALITY ISSUE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

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As air quality was not assessed, the spatialization of the issue by use area was based on the distribution of activities that may exert pressure on air quality.

On the scale of the coastline, in terms of the level of concern, half of the vocation zones present a level of concern qualified as "low" and the other half as "intermediate" due to the presence of a port in a certain zone and/or the strong presence of maritime traffic.

The reliability of the results is good because the potential sources of pressure could be located in the vocation areas.

4.4.3. Natural and human risks²¹

QUALIFICATION OF NATURAL HAZARDS POSING STRONG CHALLENGES

Coastal erosion risk

On the Mediterranean coast, coastal erosion affects one eighth of the coastline. This is almost half the average for the entire metropolitan coastline. The level of erosion varies greatly from one department to another. It is very low in Southern Corsica

²¹ Data from the Strategic Environmental Assessment of the Western Mediterranean APME August 2014

where only 5% of the linear is affected. The coasts are mainly made up of metamorphic, plutonic or volcanic cliffs that are not very sensitive to erosion. It is less than 20% in the Pyrénées Orientales (17%), Aude (18%), Var (17%) and Haute-Corse (12%). The level of erosion of the documented natural coasts is clearly higher in Hérault (36%), the short coastline of Gard (76%), Bouches-du-Rhône (30 %) and the Alpes-Maritimes (36%).

Many tourist communities are affected by the erosion of their sandy or pebble beaches. On the Occitanie coastline, vast sectors of beaches are affected, with significant linear stretches. In Provence-Alpes-Côte d'Azur, apart from the beaches of the Camargue, it is mainly small sandy bays that are concerned. In Corsica, the eroded areas are mainly located on the eastern coast, which is mainly made up of large sandy areas. The large bays of the western coast are also concerned: Gulf of Valinco, Gulf of Ajaccio and Gulf of Sagone.

The risk of marine submersion

Just over 1,220 km² of coastal territories are located in low-lying areas around the Mediterranean, nearly 400 km² in Occitania, 790 km² in Provence-Alpes-Côte d'Azur and 40 km² in Corsica.

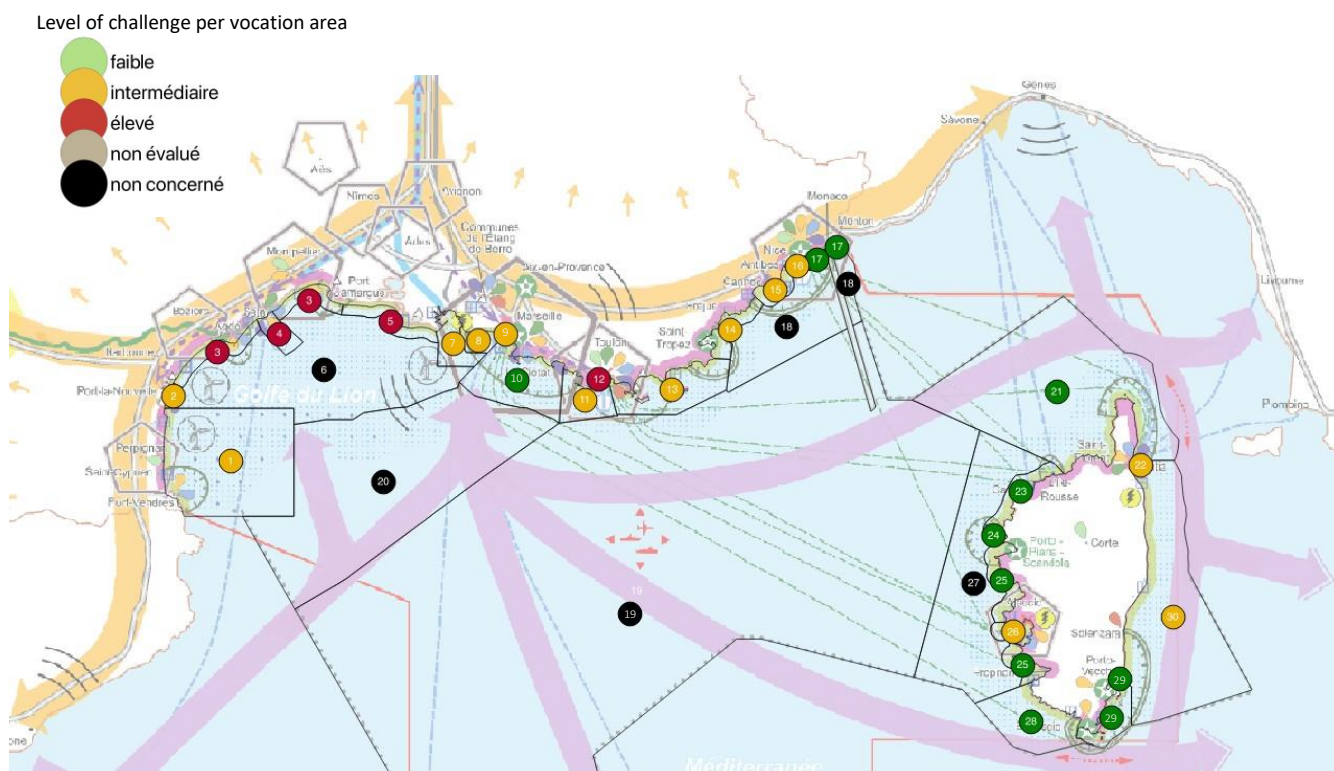
The main lowlands of the Mediterranean are:

- The Occitanie lidos (Le Barcarès, Leucate, Gruissan, Agde, Sète, Frontignan etc.) with a large number of secondary residences and campsites;
- The Camargue with two municipalities that are particularly affected: Saintes-Maries-de-la-Mer and Grau-du-Roi;
- Some localized areas of the Côte d'Azur: Toulon, Hyères, Fréjus, (etc.).

In the Mediterranean, it is estimated that almost 88,500 people live in low-lying areas, mainly in Provence-Alpes-Côte d'Azur (52%) and Occitania (43%). This represents just over 10% of the 840,000 people living in low-lying areas of the entire metropolitan coastline. In terms of housing, this proportion is twice as high, due to a large number of second homes.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGE

NATURAL AND HUMAN RISKS



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices

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As the risk was not assessed, the spatialization of the issue by vocation area was based on the distribution and combination of different types of risk in the same vocation area (industrial risk, flooding/submergence, coastline erosion and tsunami).

At the scale of the coastline, in terms of level of challenge, 8 vocation zones present a level of challenge qualified as "low", 13 zones present a level of challenge qualified as "intermediate" and 4 zones present a level of challenge qualified as "high". Offshore areas are not affected by this type of issue. This level of challenge presents spatial disparities that can be highlighted:

- The vocation zones of the Occitanie and Provence-Alpes-Côte d'Azur regions have a level of risk that is described as "intermediate" or even "high" in certain areas, due to the combination of several types of risk in these zones, and in particular the presence of the tsunami risk on all the coasts ;
- Most of Corsica's vocation zones are qualified as facing a "low" challenge with this issue because they present very little risk, particularly the absence of tsunami risk and coastline erosion. Only the rather anthropised areas (Bastia and the Gulf of Ajaccio) are exposed to industrial and submersion risks.

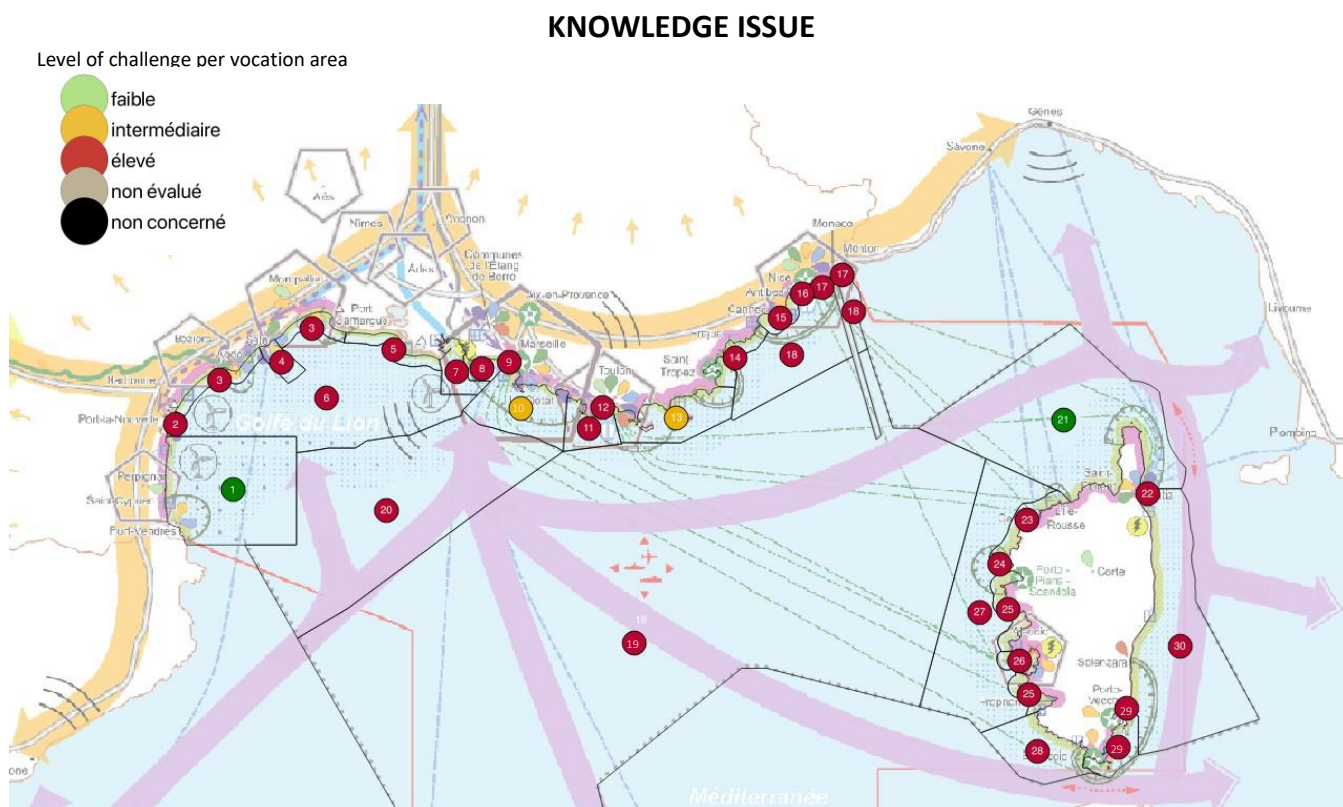
The reliability of the results is rather good because the risks could be globally located on the vocation areas.

4.4.4. The organisation of environmental knowledge and research

QUALIFICATION OF KNOWLEDGE ISSUES

The Mediterranean coast is characterised by a large number of actors involved in knowledge, research or training. Nevertheless, there are still themes or geographical sectors that are insufficiently known, which implies maintaining and increasing the human and financial resources dedicated to these fields in order to take into account, among other things, the effects of climate change, the adaptation of populations and activities to coastal risks, and the reactivity of the training offer aimed at professionals wishing to retrain, for example.

SYNTHETICAL SPATIAL DISTRIBUTION AT THE SCALE OF THE VOCATION ZONES: LEVEL OF CHALLENGES REQUIRING KNOWLEDGE



Data source: environmental evaluation of the Sea Basin Strategy Document action programme carried out by Epices
 Background map: The maritime and marine activity of the Mediterranean coast - DIRM MED, Cerema MED, SHOM - Copyrights = Mapinfo Corporation - Realisation : Cerema Normandie Centre - Date: 07/2019
 Coordinate system: WGS84 / Pseudo Mercator Edition: 01/2021, Epices

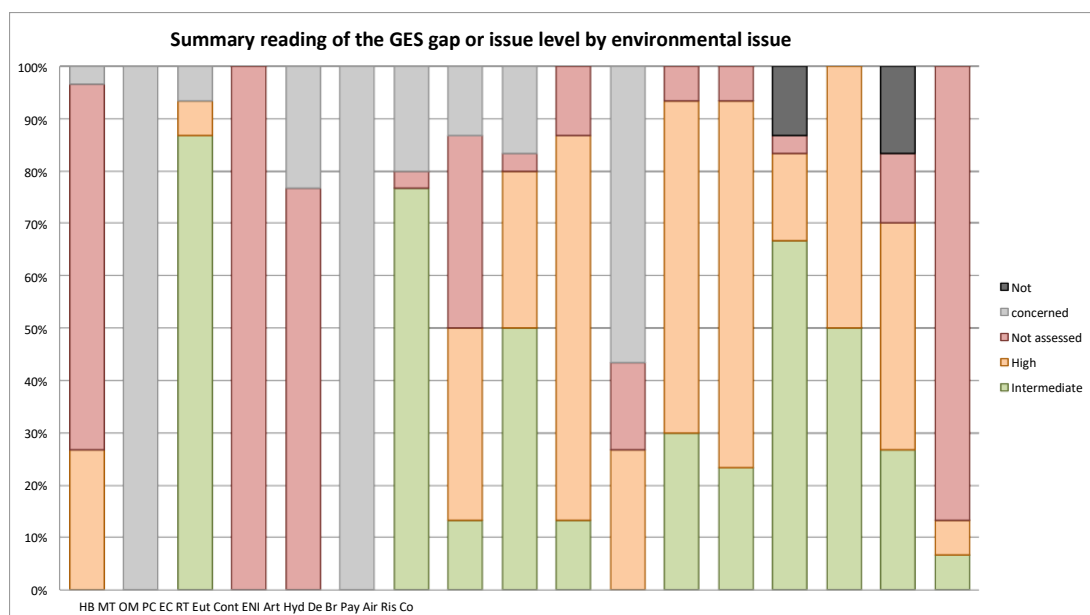
The qualification of the level of challenge linked to knowledge on the basis of the criteria adopted (presence of nature parks, a nature reserve, Natura 2000 areas at sea and projects subject to impact assessment) highlights that 26 vocation zones present a level of challenge in terms of need for knowledge qualified as "high" and 4 zones present a level of challenge in terms of need for knowledge qualified as "intermediate" to "low".

Among the areas with little need for knowledge, i.e. areas with a high level of knowledge, we find the Marine Natural Park areas (Gulf of Lion and Cap Corse and Agriate) and the National Park areas (the Calanques and Port-Cros).

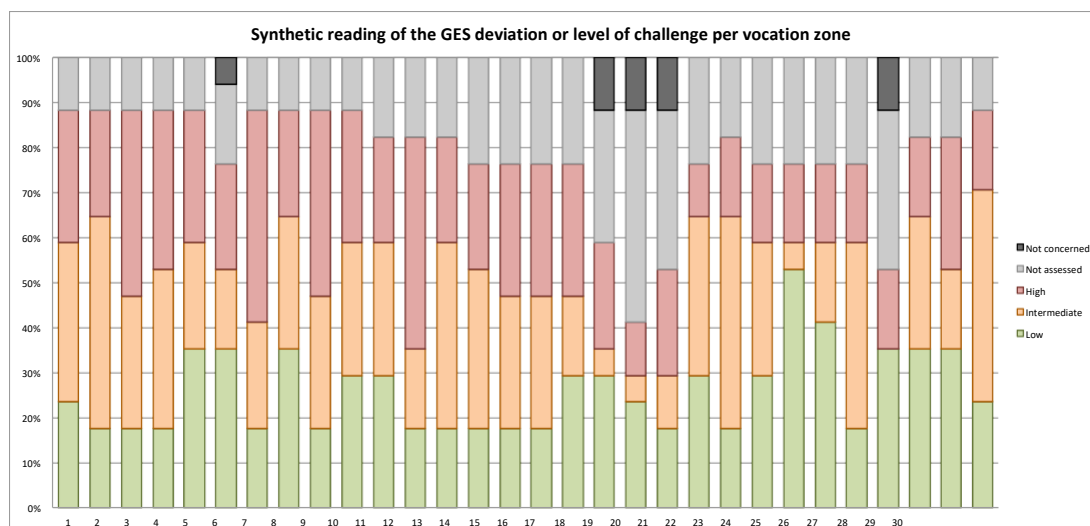
The reliability of the results is good because the criteria used to qualify the level of knowledge at stake could be precisely located in the vocation zones.

4.5. Summary of the environmental issues of the coastline

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



The percentages are relative to the number of vocation zones (i.e. 30). 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 7, just over 50% of the issues have an GES deviation or a high issue level.

The most important issues for the coastline concern benthic habitats, fish and cephalopods, commercial species and knowledge, where the gap with the GES is high for the vast majority of the areas of interest. Mammals and turtles as well as food webs do not show an assessment of good status, hydrographic conditions and, to a lesser extent, commercial species show an insufficiently assessed deviation from GES. The weakly assessed issues concern in particular areas that are

further offshore. The issues with a rather low GES deviation over a large majority of the vocation areas are sea birds, eutrophication and landscape. It should be noted that 50% of the vocation zones have a low GES deviation on air and non-native species issues. 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.

The distribution of the GES gap or stake level by vocation zone shows a majority of zones where between 15 and 35% of the stakes have a low GES gap or stake level (28 zones). The areas with the lowest GES deviation are areas 24 (Scandola) and 25 (Western coast of Corsica). Offshore areas are among the least assessed areas.

5. Impact analysis

5.1. Situation in the absence of an Sea Basin Strategy Document

A "hot spot" of biodiversity on a global scale, the Mediterranean Sea includes remarkable habitats (seagrass beds, coralligenous beds, coastal lagoons, etc.) that host nearly 10% of the species listed worldwide, even though the area represents only 1% of the world's maritime surface. The sea is almost entirely enclosed and has a low rate of water renewal, making it particularly vulnerable to external pressures and the introduction of exogenous factors. Due to its geographical situation, the Mediterranean Sea is an area with high strategic stakes and represents a support for unparalleled economic activities at a global level (25% of maritime freight, 30% of oil traffic, 31% of tourism) and is characterised by a demographic growth of a

potentially large population on its shores (200 million inhabitants by 2020)²².

The Mediterranean coast of mainland France is part of this general presentation of the Mediterranean environment. As we have seen in the previous section, many environmental issues are of concern:

- a significant GES gap for Benthic Habitats, Fish and Cephalopods and Commercial Species, and an unassessed GES for Mammals and Turtles and Food Webs;
- strong challenges on contaminants, sea-floor integrity, hydrodynamic conditions, litter and noise;
- equally important issues on air pollution and risks.

This situation of environmental issues results in particular from the numerous pressures exerted by the existing socio-economic activities on the coastline. According to the Sea basin strategy, the main pressures are the following:

- the most significant physical pressures correspond to the artificialization of the coastline, the abrasion of the coastal bottoms (resulting from anchoring on protected habitats) or the integrity of the sea-floor, which may be affected by extractions (dredging, beach nourishment). The problems linked to noise emissions (from maritime traffic or underwater works) and to the accumulation of litter 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 the consequences of highly urbanised areas (litter water discharge). The input of litter or contaminants in connection with ships transiting the Mediterranean can also be mentioned.
- Finally, with regard to biological pressures, the introduction of invasive species and the selective extraction of species by fishing, both professional and recreational, are the pressures that have the greatest impact on the Mediterranean ecosystem.

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

²² Source: Sea basin strategy page 11.

- **tourism and leisure activities linked to the sea:** in 2013, the **total number of overnight stays** in the coastal departments of the MED coastline represented **45% of overnight stays on the mainland coastline**, which is an **increase of 8% since 2008**. Secondary residences account for almost 80% of the supply of tourist beds. The number of jobs linked to coastal tourism in the three regions of the coastline is 116,000 and represents **almost 50% of total employment in coastal tourism in France** in 2015. Moreover, with 219 marinas representing 164,000 berths (54% of the berths in mainland France), **the Mediterranean coastline has the largest number of marinas**. The Provence-Alpes-Côte d'Azur region alone hosts a **quarter of the world's yacht fleet**. Finally, the MED coastline has 761 water sports facilities that are certified or affiliated to a sports federation and nearly 110,000 members in the federations of sailing, underwater studies and sports, canoeing, rowing, surfing, water skiing, freediving, jet skiing and sand yachting. In particular, it represents **32% of sailing enthusiasts in all the coastal departments of Metropolitan France** and **38% of those practising underwater sports**, with 85% of diving sites on offer;

- **maritime transport:** the MED coastline is the **second maritime coastline through which goods transit by sea**. In fact, it represents **28% of the goods traffic in Metropolitan France** (95 million tonnes, 50% of which were petroleum products) in 2015, notably via the port of Fos. **Passenger traffic on the Mediterranean coast represents 42% of metropolitan traffic** (12.4 million passengers) and mainly concerns cruises: in 2014, three quarters of cruise-related traffic took place in Mediterranean ports, which saw the number of cruise passengers triple between 2000 and 2014. Marseille is France's leading cruise port and is experiencing significant growth as the number of cruise passengers transiting through the port has increased threefold since 2008. However, the Covid-19 health crisis could have a significant impact on this activity. Finally, ferry traffic to Corsica from the ports of Marseille, Nice and Toulon is also significant.

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

- **fishing:** the **Mediterranean coastline** is distinguished from the other coastlines by a majority of small-scale fisheries located along the entire coastline. Offshore fishing (trawlers, seiners) is located in the Gulf of Lion and the western basin. The coastline plays host to 33% of the metropolitan fleet with 1,467 vessels and 1,967 embarked sailors (FTE). More than 90% of the fleet is in the less than 12m category. In the Mediterranean, **recreational fishing is practised regularly, with a peak in the summer period**. It is divided between fishing

on a sporting basis, supervised by three federations (6,500 recreational fishermen are members of the FFFPM23) and unsupervised recreational fishing (between 200,000 and 300,000 people fish along the coast). In 2005, there were almost **7 million recreational fishing trips**. Shore fishing is the dominant mode, practised by nearly 60% of the coast's recreational fishermen, who are essentially regular and very regular fishermen;

- **aquaculture and fish farming at sea:** the Mediterranean coastline is the least concerned by shellfish production compared to the other coastlines. It accounts for 12.5% (1,080 FTE) of national shellfish farming jobs and 18% of companies (2014), and there has been a downward trend in employment since 2009. Locally, however, this activity is important for the territories concerned, especially as production is concentrated in the Hérault department, where the main production sites are located in the lagoons and particularly in the Thau lagoon, where there is a concentration of 90% of the oyster production of the coast. Fish farming is mainly present on the coast of the Provence-Alpes-Côte d'Azur region and Corsica, with about twenty production sites (cage farming for the fattening of sea bass and sea bream). It is in first place in terms of national production in France, with approximately 200 FTEs (2013) generating a turnover of €21 million. The vast majority of the production is destined for domestic and foreign export;

²³ French Sea Fishing Federation

• **Shipbuilding:** whereas 30 years ago, shipbuilding collapsed in the Mediterranean, it has started up again on the coast, thanks in particular to **ship repair**, with the ports of La Ciotat providing services for luxury yachts and Marseille for cruise ships, making the region an **important centre in this field at an international level**. In addition to these two ports, Toulon should also be mentioned, particularly for the construction of defence ships;

• in a more prospective way, the **development of MREs** and in particular floating wind power. Three of the four pilot floating wind farm projects underway in France are located on this coastline. These projects are still in the development stage, with commissioning expected by 2025. Following on from these projects, two tenders for commercial floating wind farms are planned for 2022. The Sea Basin Strategy Document identifies four macro-zones potentially suitable for the development of commercial floating wind turbines, which will serve as a reference for the State services to discuss future projects from operators.

Finally, the **maritime public works** are relatively less important than on other coastlines, with the exception of dredging activities in the port of Marseille.

In order to try to clarify the evolution of environmental issues in the absence of a Sea Basin Strategy Document, 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 is given in the table below.

Activity	Summary	Summary reliability
Beach activities	↗	+
Agriculture	↘	++
Aquaculture	↘	+
Artificialization of the coastline	↗	++
Underwater cables	↗	+
Shipbuilding	↗	++
Defence	↗	+
Extraction of materials	↘	+
Industries	↘	+
Recreational boating	→	+
Recreational fishing		
Professional fishing	↘	++
Energy production	↗	+
R & D	→	+
Maritime transport	↗	+
Maritime public works	↗	+

N.B.: no trend could be defined for recreational fishing due to the lack of indicators. However, according to the DIRM's expertise, recreational fishing activity is stable.

Two important findings emerge from this table:

- on the one hand, the most important activities on the coast have been growing in recent years: seaside activities and maritime transport in particular;
- on the other hand, the reliability of these trend estimates remains limited, in the absence of an effective system for monitoring the evolution of the pressures exerted by socio-economic activities, which has yet to be built (see part 6 of this report).

It could be deduced from the first observation that, in the absence of a Sea Basin Strategy Document, pressures will continue on the marine environment and that the situation of many 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 two reasons:

(1) 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;

(2) 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 issues²⁴

5.2.1. Impacts of the different actions of the DPA

I- ADAPTING THE COASTLINE AND ITS ACTIVITIES

1.1.1- Supporting leisure activities towards a more sustainable model

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
D01-HB-OE09-AN1	Implementing the Mediterranean strategy for the management of ships' moorings and anchorage	P			P	P	P				P				P			P
D01-HB-OE09-AN4	Develop and implement a sustainable cruise management strategy for the Mediterranean	P			P	P	P				P				P			P
D01-HB-OE09-AN2	Implementing the sustainable management strategy for Mediterranean diving sites	P	P		P	P	P				P				P			P
D01-MT-OE01-AN1	Strengthen the supervision and regulation of outdoor sports and recreation affecting marine mammals and of commercial activities for marine mammal watching		P															
D01-OM-OE06-AN2	Structuring the practice of coastal and marine sports and leisure activities (information, awareness-raising and regulation) on species and environmental sensitivity issues	P	P	P					P				P	P				

This part of the action plan is about guiding leisure activities towards a more sustainable model. Composed of 5 new actions, all environmental, it is likely to generate 29 impacts, all positive.

These positive impacts concern 12 issues and more specifically, habitats, mammals and turtles, fish and cephalopods, commercial species, food webs, sea-floor integrity, landscape and knowledge. Each action has between 6 and 8 impacts, with the exception of the action "*Strengthen the supervision and regulation of outdoor sports and leisure activities affecting marine mammals and of commercial marine mammal watching activities*", which only concerns the issue of mammals and turtles.

1.1.2- Offering quality tourism

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
D1-HB	Strengthen territorial cooperation to participate in the deployment of eco-tourism on the Mediterranean coast	P	P	P	P				P				P				P	
LITT-MED01	Improving the quality of bathing water on the coast	P	P	P	P			P	P				P					P
D06-OE02-AN1	Improving the management of seagrass beds on beaches by reconciling social acceptability with environmental management issues erosion and the protected species	P		P	P		P				P		P		P		P	

²⁴ All the tables and analyses of the impacts of the Sea Basin Strategy Document actions can be found in Annex 4 of the environmental report

This part of the action plan concerns actions to provide quality tourism. Composed of 3 new actions, including 2 socio-economic actions and 1 environmental action, it is likely to generate 23 impacts, of which a large majority are positive (16 impacts) and a significant proportion are uncertain (7 impacts).

The positive impacts concern 13 issues, including benthic habitats, sea birds, fish and cephalopods and litter. Most of the positive impacts are related to the actions concerning the improvement of bathing water on the coastline and the improvement of the management of Posidonia banks on the beaches.

Uncertain impacts relate to 7 issues. They are linked to the action concerning the reinforcement of territorial cooperation to participate in the deployment of eco-tourism, which could be positive only if this form of tourism were to replace "classic" tourism, which would then allow a decrease in the pressures linked to frequentation.

1.1.3- Make the coastline, the sea and its activities accessible to all		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
LAM-MED01	Strengthen sustainable access to the coastline, beaches and water activities for people with special needs.																	
LAM-MED02	Support the improvement of facilities allowing access to the sea for all and integrating innovation																	
LAM-MED03	Encourage and strengthen access to the practice of water and underwater sports, whether on a long-term or occasional basis, particularly for young people, people who are far from the coast, and people who are not on the coast who have special needs.																	

This part of the action plan concerns actions aimed at making the coastline, the sea and its activities accessible to all. Composed of 3 new actions, all socio-economic, it is likely to generate 14 impacts, almost all of which are of an uncertain nature.

Only one issue has a positive impact: air quality.

The uncertain impacts concern 8 issues, in particular benthic habitats, mammals and turtles, sea birds, sea-floor integrity and litter. They are essentially linked to actions concerning (1) the support of the improvement of facilities allowing access to the sea for all and (2) the reinforcement of access to the practice of water and underwater sports, on a long term or occasional basis, in particular for young people, populations far from the coast, and people with specific needs. These actions may have an effect on the increase in water sports users, the intensity of which remains to be estimated, and may impact on habitats and species.

There is no foreseen impact of an action aimed at enhancing sustainable access to the coastline, beaches and water activities for people with special needs.

1.2.1- Reduce the impact of artificialization		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
D06-OE01-AN1	Developing a strategic vision of a "zero net land development" coastline	P	P	P	P	P	P				P	P			P		P	P
D06-OE01-AN2	Support the implementation of the ARC sequence at sea in the context of authorisations for projects that lead to the artificialization of the marine environment	P	P	P	P	P	P				P						P	P
D07-OE03-AN1	Promote land-sea connectivity in estuaries and lagoons in conjunction with what is being done on ecological continuity under the River Basin Management Plan and PLAGEPOMI, by intervening with obstacles impacting currentology and sedimentology	P		P	P	P	P				P	P			P		P	P
D07-OE04-AN1	Define how to better take into account the need for freshwater supplies to marine environments in the regulations	P		P	P	P	P					P			P			P

This part of the action plan concerns the reduction of the impact of artificialization. Composed of 4 new actions, all environmental, it is likely to generate 38 impacts, all positive.

These positive impacts concern 11 issues and more specifically, habitats, sea birds, fish and cephalopods, commercial species, food webs, sea-floor integrity, hydrology, landscape, risks and knowledge. Each action has between 8 and 11 impacts.

1.2.2- Restoring the marine environment		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
D01-OM-OE05-AN1	Identify, maintain and restore mid-littoral and functional sea bird habitats that are degraded and/or exposed to compression of coastal habitats.	P		P	P	P	P				P	P			P		P	P
D06-OE02-AN2	Continue the territorial implementation of the strategy for the ecological restoration of natural habitats in the Mediterranean	P			P		P				P	P			P			P

This part of the action plan concerns the restoration of the marine environment. Composed of 2 new actions, all environmental, it is likely to generate 17 impacts, all positive.

These positive impacts concern 10 issues and more specifically, habitats, fish and cephalopods, food webs, sea-floor integrity, hydrology, landscape and knowledge. Each action has between 7 and 10 impacts.

1.2.3- Reduce the impact of activities and anthropisation		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
LITT-MED05	Support the contractual management of the public maritime domain (DPM) on the coast, taking into account all the strategic targets of the Sea Basin Strategy Document.	P		P		P			P		P	P	P		P		P	
D01-HB-OE06-AN1	Strengthen the consideration of benthic habitats in offshore authorisations	P									P	P			P		P	P
D01-OM-OE04-AN1	Monitor and control introduced and domestic species on bird breeding sites			P			P											
D01-OM-OE06-AN1	Take greater account of the sensitivity of species (sea birds, marine mammals and turtles) to disturbance in the marine authorisations and local regulations.	P	P	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
AT-09	Improve understanding and consideration of the cumulative effects of human activities and ecological carrying capacity	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
AT-10	Structuring the training of state and local government services in the consideration of environmental targets in their missions	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

This part of the action plan concerns the reduction of the impact of activities and anthropisation. Composed of 7 new actions, 6 of which are environmental, and 1 socio-economic, it is likely to generate 68 impacts, all of which are positive.

These positive impacts concern all the issues and more specifically, habitats, sea birds, commercial species, food webs, sea-floor integrity, landscape and knowledge. Each action has between 2 and 17 impacts. The actions on improving the consideration of the cumulative effects of human activities and on the training of State services and local authorities are cross-cutting actions affecting all the issues.

1.3- A coastline resilient to risks		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
LITT-MED02	Strengthen the means to fight accidental pollution at sea and on the coast								P								P	
LITT-MED03	Roll out the national strategy to the Mediterranean coast, at a relevant territorial scale and in collaboration with the State and local authorities, looking at integrated coastline management and monitoring of it.	P		P							P	P					P	P
LITT-MED04	To help local authorities prepare for a tsunami in the Mediterranean, and to work on operational planning and informing the public.																P	
LITT-MED06	Leading and harmonising the collection, banking and analysis of data relating to the evolution of the coastline and the coastline, and to promote their communication to all relevant audiences.																P	P
D01-HB-OE06-AN3	Sharing better "upstream" knowledge of the impacts of operations to reduce the vulnerability of coastal areas	P									P	P			P		P	P

This part of the action plan concerns actions to make the coastline more resilient to risks. Composed of 5 new actions, 4 of which are socio-economic, and 1 environmental, it is likely to generate 17 impacts, all of which are positive.

These positive impacts relate to 8 issues and more specifically to risks and knowledge. Each action has between 1 and 6 impacts. In view of the nature of these management actions concerning oil spills, coastline, tsunamis (etc.), all the actions in this section have a positive impact on risks.

1.4- A self-sufficient coastline thanks to marine renewable energy

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	Fro m	Br	Pay	Air	Ris	Co
EMR-MED01	Capitalise on and disseminate knowledge about offshore floating wind turbines and their impact on the environment, ensuring that it is monitored of the various projects.	P	P	P	P	P	P		P	P	P	P		P	P	P		P
EMR-MED02	Deploy a competitive, sustainable and structured "commercial floating wind turbine" sector on the scale of the Mediterranean coast.	N	N	N	U	U	U		N	U	N	U		N	U	P		P
EMR-MED03	Assess the potential and support the development of the thalassothermal sector on the Mediterranean coast	N	N		U	U	U		U	U	N	U		U		P		P
D01-OM-OE02-AN1	Prefiguring a national coordination body for coastal scientific councils (CSF) on offshore wind energy			P	P	P								P				P

This part of the action plan concerns actions to make the coastline self-sufficient thanks to marine renewable energy. Composed of 4 new actions, 3 of which are socio-economic, and 1 environmental, it is likely to generate 45 impacts, of which 23 are positive, 9 negative and 13 uncertain, on 14 issues.

This relatively mixed assessment is linked to the variability of impacts depending on the nature of the actions grouped in this section. Thus, actions related to the deployment of offshore wind, in accordance with the EPP, and the development of thalassothermal energy, concentrate the negative and uncertain impacts. These actions also have a positive impact on air quality and knowledge. The action on the capitalisation/dissemination of knowledge on offshore wind turbines and their impact on the environment is the focus of the majority of positive impacts.

SUMMARY PART I -ADAPTING THE COASTLINE AND ITS ACTIVITIES

(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, it appears that the actions of the plan relating to it are likely to generate nearly 251 potential impacts on the 17 environmental issues. About 83% are considered positive, 13% uncertain and 4% negative.

With regard to the three sets of issues defined in the initial assessment, 47% of the impacts concern issues related to the components of the marine environment, 29% concern issues related to pressures on the marine environment and 24% concern other societal issues.

The issues most strongly concerned in this section are benthic habitats (26), knowledge (22), fish and cephalopods (21), sea-floor integrity (21), food webs (18), landscape (18). The issues least concerned are litter (9), noise (8), air (6), NIS (6) and eutrophication (3).

II- MANAGING FISHERIES RESOURCES - SUPPORTING THE FISHING AND AQUACULTURE PROFESSIONS

2.1.1- Identifier et protéger les zones fonctionnelles en accord avec la profession		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
D01-HB-OE09-AN3	Reducing the impact of gangui fishing in Posidonia meadows	P			P	P	P								P			
D01-PC-OE5-AN1	Strengthen the protection of fisheries functional areas of importance (HFAI), including the establishment of pilot Fisheries Conservation Areas (FCAs) on each coastline	P			P	P	P	P	P		P							P

This part of the action plan concerns the identification and protection of functional areas in agreement with the profession. Composed of 2 new actions, all environmental, it is likely to generate 13 impacts, all positive.

These positive impacts concern 9 issues and more specifically, habitats, fish and cephalopods, commercial species and food webs. Each action has between 5 and 8 impacts.

2.1.2- Réguler les prélèvements et réduire les atteintes aux maillons sensibles de la chaîne trophique		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
D01-PC-OE01-AN2	Raise awareness and train users to recognise and deal with elasmobranchs that may be caught incidentally, and improve reporting of such accidental catches				P	P	P											P
D01-PC-OE01-AN1	Review the regulations on elasmobranch catches and, on this basis, identify the actions to be implemented at national and local level				P	P	P											P
D01-PC-OE02-AN1	Develop and implement a multi-species National Action Plan (NAP) for elasmobranchs				P	P	P											P
D01-PC-OE3-AN1	Develop and implement a national amphihaline migratory plan for optimised management of migratory fish throughout the whole of the land-sea continuum	P			P	P	P				P	P						
D01-PC-OE3-AN2	To avoid or reduce 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-OE02-AN1	Identify priority stocks of local importance that are not under community management for which management could be established or improved, depending on their conservation status and socio-economic importance, and draw up management plans	P	P	P	P	P	P											P
D03-OE02-AN2	To reflect on the extension of the competences of control of agents operating in the network of marine protected areas under the transport codes and the CAPM	P	P	P	P													P
D04-AN1	Contribute to a better management of species harvesting fodder at European level.	P	P	P	P	P	P											P

This part of the action plan concerns the regulation of abstractions and the reduction of damage to sensitive links in the food chain. Composed of 8 new actions, all environmental, it is likely to generate 42 impacts, all positive.

These positive impacts concern 9 issues, most notably fish and cephalopods, commercial species, food webs and knowledge. Each action has between 4 and 7 impacts.

2.1.3- Supporting recreational fishing towards sustainable practices		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
PM-MED11	Ensuring the conditions for sustainable recreational fishing	P			P	P							P					
PM-MED12	On a pilot site, define and test new tools for counting catches and recreational fishermen																	P
D03-OE3-AN1	Harmonise and strengthen the regulations on recreational fishing and make anglers aware of their implementation	P	P	P	P	P	P						P					P

This part of the action plan concerns the support of recreational fishing towards sustainable practices. Composed of 3 new actions, 2 of which are socio-economic and 1 environmental, it is likely to generate 13 impacts, all of them positive.

These positive impacts concern 8 issues and more specifically, benthic habitats, fish and cephalopods, commercial species and litter. Each action has between 1 and 8 impacts.

2.2- Supporting the profession and changing consumption patterns

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	Fro m	Br	Pay	Air	Ris	Co
AQUA-NAT01	Planning future aquaculture areas on the coast	N		N	N	U		U	N	N	N	N	N		U			P
AQUA-NAT02	Supporting the procedures for examining applications for authorisation to exploit marine cultures	P		P	P	P		P	P	P	P	P	P		P			P
AQUA-PM-MED06	Supporting fisheries and aquaculture products towards environmental certification, and their promotion to consumers and local and export markets.	P			P	P			P	P	P	P	P					
AQU-PM-MED07	Supporting multi-activity sustainable fisheries and aquaculture and developing emerging bioeconomy sectors towards a model that is environmentally and economically stable	U			U	U		P	P	U	U	U	U					P
AQUA-PM-MED08	By respecting the existing economic balance (fish markets in particular) and the needs of professionals and territories, to structure the methods and consumption channels for seafood products from fishing and aquaculture in order to enhance the value of the products	U			U	U			U	U	U	U	U					
PM-MED10	Continue and structure research and innovation efforts to reduce the environmental impact of ships and gear.	U	P		P	P	P				U		P	U		P		P

This part of the action plan sets out actions to support the profession and change consumption patterns. Composed of 6 new actions, all socio-economic, it is likely to generate 60 impacts, the majority of which are positive (31 positive impacts), 21 uncertain and 8 negative on 16 issues.

The action concentrating all the negative impacts is linked to the planning of future aquaculture zones on the coast, which aims to develop aquaculture activity. The intensity of these potentially negative impacts will depend on the outcome of the proposed planning, whether or not new aquaculture activities are actually developed, and the nature of these new activities, as the impacts are not the same depending on the activity considered (e.g. between oyster and marine fish farming). Finally, it should be noted that this action AQUA-NAT01 has a form of synergy with action AQUA-NAT02, which makes it possible to reduce these potential negative impacts.

The actions with the most uncertain impacts are the 2 actions aimed at (1) supporting the multi-activity of sustainable fishing and aquaculture and to develop the emerging sectors of the bio-economy towards a stable environmental and economic model, which concerns a development whose intensity and therefore its potential environmental impact are not currently measured and (2) to structure the modalities and consumption channels of seafood products from fishing and aquaculture to enhance the value of local, seasonal and poor or unknown products, which poses the question of the environmental added value of the development of short circuits.

The actions with the most positive impacts concern three actions that involve support for the procedures for examining applications for authorisation to exploit marine cultures, support for fisheries and aquaculture products towards environmental certification (with a selection of labels offering real environmental added value), and research to reduce the environmental impact of fishing vessels and gear.

SUMMARY PART II -MANAGING FISHERIES RESOURCES - SUPPORTING THE FISHING AND FISHING INDUSTRY'AQUACULTURE

(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, it appears that the related actions of the plan are likely to generate about 128 potential impacts on 16 environmental issues (no impacts on risks). About 77% are considered positive, 17% uncertain and 6% negative.

With regard to the three sets of issues defined in the initial assessment, 55% of the impacts concern issues related to the components of the marine environment, 30% concern issues related to pressures on the marine environment and 14% concern other societal issues.

The issues most strongly concerned in this section are fish and cephalopods (18), commercial species (17), benthic habitats (14) and knowledge (14). The issues least concerned are mammals and turtles (5), eutrophication (4), landscape (3), noise (1) and air quality (1).

III- PROTECT EMBLEMATIC SPECIES AND SPACES

3.1- Fragile or unknown species and habitats

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
D01-HB-OE7-AN1	Strengthen knowledge of the ecological status of red coral in the Mediterranean and ensure, if necessary, its preservation	P				P	P				P				P			P
D01-HB-OE10-AN1	Taking greater account of the sensitivity of deep-sea habitats in the Mediterranean	P				P	P				P							
D01-MT-OE02-AN1	Reduce the impact of incidental catches of marine turtles by training of fishermen and maintaining an adequate network of care centres		P															
D01-MT-OE03-AN2	Reduce the risk of collision for cetaceans along the Mediterranean coastline by submitting a proposal for a Particularly Vulnerable Sea Area (PSSA) to the International Maritime Organisation (IMO), in cooperation with Italy, Monaco and Spain and extend the use of the REPCET system		P				P											
D01-OM-OE01-AN1	Identify and reduce the risks of incidental capture for each of the species of community interest		P	P		P	P											P
D01-OM-OE03-AN1	Develop and implement appropriate management and protection tools for strong challenge sea bird species on the scale of a marine sub-region	P		P	P	P	P		P		P		P		P			P
AT-06	Submitting and implementing a Life project "Mobile marine species"		P	P	P													

This part of the action plan concerns fragile or unknown species and habitats. Composed of 7 new actions, all environmental, it is likely to generate 31 impacts, all positive.

These positive impacts concern 11 issues and more specifically, mammals and turtles, commercial species and food webs. Each action has between 1 and 10 impacts.

3.2- sites and landscapes

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
SPP-MED01	Federate the observation and monitoring networks of coastal and underwater landscapes, to better support strategic policies, and in particular to anticipate, manage and evaluate the effects of climate change on territories and landscapes	P		P											P			P
SPP-MED02	To make the underwater heritage accessible to the general public, with respect for the heritage that is made available, and through innovative practices.	U									U		U		P			

This part of the action plan concerns actions on sites and landscapes. Composed of 2 new actions, all socio-economic, it is likely to generate 8 impacts, 5 of which are positive and 3 uncertain.

The positive impacts mainly concern the landscape issue.

The uncertain impacts concern three different issues related to the action aimed at making the underwater heritage accessible to the general public, the impacts of which are difficult to estimate in relation to the increase in underwater activities.

SUMMARY PART III - PROTECTING EMBLEMATIC SPECIES AND SPACES

The analysis of this part III shows that the related actions of the plan are likely to generate 39 potential impacts on 11 environmental issues (no impacts on hydrology, NIS, eutrophication, noise, air quality and risks). About 92% are considered positive and 8% uncertain.

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 environment

18% of them were concerned with issues related to pressures on the marine environment and 21% with other societal issues.

The issues most strongly affected in this section are benthic habitats and food webs. The issues least concerned are fish and cephalopods, litter and contaminants.

IV- STRUCTURING, COORDINATING AND PROMOTING INNOVATION IN PORTS, MARITIME TRANSPORT, NAUTICAL AND NAVAL INDUSTRIES

4.1.1- Reducing discharges

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	Fro m	Br	Pay	Air	Ris	Co
D08-OE03-AN1	Make digital reporting of discharges mandatory for chemicals at sea by chemical tankers								P									P
D08-OE04-AN1	Identify and equip with effluent treatment systems the dry dock areas of marinas, anchorage areas and boatyards. Raise awareness of good dry docking practices among managers and users	P	P	P	P	P	P		P									
D08-OE06-AN1	Encourage and support the implementation of mutualised dredging and promote the sustainable creation of sediment recovery channels adapted to the territories	P	P	P	P	P	P		P		P							

This part of the action plan concerns the reduction of discharges. Composed of 3 new actions, all environmental, it is likely to generate 17 impacts, all positive.

These positive impacts concern 8 issues and more specifically, habitats, mammals and turtles, sea birds, fish and cephalopods, commercial species, food webs and contaminants. Each action has between 2 and 8 impacts.

4.1.2- Reducing atmospheric inputs

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	Fro m	Br	Pay	Air	Ris	Co
LTT-MED01	Limit/prohibit discharges from open-loop scrubbers in specific zones	P	P	P	P	P	P		P									
D08-OE08-AN2	Reduce airborne contaminant inputs from shipping, including support for local strategies of decarbonation (LNG, CNG, hydrogen, sail)								P							P		

This part of the action plan concerns the reduction of atmospheric inputs. Composed of 2 new actions, all environmental, it is likely to generate 9 impacts, all positive.

These positive impacts concern 8 issues and specifically habitats, species, contaminants and air quality. Each action has between 2 and 7 impacts.

4.1.3- Reducing emissions

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	Fro m	Br	Pay	Air	Ris	Co
D11-OE1-AN1	Collect and disseminate data on impulsive noise from industrial operations		P	P	P	P	P							P				P

This part of the action plan concerns the reduction of noise emissions. Consisting of a single new environmental action, it is likely to generate 7 impacts, all of them positive.

4.2- A port and industrial world as a player in innovation

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
INN-NAT01	Contribute to the dialogue between the State and the sector in terms of R&D support and make State support more visible								P				P			P		P
INN-NAT02	Supporting the digital transformation of companies, the production chain (parent companies and subcontractors) and products of the shipbuilding and nautical industries.																	P
INN-NAT03	Anticipate the needs in terms of skills and job volumes to reinforce the attractiveness of the maritime industries sector																	
INN-NAT04	Deploy the dismantling sector for pleasure craft by providing greater support to the eco-organisations in charge of the sector in the development of the sector, to individuals and to communities, and port managers	P							P				P		P			P
INN-MED05	Draw up a regular assessment of the blue economy at the level of the coastline and encourage the matching of needs of actors with research opportunities																	
PTM-MED-01	Strengthen the role of the port as a vector for the valorisation and transmission of maritime know-how, issues and innovations.														P			P
PTM-MED-02	Promote contractual approaches to better integration of marinas and business in the city, together with the users and citizens, with the aim of reducing nuisance, among other things.								P	P	P	P	P	P		P		
PTM-MED-04	Advancing inter-port cooperation on the basis of common strategies, in line with the Toulon Pact in particular								P	P	P	P	P	P		P		
PTM-MED-06	Extend and perpetuate the dynamic management of berths (quayside or passageways) and/or vessel ownership.	U	U	U	U			U	U		U	U	U					

This part of the action plan concerns the actions for a port and industrial world that is an actor of innovation. Composed of 9 new actions, all of them socio-economic, it is likely to generate 35 impacts, of which 26 positive and 9 uncertain, on 14 issues.

There are 6 actions with positive impacts, mainly concerning contaminants, litter and knowledge. The actions with the most positive impact are those aiming at (1) promoting contractual approaches for a better integration of marinas and commercial ports in the city, with users and citizens, in particular with a view to reducing nuisances, and (2) advancing inter-port cooperation on the basis of common strategies, in line with the Toulon Pact.

Two actions have no identifiable a priori impacts. These are the actions aimed at (1) anticipate the needs in terms of skills and job volumes in order to strengthen the attractiveness of the maritime industries sector and (2) draw up a regular assessment of the blue economy at the level of the coastline and encourage the matching of the needs of the players with research opportunities.

The only action with uncertain impact is the action to extend and sustain the dynamic management of berths (quayside or passage) and/or vessel ownership. The uncertainty lies in the difficulty of knowing whether or not the action will result in an increase in recreational activity.

SUMMARY PART IV - STRUCTURING, COORDINATING AND PROMOTING INNOVATION IN PORTS, MARITIME TRANSPORT, NAUTICAL AND NAVAL INDUSTRIES

The analysis of this part IV shows that the related actions of the plan are likely to generate 68 potential impacts on 16 environmental issues (no impacts on risks). About 87% are considered positive, and 13% uncertain.

With regard to the three sets of issues defined in the initial assessment, 41% of the impacts concern issues related to the components of the marine environment, 41% concern issues related to pressures on the marine environment and 18% concern other societal issues.

The issues most strongly concerned in this section are contaminants. The issues least concerned are landscape, NIS and eutrophication.

V- EDUCATE, RAISE AWARENESS, TRAIN THROUGHOUT LIFE**5.1- Making maritime jobs more attractive**

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
EMP-FOR-MED01	Encourage, structure and coordinate actions to promote, enhance and raise awareness of training and jobs in the maritime professions, and support local authorities in defining their needs and the deployment of their offers.																	P
EMP-FOR-MED02	Create and run a Mediterranean Observatory of Maritime Professions																	P

This part of the action plan concerns actions to make maritime jobs more attractive. Composed of 2 new actions, all of them socio-economic, it is likely to generate 2 impacts, all of them positive and concerning only the issue of knowledge.

5.2- Educate and raise awareness of each category of user

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
AT-02	Developing the network of marine educational areas	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
AT-03	Develop an application integrating regulations and information related to the spaces for the use of pleasure boating	P	P	P	P	P	P						P	P				
AT-05	Implementing marine environmental education projects in schools, colleges and high schools. To be validated with the Ministry of national education]	P	P	P	P	P	P	P	P	P	P	P	P	P	P		P	P
AT-08	Set up coordinated awareness campaigns at the scale of the coastline, adapted to the different categories of sea and coastal users and issues	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

This part of the action plan concerns actions to educate and raise awareness among each category of user. Composed of 4 new actions, all environmental, it is likely to generate 54 impacts, all positive.

These positive impacts concern all issues due to the cross-cutting nature of most of them. Each action has between 8 and 16 impacts.

5.3. Dimensioning control policies to the reality of the issues at stake

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
AT01	Develop the network of strong protection zones and strengthen their control	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				

This part of the action plan concerns actions aimed at tailoring control policies to the reality of the challenges. Composed of 2 new actions, all environmental, it is likely to generate 22 impacts, all positive.

These positive impacts concern 14 issues, as these actions are very cross-cutting in nature. Each action has between 9 and 13 impacts.

SUMMARY PART V - STRUCTURING, COORDINATING AND PROMOTING INNOVATION IN PORTS, MARITIME TRANSPORT, NAUTICAL AND NAVAL INDUSTRIES

At the end of the analysis of this part V, it appears that the actions of the plan relating to it are likely to generate nearly 80 potential impacts on the 17 environmental issues. All impacts are considered positive.

With regard to the three sets of issues defined in the initial assessment, 46% of the impacts concern issues related to the components of the marine environment, 41% concern issues related to pressures on the marine environment and 13% concern other societal issues.

The issues most strongly affected in this section are benthic habitats, sea birds, mammals and turtles, fish and cephalopods, and commercial species. The issues least concerned are knowledge, risks and air quality.

VI- TO REDUCE THE WASTE ON OUR COASTLINE AND IN OUR SEA

6.1- Reduce the inflow of litter from catchment areas and urban areas

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
D10-OE01-AN1	Preventing litter discharges upstream of sewage and stormwater systems	P	P	P	P	P	P		P				P		P			
D10-OE01-AN2	Combating litter in sewage and stormwater systems	P	P	P	P	P	P		P				P		P			P
D10-OE01-AN3	Identify priority landfills and litter accumulation areas and the different funding possibilities for their resorption	P	P	P	P	P	P		P				P		P			P
LITT-MED01	Raising awareness, informing and educating on ocean pollution by litter	P	P	P	P	P	P		P				P		P			
LITT-MED01	Encourage the reduction, collection and recovery of land-based litter impacting the coastline and the sea	P	P	P	P	P	P		P				P					

This part of the action plan concerns actions to reduce the inflow of litter from catchments and settlements. Composed of 5 new actions, all environmental, it is likely to generate 46 impacts, all positive.

These positive impacts concern 10 issues and more specifically, benthic habitats, mammals and turtles, sea birds, fish and cephalopods, commercial species, food webs, contaminants, litter and landscape. Each action has between 8 and 10 impacts.

6.2- Reducing litter from maritime activities

		HB	MT	OM	PC	EC	RT	Eut	Cont	ENI	Int	Hyd	From	Br	Pay	Air	Ris	Co
LITT-MED01	Encourage the reduction, collection and recovery of litter from maritime activities and support activities moving towards sustainable equipment	P	P	P	P	P	P		P				P					P
LITT-MED01	Improve litter management in ports and facilitate the collection of litter when it is caught incidentally.	P	P	P	P	P	P		P				P					P
LITT-MED01	Continue the deployment of the European Clean Ports and Active Clean Ports biodiversity certification	P	P	P	P	P	P	P	P	P			P					

This part of the action plan concerns actions to reduce litter from maritime activities. Composed of 3 new actions, all environmental, it is likely to generate 27 impacts, all positive.

These positive impacts concern 10 issues and more specifically, benthic habitats, mammals and turtles, sea birds, fish and cephalopods, commercial species, food webs, contaminants, litter and knowledge. Each action has 9 impacts.

SUMMARY PART VI - STRUCTURING, COORDINATING AND PROMOTING INNOVATION IN PORTS, MARITIME TRANSPORT, NAUTICAL AND NAVAL INDUSTRIES

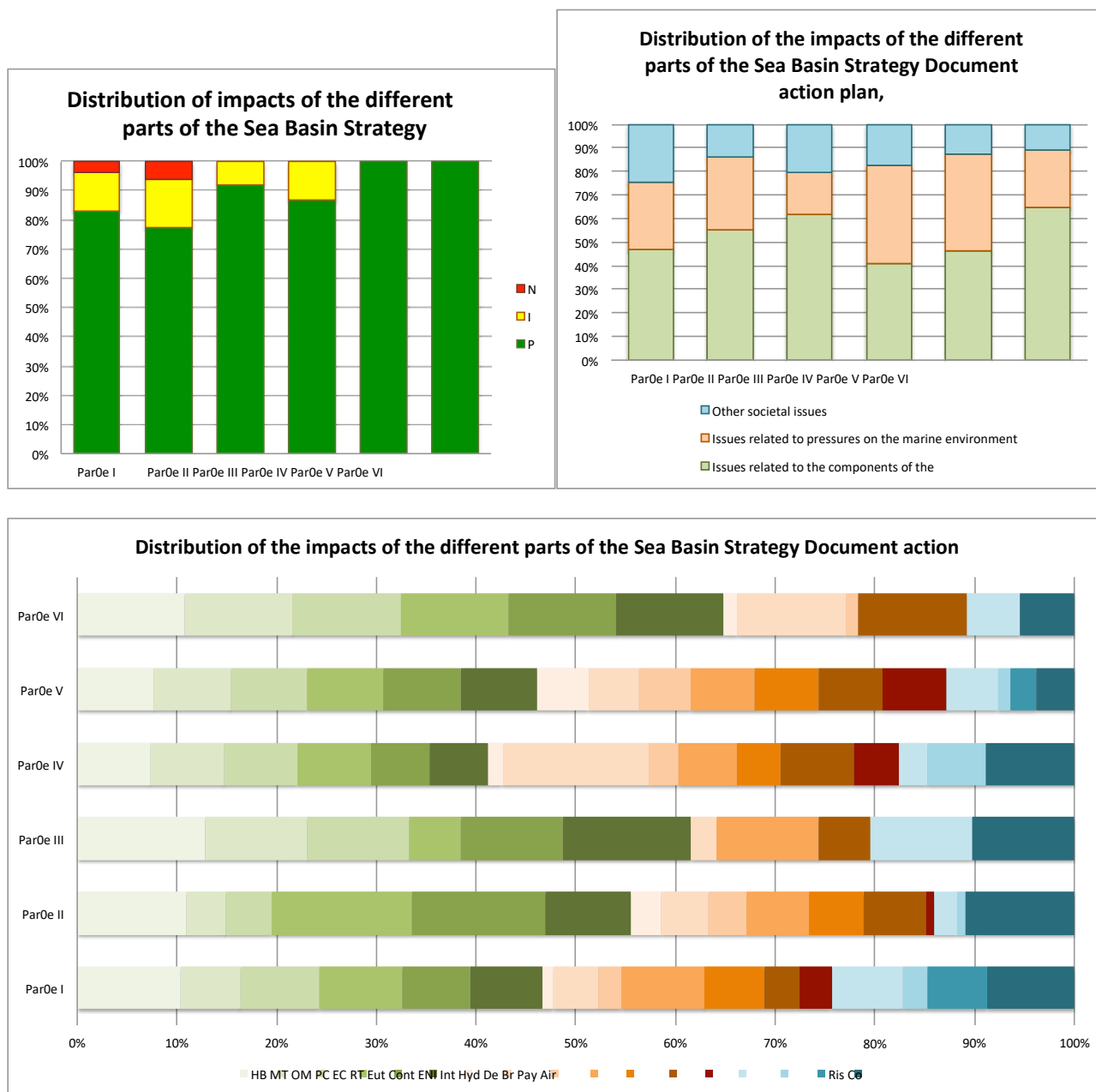
The analysis of this part VI shows that the related actions of the plan are likely to generate around 73 potential impacts on 11 environmental issues (no impacts on noise, sea-floor integrity, hydrology, NIS, risks and air quality). All impacts are considered positive.

With regard to the three sets of issues defined in the initial assessment, it can be emphasised that 66% of the impacts concern issues related to the components of the environment

23% of them were concerned with issues related to pressures on the marine environment and 11% with other societal issues.

The issues most strongly affected in this section are benthic habitats, sea birds, mammals and turtles, fish and cephalopods, food webs, commercial species, litter and contaminants. The issues least affected are landscape, knowledge and eutrophication.

LCROSS-SECTIONAL STRUCTURE OF THE ACTION PLAN IN A FEW GRAPHS



5.2.2. Impact characteristics

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

- **Their level of uncertainty.** The question to be answered here is "Are the intended effects of the action certain, following its implementation? ". The level of uncertainty of the impacts is then weak (the effects of the action are certain, following its implementation) or strong²⁵ (the effects of the action are uncertain, following its implementation).

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 (the effects of the action occur before the end of the current programming period 2026) or in the medium to long term (the 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 criterion can also be qualified as not applicable for some impacts.

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

- About 46% 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 (sea birds, mammals and turtles), certain pressures (litter) or societal dimensions (air quality and risks).
- Almost half of the positive impacts (49%) will occur after the DPA expires, which may be another important point to try to improve. This concerns in particular issues related to habitats and species, certain pressures (contaminants, bottom integrity, hydrodynamics, litter) and societal dimensions (air quality, risks).
- Only 33% of the positive impacts are reversible, which is a strength for positive impacts, as 67% are permanent. On the other hand, although there are far fewer negative impacts, 47% of them are irreversible (excluding 'not applicable'), which is a weakness. This will have to be compensated for, in particular for issues relating to the biocenosis (benthic habitats, sea birds) or to certain pressures (contaminants, integrity of the sea-floor, noise).
- It should be noted that the impacts on knowledge have the most favourable characteristics: more than 80% low uncertainty and irreversibility and 69% 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 following analysis (5.2.3.), as it details the results for each of the 17 issues.

²⁵ 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 exceptions.

5.2.3. Cumulative impacts of the whole DPA

5.2.3.1. BENTHIC HABITATS

The Sea Basin Strategy Document DPA is likely to generate 64 impacts on benthic habitats, the vast majority of which are positive (53/64 or over 80%). With regard to the remaining impacts, 8 and 3 actions are identified as having uncertain and negative impacts respectively on benthic habitats.

The actions generating impacts on benthic habitats have a typological profile with three dominant sub-actions: operational actions, in the first place (mainly concrete actions), improvement of knowledge in the second place and awareness raising, communication and training in the third place. Among the remaining sub-actions, planning and regulation are also relatively well represented, while structuring of actors is very little represented.

The positive impacts are mostly favourable, particularly with regard to the level of uncertainty (almost 52% of impacts are certain) and sustainability (approximately two-thirds of impacts are sustainable). The negative impacts, although few in number, nevertheless have rather unfavourable characteristics: the level of uncertainty of these impacts is rather low and two of them are irreversible. They come from actions relating to the development of MRE, thalassothermal energy and aquaculture. The two MRE and thalassothermal actions include sub-actions that can be considered as measures to avoid and reduce negative impacts, in particular the conduct of spatial planning integrating the various issues (for floating wind turbines) and the study of the environmental impacts of existing projects (for thalassothermal energy). Finally, the uncertain impacts, which are relatively numerous, stem from actions concerning aquaculture and fishing (development of short circuits in particular), research on vessels and fishing gear, access to the sea and the practice of water sports, the development of ecotourism, the dynamic management of places in marinas, and the creation of underwater paths. In most cases, the uncertain nature of the impacts is explained by the difficulty of predicting possible increases in these activities that could compensate in terms of pressures for the improvements in practices foreseen in these actions. It should be noted that two of these actions include awareness-raising sub-actions that can be considered as RE measures for possible negative impacts.

This impact profile should rather lead to potential positive effects on benthic habitats, whose situation with regard to GES is largely degraded. The negative impacts are concentrated on certain identified zones (MRE zones, aquaculture activity zones) for which attention must be paid during the planning stage, particularly with regard to the choice of these zones. 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 uncertain nature of many of the impacts and the difficulty of measuring the achievement of good status at the scale of the coastline and its vocation zones.

5.2.3.2. MAMMALS AND TURTLES

The Sea Basin Strategy Document DPA is likely to generate 43 impacts on marine mammal and turtle populations, the vast majority of which are positive (37/43 or 86%). Four and two actions respectively are identified as having uncertain and negative impacts on marine mammal and turtle populations.

The actions generating impacts on mammals and turtles have a typological profile with a dominance on operational actions (mainly concrete actions). Improving knowledge and raising awareness, communication and training are also well represented, while the structuring of actors is very little represented.

The positive impacts have rather favourable characteristics, particularly in terms of their timing (51% short-term impacts) and their durability (almost 60% permanent impacts), but their profile is more nuanced overall than for the previous issue. The two negative impacts have an unfavourable characteristic: their irreversible nature. They come from actions concerning the development of MRE and thalassothermal energy. As highlighted above, these two MRE and thalassothermal actions do, however, include sub-actions that can be considered as Avoid and Reduce measures for these negative impacts. Finally, the four uncertain impacts stem from actions concerning access to the sea and the practice of water sports, the development of ecotourism, and the dynamic management of places in marinas. In most cases, the uncertain nature of the impacts is explained by the difficulty of predicting possible increases in these activities that could compensate in terms of pressures for the improvements in practices foreseen in these actions. It should be noted that one of these actions incorporates an awareness-raising sub-action that can be considered as a RE measure for possible negative impacts.

This impact profile should rather induce potential positive effects on marine mammal and turtle populations whose situation with regard to the GES is, it should be remembered, not assessed. The negative impacts are concentrated on certain identified zones (MRE and thalassothermal zones) for which attention must be paid during the planning stage, particularly with regard to the choice of these zones. It is not possible to comment on a possible return to the GES as this is not known.

5.2.3.3. SEABIRDS

The Sea Basin Strategy Document DPA is likely to generate 49 impacts on sea bird populations, the vast majority of which are positive (43/49 or 87%). Four and two actions respectively are identified as having uncertain and negative impacts on sea bird populations.

The actions generating impacts on sea birds have a typological profile with a dominance on operational actions (mainly concrete actions) and the improvement of knowledge. Awareness-raising, communication and training actions are also well represented, while the structuring of actors is very little represented.

As regards the positive impacts, they have rather contrasting characteristics: the majority are unfavourable in terms of their timeframe (59% of medium- to long-term impacts) and the majority are favourable in terms of their durability (almost 65% of permanent impacts), with the level of uncertainty being more divided, with a majority of strong uncertainty. The two negative impacts have an unfavourable characteristic: they are very likely (low level of uncertainty), one of which is irreversible. They come from actions relating to the development of MRE and aquaculture. As highlighted above, the action on the development of MREs does however include a sub-action that can be considered as a Avoidance Reduction measure for these negative impacts. Finally, the four uncertain impacts stem from actions concerning access to the sea and the practice of water sports, the development of ecotourism, and the dynamic management of places in marinas. In most cases, the uncertain nature of the impacts is explained by the difficulty of predicting possible increases in these activities that could compensate in terms of pressures for the improvements in practices foreseen in these actions. As highlighted above, two of these actions include awareness-raising sub-actions that can be considered as RE measures for possible negative impacts.

This impact profile is more likely to result in potential positive effects on sea bird populations, which are in a relatively favourable situation with respect to GES (low deviation in most of the catchment areas). The negative impacts are concentrated on certain identified areas (MRE and aquaculture areas) for which attention must be paid during the planning stage, particularly with regard to the choice of these areas. However, it is not possible to comment on a return to GES at the end of the plan

of action due to the uncertain and medium/long-term nature of many impacts and the difficulty of measuring the achievement of good status at the scale of the coastline and its catchment areas.

5.2.3.4. FISH AND CEPHALOPODS

The Sea Basin Strategy Document DPA is likely to generate 60 impacts on fish and cephalopod populations, the vast majority of which are positive (52/60 or 86%). 7 and 1 actions respectively are identified as having uncertain and negative impacts on fish and cephalopod populations.

The actions generating impacts on fish and cephalopods have a typological profile similar to that of benthic habitats, with three dominant types: operational sub-actions (mainly concrete actions), those concerning the improvement of knowledge and those concerning awareness raising, communication and training. Among the remaining sub-actions, planning and regulation are also relatively well represented, while structuring of actors is very little represented.

As regards the positive impacts, they have rather favourable characteristics in terms of sustainability (66% of impacts are sustainable), while the other two characteristics present a more mixed picture: the level of uncertainty is fairly evenly divided between low and high, and the timeframe is slightly more medium/long term. The only negative impact has contrasting characteristics: rather certain, rather reversible, and occurring in the medium/long term. It comes from an action on aquaculture development planning. Finally, the seven uncertain impacts stem from actions concerning aquaculture and fishing (development of short circuits in particular), the development of floating wind turbines and thalassothermal energy, access to the sea, the development of ecotourism, and the dynamic management of places in marinas. In most cases, the uncertain nature of the impacts is explained by the difficulty of predicting possible increases in these activities that could compensate in terms of pressures for the improvements in practices foreseen in these actions. Concerning the action on the development of MREs, the uncertain nature is explained by a possible positive impact on fish populations in areas withdrawn from fishing, but which has not been proven to date.

This impact profile should rather induce potential positive effects on fish and cephalopod populations, whose situation with regard to GES is of great concern (high deviation in all vocation areas). However, it is not possible to make a statement on a return to GES due to the uncertain nature of many of the impacts and the difficulty of measuring the achievement of good status at the scale of the coastline and its vocation zones. Given the significant gap on this issue, it seems difficult to imagine closing it by the end of this action plan.

5.2.3.5. COMMERCIAL SPECIES

The Sea Basin Strategy Document DPA is likely to generate 56 impacts on commercial species populations, the vast majority being positive (51/56 or 91%). Five actions are identified as having uncertain impacts on commercial species populations, and none as having negative impacts.

The typological profile of actions generating impacts on commercial species is similar to that of fish and cephalopods, with a slightly higher proportion of sub-actions of a regulatory nature.

The characteristics of the impacts are also very similar to those for fish and cephalopods, with just one less negative impact (aquaculture) and no impact from actions on access to the sea, development of ecotourism, and dynamic management of places in marinas.

As the GES situation for commercial species is also very similar to that of fish and cephalopods, the conclusion for this issue is the same as for the previous issue.

5.2.3.6. FOOD WEBS

The Sea Basin Strategy Document DPA is likely to generate 52 impacts on food webs, almost all of them positive (50/52 or 96%). Two actions are identified as having uncertain impacts on food webs (developing floating wind turbines and thalassothermal energy). There are no actions that have a negative impact.

The actions generating impacts on food webs have a relatively balanced typological profile between four types of actions: (1) improvement of knowledge, (2) operational actions (mainly concrete actions), (3) awareness raising, communication, training, and (4) regulatory actions.

The positive impacts have rather favourable characteristics, particularly with regard to their level of uncertainty (56% of impacts are almost certain) and their durability (almost 65% of impacts are permanent). However, the majority of them will occur in the medium to long term. Finally, the two uncertain impacts stem from the action on the development of floating wind turbines, for the same reasons as the fish and commercial species issues (uncertain effect of the areas withdrawn from fishing), and the action on the development of thalassothermal energy.

This impact profile should result in potential effects that are largely positive for food webs, whose status with respect to the GES is, it should be remembered, not assessed. However, it is not possible to comment on a possible return to the GES as this is not known.

5.2.3.7. NON-NATIVE SPECIES

The Sea Basin Strategy Document DPA is likely to generate 18 impacts on NIS, the majority of which are positive (13/18 or 72%). 4 and 1 actions respectively are identified as having uncertain and negative impacts on non-native species.

The actions generating impacts on food webs have a typological profile with a clear dominance of awareness raising, communication and training actions. Operational and planning actions are also well represented, as well as, to a lesser extent, those for improving knowledge.

The positive impacts are rather favourable in terms of timing, since they will mainly occur in the short term, and more mixed in terms of the other two criteria: the level of uncertainty is divided between low and high, and the sustainability is equally divided. The only negative impact is reversible. Lastly, the uncertain impacts stem from the development of aquaculture and fisheries (short circuits in particular) and the two actions on the development of floating wind power and thalassothermal energy.

This impact profile is likely to result in potential positive but low-intensity effects on this issue over the duration of the programme. In view of the level of risk assessed in section 4, this low level of impact may be potentially insufficient in the areas where the risk is fairly high (i.e. about ten areas). 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 Sea Basin Strategy Document DPA is likely to generate 13 impacts on eutrophication, the majority of which are positive (11/13 or 84%). Two actions are identified as having uncertain impacts on eutrophication. There are no actions that have a negative impact.

The actions generating impacts on eutrophication have a typological profile similar to that of the previous issue: clear dominance of awareness-raising, communication and training actions, and operational actions which are also well represented, as well as, to a lesser extent, those of improving knowledge and planning.

The positive impacts have clearly favourable characteristics on all three criteria, since the low level of uncertainty, the short-term occurrence and the perennial nature are in the majority. Finally, the two uncertain impacts come from an aquaculture development action and a dynamic marina berth management action.

This impact profile should rather lead to potential positive effects on eutrophication, whose situation with regard to the GES is globally favourable (small deviation in most of the zones of use).

5.2.3.9. INTEGRITY OF THE SEABED

The Sea Basin Strategy Document DPA is likely to generate 42 impacts on the integrity of the sea-floor, the majority of which are positive (32/42 or 76%). Seven and three actions respectively are identified as having uncertain and negative impacts on this issue.

The actions generating impacts on the integrity of the sea-floor have a typological profile with a dominance of operational actions and awareness-raising, communication and training actions. Actions to improve knowledge are also well represented.

As regards positive impacts, they have very favourable characteristics in terms of the level of uncertainty and sustainability. The time frame for their occurrence is almost equally divided between short and medium/long term. Two of the three negative impacts are irreversible (development of MRE and thalassothermal energy). Finally, the uncertain impacts stem from actions concerning aquaculture and fishing (development of short circuits in particular), research into the environmental impact of vessels and fishing gear, access to the sea and the practice of water sports, dynamic management of places in marinas and accessibility to the underwater heritage. In most cases, the uncertain nature of the impacts is due to the difficulty in predicting possible increases in these activities that may result in increased pressure on the integrity of the sea-floor.

This impact profile should rather lead to potential positive effects on this issue over the duration of the programme. In view of the level of challenge assessed in part 4, which is quite high overall, it is not possible to comment on a return to the GES as this has not yet been defined.

5.2.3.10. CHANGES IN HYDROGRAPHIC CONDITIONS

The Sea Basin Strategy Document DPA is likely to generate 30 impacts on hydrographic conditions, the majority of which are positive (23/30 or 76%). 6 and 1 actions respectively are identified as having uncertain and negative impacts on this issue.

The actions generating impacts on hydrographic conditions have a typological profile with a double dominance: operational actions (mainly concrete actions), on the one hand, and awareness-raising, communication and training actions, on the other. Actions to improve knowledge and planning/contracting are also well represented.

The positive impacts are rather favourable in terms of the level of uncertainty and, above all, sustainability. The time frame of their occurrence is slightly dominated by the medium to long term. The only negative impact is not irreversible. Finally, the uncertain impacts stem from actions to develop aquaculture and fisheries (short circuits in particular), actions on

the development of floating wind power and thalassothermal energy, the action on the development of access to water sports, and the action on the dynamic management of places in marinas.

This impact profile should rather lead to potential positive effects on this issue over the duration of the programme. In view of the level of challenge assessed in Part 4, this intensity of impact could potentially be insufficient in the high and intermediate challenge areas (i.e. a small half of the areas). However, 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 Sea Basin Strategy Document DPA is likely to generate 40 contamination impacts, the majority of which are positive (33/40 or 82%). Five and two actions respectively are identified as having uncertain and negative impacts on this issue.

The actions generating impacts on contamination have a typological profile with a double dominance (awareness raising, communication, training and operational actions). Planning/contracting and knowledge improvement actions are also well represented.

The positive impacts are favourable in terms of the level of uncertainty and, above all, sustainability. The time frame for their occurrence is almost equally divided between short and medium/long term. One of the two negative impacts is irreversible (floating wind). Finally, the uncertain impacts stem from the actions on the development of aquaculture and fishing (short circuits in particular), the action on the development of thalassothermal energy, the action on the development of access to the sea, the action on the development of ecotourism, and the action on the dynamic management of places in marinas.

This impact profile should rather lead to potential positive effects on this issue over the duration of the programme. In view of the situation with regard to GES assessed in Part 4, this impact intensity could potentially be insufficient in those areas of use where the gap is high or intermediate (i.e. a large majority of the areas). However, it is not possible to comment on a return to the GES.

5.2.3.12. WASTE

The Sea Basin Strategy Document DPA is likely to generate 37 litter impacts, the majority of which are positive (29/37 or 78%). 7 and 1 actions respectively are identified as having uncertain and negative impacts on this issue.

The actions generating impacts on litter have a typological profile close to that of the previous issue: double dominance (awareness-raising, communication, training and operational actions), planning/contractualisation and knowledge improvement actions also well represented.

The positive impacts are fairly mixed in terms of timeframe (about the same in the short and medium/long term), rather unfavourable in terms of the level of uncertainty (dominated by strong) and much more favourable in terms of sustainability. The only negative impact is not irreversible. Finally, the uncertain impacts stem from actions to develop aquaculture and fishing (short circuits in particular), actions to develop access to the sea and water sports, action to develop ecotourism, action to dynamically manage berths in marinas, and action to develop underwater paths.

This impact profile should rather lead to potential positive effects on this issue over the duration of the programme. With regard to the level of challenge assessed in part 4,

however, it is not possible to comment on a return to the GES as this is not yet defined.

5.2.3.13. NOISE

The Sea Basin Strategy Document DPA is likely to generate 17 noise impacts, the majority of which are positive (14/17 or 82%). Two and one actions respectively are identified as having uncertain and negative impacts on this issue.

The actions generating impacts on noise emissions have a typological profile with a clear dominance on awareness raising, communication and training actions. Operational actions and, to a lesser extent, knowledge improvement actions are also well represented.

As regards positive impacts, they are rather favourable in terms of the timeframe in which they occur (the vast majority are short-term), and more mixed in terms of the level of uncertainty and sustainability. The only negative impact is irreversible (development of floating wind turbines). Finally, uncertain impacts arise from the research action on the environmental impact of ships and gear, and the action on the development of thalassothermal energy.

This impact profile should rather lead to potential positive effects on this issue over the duration of the programme. In view of the level of challenge assessed in part 4, which is quite high overall, it is not possible to comment on a return to the GES as this has not yet been defined.

5.2.3.14. LAND AND SEASCAPES

The Sea Basin Strategy Document DPA is likely to generate 35 landscape impacts, the vast majority of which are positive (33/35 or 94%). Only 2 actions are identified as having uncertain impacts on this issue, and none as having negative impacts.

The actions generating impacts on the landscape have a typological profile in which actions to improve knowledge predominate. Awareness-raising, communication and training activities are also well represented.

The positive impacts are rather favourable in terms of the three criteria taken into account, since the low level of uncertainty, the short-term occurrence and the perennial nature are in the majority. Uncertain impacts arise from the development of aquaculture areas and offshore wind energy, the impact of which on the landscape is rather difficult to estimate, given (1) the subjective nature of this notion, (2) the fact that, for wind turbines, the distance from the coast which determines the visual impact will be specified later.

This impact profile will result in potential positive landscape effects over the duration of the programme (no negative impacts). Care should be taken to ensure that actions with positive and uncertain impacts are carried out with attention to those vocation zones where the landscape issues are greatest (6 areas identified in part 4).

5.2.3.15. AIR QUALITY

The Sea Basin Strategy Document DPA has the potential to generate 12 air quality impacts, all of which are positive.

The actions generating air quality impacts have a typological profile in which operational actions clearly predominate. Awareness-raising, communication, training and, to a lesser extent, planning/contracting actions are also well represented.

The positive impacts are very favourable in terms of sustainability (large majority of impacts are sustainable), but less favourable in terms of the other two criteria (high uncertainty and medium/long term occurrence predominate).

This impact profile will result in potential positive effects on air quality over the duration of the programme (no negative impacts). These impacts are shared between the two issues addressed in air quality: the reduction of air pollution on the one hand, and the reduction of GHG emissions on the other. With regard to the reduction of air pollution, the relatively small number of positive impacts and their moderately favourable characteristics raise the question of a commitment commensurate with the challenge, which is considered to be fairly important in half of the vocation zones. As far as the impact on the reduction of greenhouse gas emissions is concerned, it will potentially be on a large scale (floating wind turbines in particular) but it is difficult to say whether it is sufficient in view of (1) the lack of a reliable diagnosis of emissions linked to maritime activities and their evolution, and (2) the deferred nature of most of these impacts.

5.2.3.16. NATURAL AND HUMAN RISKS

The Sea Basin Strategy Document DPA is likely to generate 17 risk impacts, almost all of them positive (94%). Only one action is considered to have an uncertain impact (development of ecotourism, as it is difficult to estimate whether this action will result in an increase or decrease in overall visitation to the risk areas).

The actions generating the impacts on the risks have a typological profile in which three types of actions predominate: actions to improve knowledge, actions to raise awareness, communication, training and operational actions.

The positive impacts are very favourable in terms of sustainability (a large majority of impacts are sustainable), but more mixed in terms of the other two criteria (level of uncertainty and occurrence in the short or medium/long term).

This impact profile will result in potential positive effects on risks over the duration of the programme (no negative impacts). However, the relatively small number of positive impacts and their moderately favourable characteristics raise the question of a commitment commensurate with the issue at stake, which is considered important in more than half of the vocation areas.

5.2.3.17. KNOWLEDGE

The Sea Basin Strategy Document DPA is likely to generate 53 impacts on improving knowledge, all of which are positive (100%).

The actions generating impacts on knowledge have a typological profile in which actions to improve knowledge logically predominate. However, almost all other types of actions can also indirectly generate positive impacts on knowledge.

The positive impacts are very favourable in terms of the three criteria taken into account, since the low level of uncertainty, the short-term occurrence and the long-term nature of the impacts are in the majority.

This impact profile will lead to largely positive effects on the improvement of knowledge, which is the issue most favourably impacted by the action plan. This result seems quite relevant in view of the many uncertainties that exist in the fields of environmental status assessment and the detailed knowledge of the pressures exerted by the various human activities.

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), allow us to conclude that the action plan has a positive impact on them overall, it is impossible to state its extent and therefore the capacity of the action plan to restore good 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 for sea birds is much more favourable and the action plan should at least reinforce this, even if the impact of future wind farms on migratory birds will require the utmost vigilance;
- for the last two issues in this first group (mammals and turtles and food webs), the GES is not defined and the deviation from it not assessed; 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 Sea Basin Strategy Document 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 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 modest for eutrophication, NIS and noise, which does not have the same consequences given the different situation of these issues (see section 4). Eutrophication is indeed rather favourable on the coastline, in contrast to noise, which is a relatively important issue, with the NIS being in an intermediate situation. Thus, while the a priori modest impact of the action plan seems to be little problematic for eutrophication, it could be more problematic for NIS in certain vocation zones, and for noise pollution;
- more important for contaminants, sea-floor integrity, hydrographic conditions and litter. This greater impact of the plan on these four issues is all the more relevant as they present fairly high levels of challenge. Nevertheless, it is impossible to make a statement on a possible return to good status as this has not been defined for three of them (litter, hydrographic conditions and integrity of the sea-floor). As for contaminants, the overall gap seems to be quite large and difficult to close at the scale of this action plan;

The issues in the third group "Other societal issues" will all be positively impacted by the action plan, as the plan has a very high proportion of positive impacts and no negative impacts on them. 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 of large-scale wind farms on the landscape;
- the impacts on air quality are much less numerous, although all of them are positive. 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. Regarding the reduction

of GHG emissions, it is difficult to give an opinion given the lack of diagnosis of the initial situation;

— the impacts on risks are also relatively few, for a relatively high number of issues on a good part of the coastline (coastline of the two regions Provence-Alpes-Côte d'Azur and Occitanie);

— finally, the impacts on knowledge are numerous, all positive and mostly short-term. The plan should therefore significantly improve the level of knowledge about the coastline, which is highly relevant given the existing uncertainties.

5.2.4. Spatialized impacts at the level of the vocation zones

With regard to the vocation zones affected by the stated impacts, two profiles of vocation zones can be distinguished in the first place: the vocation zones that are located offshore and the coastal vocation zones. In fact,

- the coastal areas present a fairly similar impact profile overall, close to the profile of the entire coastline described in the sections above (see below an illustration of an area of the Occitanie coastline, an area of the Provence-Alpes-Côte d'Azur coastline, and an area of the Corsican coastline);
- the offshore areas have a much lower number of impacts, which is related to the overall lower number of issues in these areas (see illustration below of an offshore area).

Illustration: Impact profiles for three coastal areas and one offshore area (see Annex 4 of the Environmental Report for details of all areas)



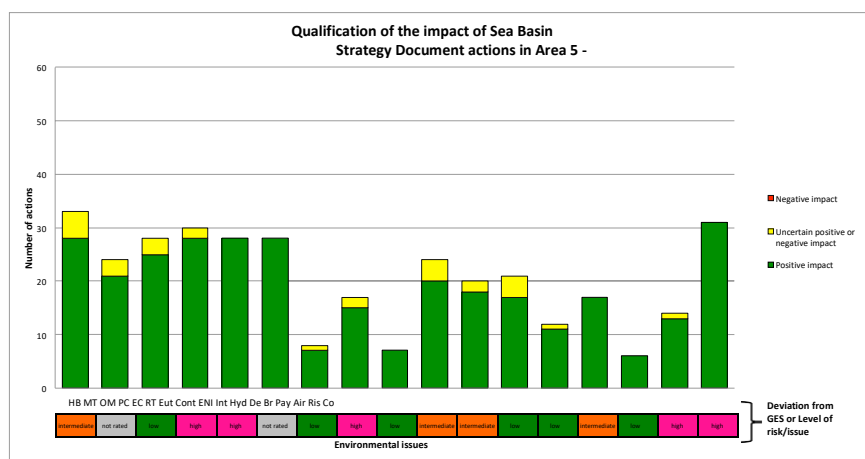
Beyond these first two categories of zones, the following comments can be made within the four geographical families of zones illustrated above.

Concerning the Occitanie coastal zones, i.e. vocation zones 1 to 4:

- Zone 1 Gulf of Lion PNM has a slightly higher number of incidences than the other three;
- In all areas, Sea Basin Strategy Document action seems particularly relevant for habitats, CPs and ECs that show a significant deviation from BE;
- The same applies to contaminants, sea-floor integrity, hydrodynamics and litter, which are high-level issues;
- The low number of impacts on eutrophication can be justified by the low level of risk on this issue. NIS are also affected by a relatively low number of incidences, but the level of risk is higher;
- The lower number of impacts on Noise, Risks and Air pollution is more questionable as these issues are often significant.

For the Provence-Alpes-Côte d'Azur coastal areas, i.e. vocation zones 5 and 7 to 17:

- Zone 7 Gulf of Fos-sur-Mer has a slightly higher number of incidents than the others;
- The Camargue is distinguished by a lower number of impacts than the other areas, and the absence of negative impacts (see illustration below);



- In all areas, the action of the Sea Basin Strategy Document seems particularly relevant for habitats, CPs and ECs with a significant deviation from the GES;
- The same applies to contaminants, sea-floor integrity, hydrodynamics and litter, which are high-level issues (except for zones 11 and 13 for contaminants). In this respect, the lower number of positive impacts in the Camargue deserves attention;
- The low number of impacts on eutrophication or NIS can be justified by the low level of risk on these issues (except in the Gulf of Fos and the Bay of Toulon);
- However, the lower number of impacts on Noise, Risks and Air pollution is more questionable as these issues are often significant.

Concerning the areas of the Corsican coastline, i.e. vocation areas 21 to 26, and 28 to 30:

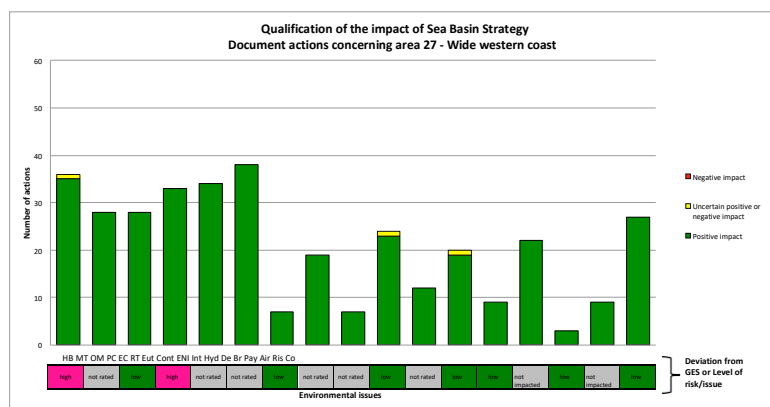
- In all areas, Sea Basin Strategy Document action seems particularly relevant for habitats, CPs and ECs with an intermediate or significant GES gap;

— The positive impacts on noise and air are relatively few, although these issues are often significant (zones 21, 22, 23 and 26 in particular).

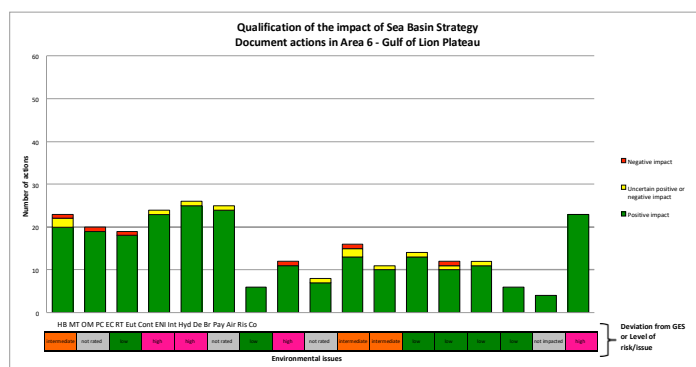
Concerning the offshore areas, i.e. vocation zones 6, 18, 19, 20, and 27:

— The number of incidences is significantly lower in three of these areas (18, 19 and 20), but almost all of them are positive;

— Zone 27 has more impacts, but also a large majority of positive impacts (see below);



— Zone 6 is the only one with some negative impacts as it has been identified as a potential site for MREs (see below);



— The most numerous impacts concern issues related to habitats (HB) and species (MT, OM, PC, EC, RT), which is perfectly consistent with the often significant deviation from the GES for these issues;

For the three zones 18, 19 and 20, the low number of impacts on pressure-related issues can be justified by the overall low level of risk in these zones.

5.3. Analysis of the impact on Natura 2000 areas

5.3.1. Presentation of Natura 2000 sites

LOCALISATION

Of the 30 zones delimited by the designated uses map for the coastline, 26 include areas classified as Natura 2000. The 4 vocation areas not concerned are the bays (Marseille, Toulon, Bastia) and Nice and its surroundings.

Produce a map of the location of Natura 2000 sites

LES ZONES OF PROTECTION SPECIAL PROTECTION ZONES ON THE FACADE

15 SPZs are located on the MED coast. The detailed list is provided in Annex 5 of the Environmental Report.

- Birds of community interest at the origin of the designation of Natura 2000 sites on the coast:

Of those bird species of community interest that are the reason for the designation of the MED Special Protection Areas, only sea bird species are included in the impact assessment of the Sea Basin Strategy Document. They were divided into two groups:

- **Pelagic sea bird species:** The Scopoli Shearwater, the Mediterranean Shearwater (yelkouan) and the Storm petrel. These species spend most of their lives at sea: they only come ashore on the French coast to nest. They feed at sea, by immersing themselves;
- **Coastal sea bird species:** Mediterranean Crested Cormorant, Slender-billed Gull, Hansel Tern, Pygmy Gull, Audouin's Gull, Yellow-legged Gull. These species feed either on the foreshore, on the surface of the sea or by diving down up to 20 m.

The **table in Appendix 5** of the environmental report lists the CI bird species and their conservation status on the sites, for which the coastline has a particular responsibility. These species are those whose numbers are greater than

10% of the French active population (source: CEREMA, 2014)²⁶.

Pelagic sea birds concern 14 SPZs spread mainly over 18 vocation zones of the Mediterranean coast. Depending on the species concerned, we can say that:

- The Scopoli Shearwater is present on 13 Natura 2000 sites, 2 of which are in excellent conservation status (on ZV21 - Cape Corsica and Agriate Marine Natural Park) and 7 suspected breeding sites;
- The Mediterranean Shearwater (yelkouan) is present in 14 Natura 2000 sites, 3 of which have an excellent conservation status (ZV5 - Camargue, VZ7 - Gulf of Fos-sur-Mer, ZV13 - Port-Cros NP and ZV23, 24, 25 and 27 in Corsica) and 3 suspected breeding sites;
- The storm petrel is present in 7 Natura 2000 sites, none of which have an excellent conservation status and 3 suspected breeding sites.

²⁶ Source: EES APME Bay of Biscay - CEREMA 2014 - Pages 248 -249 (except for offshore reefs as the areas in question did not exist in 2014).

Coastal sea birds concern 15 SPZs spread mainly over 18 vocation zones of the Mediterranean coast. Depending on the species concerned, we can say that:

- The European shag is present in 11 Natura 2000 sites, 3 of which are in excellent conservation status (ZV13 - Port-Cros NP, ZV23, 24 and 25 - Balagne, Scandola and the western coast of Corsica, and ZV 28 and 29 - Ouches de Bonifacio) and 1 suspected breeding site;
- The Slender-billed Gull is present in 4 Natura 2000 sites (in ZV 1, 2, 3, 4, 5, 7, 10 and 13), none of which are in excellent conservation status and 2 suspected breeding sites;
- The Hansel Tern is present on 4 Natura 2000 sites (on ZV 1, 2, 3, 4, 5, 7, 19, 20 and 21), none of which are in excellent conservation status and 1 suspected breeding site;
- The Pygmy Gull is present on 4 Natura 2000 sites (on ZV 5, 7, 13, 19, 20 and 21), none of which are in excellent conservation status;
- Audouin's Gull is present in 13 Natura 2000 sites, none of which are in excellent conservation status and 7 suspected breeding sites;
- The Yellow-legged Gull is present in 7 Natura 2000 sites, 4 of which have an excellent conservation status (in ZV 5, 7, 10, 13, 19, 20, 21, 25, 26 and 27).

SPECIAL AREAS OF CONSERVATION ON THE COASTLINE

43 SACs are located on the MED coastline. The detailed list is provided in 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 assessment, are the marine or wetland habitats located on the coastline. For the purpose of this analysis, they were divided into two groups:

- **Marine benthic habitats in the subtidal zone**, whether sedimentary or rocky in nature. These are Posidonia meadows (1120), sea caves (8330) and reefs (1170);
- **Habitats located in transitional environments** mixing freshwater and coastal waters. These are mainly lagoons (1150) on the Mediterranean coast.

The **table in annex 5** of the environmental report presents the list of habitats and their conservation status on the Natura 2000 sites, for which the coastline bears a particular responsibility, i.e. whose share of the number of sites within the 4 coastlines as a whole is greater than 50% (source: CEREMA)²⁷.

The marine benthic habitats concern 36 SACs, mainly spread over 23 vocation zones of the Mediterranean coast. Depending on the habitats concerned, we can say that:

²⁷ Source: EES APME Bay of Biscay - CEREMA 2014 - Pages 248 -249 (except for offshore reefs as the areas in question did not exist in 2014).

- 28 sites have Posidonia meadows, 7 of which are in an excellent state of conservation (of the vocation areas located in Corsica: VZ21, 23, 24, 25, 27, 28 and 29);
- 18 sites have sea caves, 4 of which are in an excellent state of conservation (in ZV11 and 14 - West and East Var coastline, ZV13 - Port Cros NP and ZV23, 24 and 25 - Balagne, Scandola and West Corsica coastline);
- 34 sites have reefs, of which 7 have been granted an excellent conservation status (in ZV1, 13 and 21 - Gulf of Lion PNM, Port-Cros PNM and Cap Corse and Agriate PNMs, ZV11 and 14 - West and East Varois coastline, and ZV23, 24 and 25 - Balagne, Scandola and western Corsica coastline).

Habitats located in transitional environments mixing freshwater and coastal waters, mainly lagoons, relate to 11 SACs, mainly spread over 13 vocation zones on the Mediterranean coast. Of these 11 sites with coastal lagoons, none have an excellent conservation status, 8 have a good conservation status.

- The CI fauna species for which the SACs were designated:

The species of community interest that led to the designation of the Special Areas of Conservation of the coastline selected for the impact assessment are marine species. For the purpose of this analysis, they were divided into two groups:

- **Marine mammals and turtles:** Bottlenose dolphin and loggerhead turtle;
- **Amphihaline fish:** the Red Shad (*Alosa fallax*) and the Sea Lamprey (*Petromyzon marinus*).

The **table in Appendix 5** of the environmental report lists the species and their conservation status on the Natura 2000 sites for which the coastline has a particular responsibility. These species are those whose numbers are greater than

50% of the French active population (source: CEREMA)²⁸.

Marine mammals and turtles are covered by 35 SACs, mainly spread over 23 areas of the Mediterranean coast. Depending on the species concerned, we can say that:

- Bottlenose dolphins are identified at 35 sites. Breeding of this species is suspected at 3 sites. 4 sites have an excellent conservation status (of the vocation areas in Corsica, ZV21, 23, 24, 25, 26, 27 and 29), mainly due to presence;
- Loggerhead turtles are identified at 29 sites. Only one site has an excellent conservation status with regard to concentration (in ZV3 - Littoral languedocien).

Amphihaline fish are concerned by 8 SACs, mainly spread over 6 different areas of the Mediterranean coast (mainly on the ZV3 - Languedoc coastline). Depending on the species concerned, we can say that:

- Red Shad are observed at 8 sites, 4 of which are suspected breeding grounds;

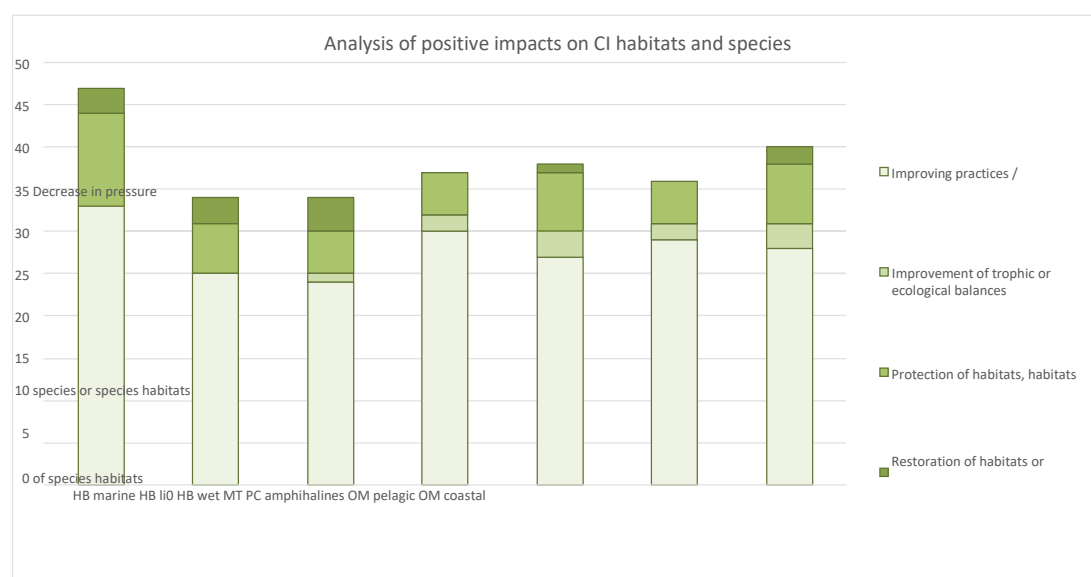
²⁸ Source: EES APME Bay of Biscay - CEREMA 2014 - Pages 248 -249 (except for offshore reefs as the areas in question did not exist in 2014).

- Sea Lampreys are observed at 6 sites, but 4 of them are not representative enough to be able to assess the conservation status.

5.3.2. Analyses of the potential impact of the Sea Basin Strategy Document on the Natura 2000 sites of the coastline

CHOICE OF PROTECTION OF NATURA 2000 ISSUES IN THE SEA BASIN STRATEGY DOCUMENT

The majority of the impacts of the Sea Basin Strategy Document actions are positive on habitats and species (concerns 63 Sea Basin Strategy Document actions). The following graph shows the distribution of these impacts by CI issue group.



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, professional and recreational fishing, electricity production, deconstruction, tourism and yachting, seaside and underwater activities which are likely to be located within Natura 2000 sites. The actions of the Sea Basin Strategy Document should thus enable better consideration of CI issues by limiting the degradation of marine, coastal or wetland benthic habitats, reducing pollution and litter, reducing the incidental capture of marine mammals or sea birds, and limiting the risks of collisions and disturbance of marine megafauna during work at sea or induced by the various activities.

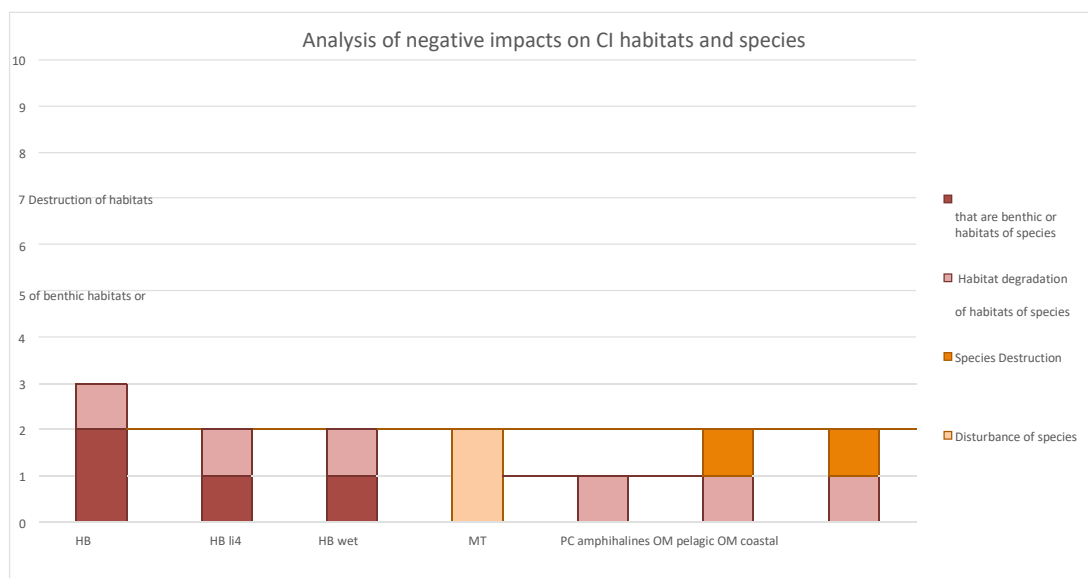
In addition, all CI stakeholder groups are concerned by actions aimed at protecting habitats or species. Some actions specifically target habitats or species: high-stakes sea birds (D01-OM-OE03-AN1), functional fishing areas (D01-PC-OE5-AN1), specific geomorphological structures at stake (D01-HB-OE10-AN1), migratory fish (D01-PC-OE3-AN1), red coral (D01-HB-OE7-AN1). Other actions lead to the protection of areas not located at this stage such as net loss due to artificialization (D06-OE01-AN1), compensation (D06-OE01-AN2), strong protection zones (AT01), marine educational areas (AT02), allocated funding (AT06), disturbances in authorisations and regulations (D01-OM-OE06-AN1).

Few positive actions have a restoration objective. Indeed, the restoration of environments is aimed particularly at two CI issues: mediolittoral habitats (habitats of species of

coastal sea birds - D01-OM-OE5-AN1) and amphihaline fish species (D07- OE3-AN1). Two other more global actions lead to a possible restoration of environments Management of NIS (D02-AN1) and territorial implementation of the strategy to restore natural habitats in the Mediterranean (D06-OE2-AN2).

NEGATIVE IMPACT ON HABITATS AND CI SPECIES

Three actions are likely to generate negative impacts on habitats and species. The majority of the negative impacts on Natura 2000 habitats or species concern destruction or degradation. Only the Natura 2000 issues of Mammals and Marine Turtles present negative impacts of the species disturbance type as shown in the graph below:

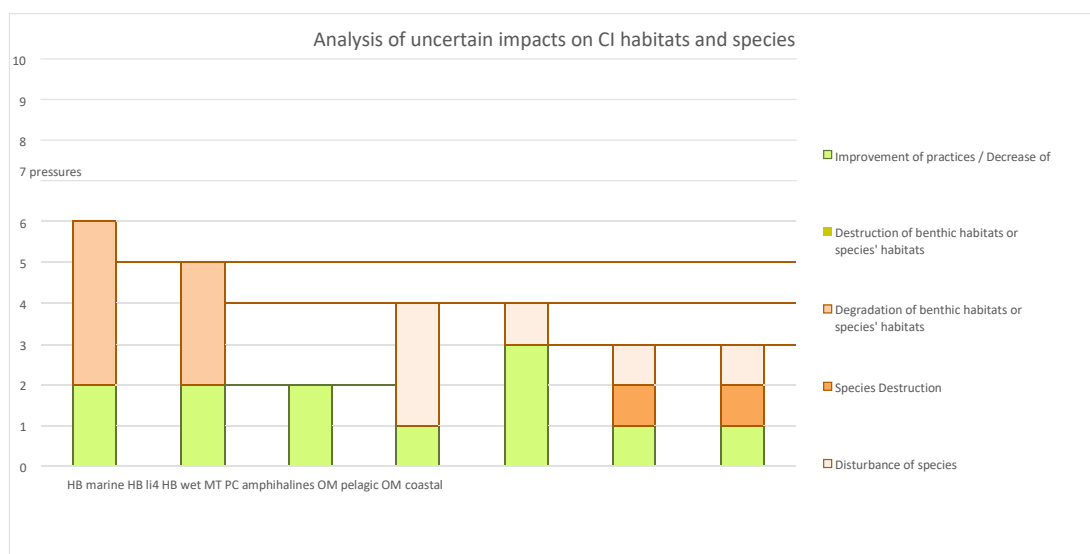


The negative impacts on Natura 2000 issues are concentrated around three actions of the Sea Basin Strategy Document:

- AQUA-NAT01 - Plan future aquaculture areas on the coast. This action is likely to cause degradation of habitats and species, apart from mammals and turtles, on Natura 2000 sites in zones 1, 2, 3, 7, 8, 10, 11, 13, 14, 15, 17, 21, 23, 24, 25, 26, 28, 29 and 30
- EMR-MED02 - Deploy a competitive, sustainable and structured "commercial floating wind turbine" sector on the Mediterranean coast. This action is likely to cause destruction of marine habitats, disturbance of mammals and marine turtles (during the construction phase of the projects) and destruction of bird species (loss of hunting habitats, risk of collision during migration). The vocation zones impacted are: 1, 2, 4, 6 and 7.
- EMR-MED03 - Assess the potential and support the development of the thalassothermal sector on the Mediterranean coast. This action is likely to cause destruction of marine habitats (anchoring and piping), disturbance of mammals and marine turtles (during the construction phase of the projects). The vocation zones impacted are: 1, 2, 3, 7, 7, 8, 10, 11, 13, 14, 15, 17, 21, 23, 24, 25, 26, 28, 29 and 30.

INCERTAIN IMPACT ON HABITATS AND CI SPECIES

About ten actions may have 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:



As illustrated by the graph above, the majority of the uncertain nature of the impacts on Natura 2000 habitats or species relates to improved practices or reduced pressures.

Only pelagic and coastal sea birds are affected by species destruction.

The ten or so actions with uncertain impacts at this stage concern the following activities:

- fisheries and aquaculture (AQUA-NAT01 + AQU-PM-MED07/08),
- electricity production (EMR-MED03),
- water sports/tourism (LAM-MED02/03/04),
- maritime traffic (PTM-MED06),
- underwater practice (SPP-MED02).

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 Sea basin Strategy Document, whether that be 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 Sea Basin Strategy Document 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 ER 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 Sea Basin Strategy Document MED Action Plan in terms of its environmental impacts is detailed below.

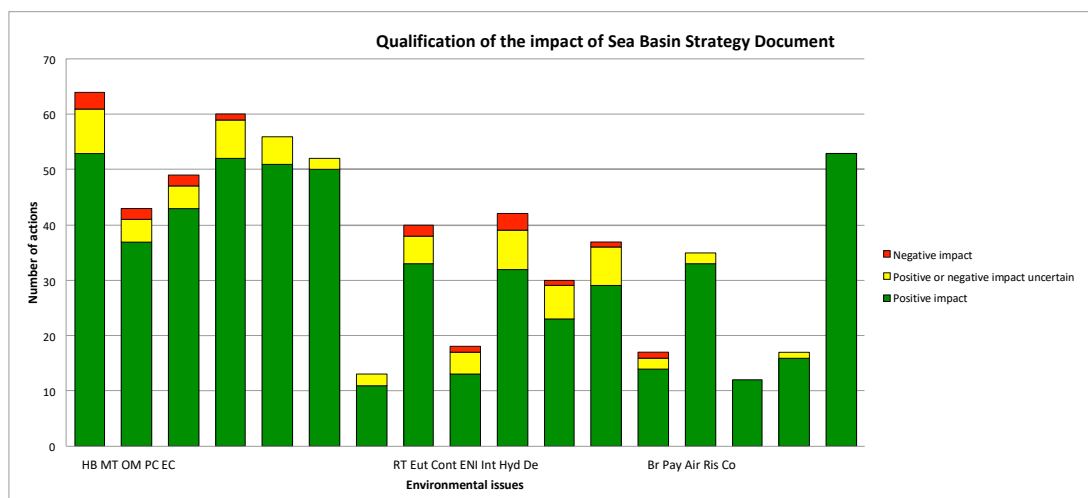
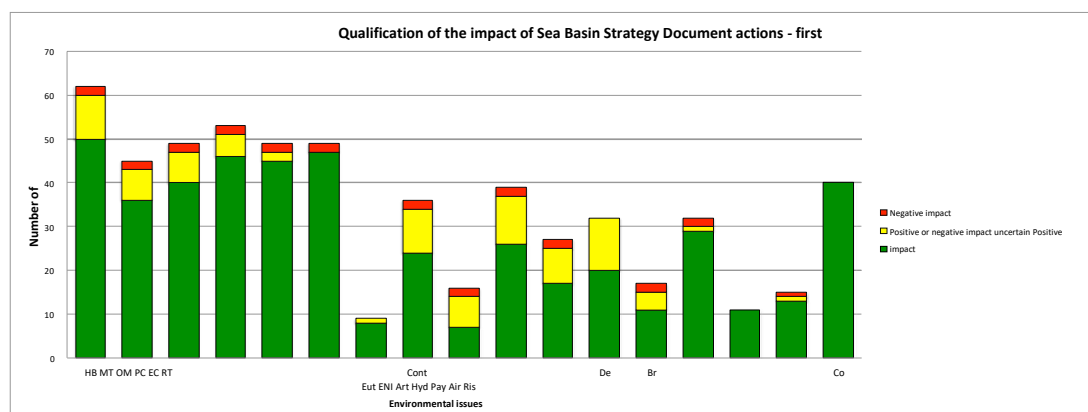
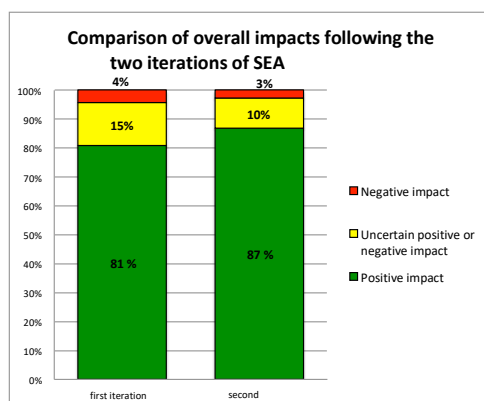
During successive iterations of the SEA :

- Almost thirty ER²⁹ measures have been proposed for socio-economic actions with potentially negative or uncertain impacts;
- approximately half of them were included in the action plan sheets, the DIRM having justified its choice not to include the others during discussions with the evaluator (often because these ER measures were already the subject of other actions, particularly environmental ones).

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 with the integration of new actions with positive impacts between the first and second versions of the action plan. This improvement was nevertheless reduced at the end of the process by the deletion of actions with positive impacts because they could not be finalised or arbitrated in favour of their continuation (action on health risk management in aquaculture, action on the hunting of migratory birds).

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.

²⁹ All of the proposed ER measures and details of how they have been taken into account are listed in Appendix 4 of the Environmental Report



These graphs highlight the following points:

- in terms of the overall change in impacts, a decrease in the proportion of negative and uncertain impacts and an increase in the proportion of positive impacts. This evolution is explained both by the integration of ER measures in some socio-economic actions (e.g. AQUA PM MED 06 on accompanying fisheries products towards certification) and by the addition of new environmental measures generating additional positive impacts. Finally, it should be noted that the proportion of negative impacts decreases slightly, but from a low proportion from the first iteration of the SEA.

- from the point of view of the evolution by environmental issue, a decrease in uncertain impacts for a certain number of issues, in particular some of the first group (HB, OM) and those concerning pressures on the marine environment (Cont, ENI, Int, Hyd, Noise). There is also a disappearance of negative impacts on commercial species, food webs, eutrophication, landscape and risks, but also an "appearance" of negative impacts for litter. The latter is due to the integration into the second iteration of the AQUA NAT 01 action on the planning of future aquaculture areas.

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 ER 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 ER measure	Justification
EMR MED 01 "Capitalise and disseminate the knowledge of offshore wind energy and its impact on the environment, ensuring harmonised monitoring of the various projects"	This action will help to reduce impacts of the MRE MED 02 action on the deployment of a commercial floating wind energy sector
SA2 and SA3 of the EMR MED 02 action "Deploy a competitive, sustainable and structured commercial floating wind energy sector on the Mediterranean coast"	Conducting spatial planning taking into account the different issues (SA2) and the training of stakeholders (SA3) can reduce the impact of wind farms
Action D01-OM-OE02-AN1 : Prefiguring a national coordination body for coastline scientific councils (CSC) on offshore wind energy	This action will strengthen the knowledge of the impacts of MRE projects on the components of the natural marine environment and to share feedback on experiences ER
SA1 of the EMR MED 03 action "Evaluate the potential and support the development of the thalassothermal sector on the Mediterranean coast"	The state of play of existing projects and their environmental impact will help to reduce the impact of the development of the sector
SA2 and SA3 of the AQUA NAT 02 action "Supporting the procedures for examining applications for authorisation to exploit marine cultures"	Predictive impact modelling (SA2) and the training of instructors (SA3) will help to reduce the impact of the AQUA NAT 01 action on the planning of future aquaculture areas
SA2 of the action LAM MED 02 "Support the improvement of facilities allowing access to the sea for all and integrating innovation"	Raising awareness of communities, in terms of litter management in particular, can help to reduce any negative impacts associated with the possible increase in visitor numbers

It can be seen from this table that the three actions with potentially negative impacts (AQUA NAT 01, EMR MED 02 and EMR MED 03) have sub-actions within them or in other actions likely to reduce their impacts.

7. Impact monitoring indicators

The Sea basin Strategy Document (Sea Basin Strategy Document) consists of four parts, the third of which is devoted to the arrangements for evaluating the implementation of the Sea Basin Strategy Document. The monitoring mechanism is therefore an integral part of this third part, which, together with the action plan, constitutes the operational part of the Sea Basin Strategy Document.

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 Directive (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 for the maritime coastline;
- To evaluate the achievement of strategic objectives specific to each coastline.

This joint monitoring system for the environmental and socio-economic strategic targets is therefore, like the Sea Basin Strategy Document, 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 Sea Basin Strategy Document. This first version of the "Sea Basin Strategy Document" monitoring system was finalised at the end of January 2021.

For this environmental assessment, the monitoring system was mobilised in two directions³⁰:

- 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 CSBD monitoring system, which is the subject of Annex 1 of the monitoring system. We can include the

improvements for the second cycle proposed in this annex³¹ in relation to the assessment of the GES deviation or the level of challenge that may have been 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.

³⁰ Mobilisation within an extremely tight timeframe given the concomitant finalisation of the monitoring scheme and the environmental report.

³¹ 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.

Issues	Overall assessment at the scale 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	Not rated	Not applicable	About 70% of the schemes operational, and 30% not operational but expected to be at the end of this cycle
OM	Overall low GES gap	Average	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 of the three schemes are operational, but the third is still to be set up and will therefore not be operational in the next cycle
EC	Overall high GES gap	Average	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 applicable	No specific monitoring system targeted at this issue
Eut	Overall low GES gap	Good	Three out of four schemes operational and the fourth not operational but expected to be at the end of this cycle
Cont	Overall average GES gap	Average	Two thirds of the schemes operational and one third not operational but expected to be at the end of this cycle
ENI	Overall low level of concern	Good	Monitoring programme fully under development
Int	Overall medium level of concern	Good	Just over half of the schemes are operational and the remainder are non-operational but should be by the end of this cycle
Hyd	Not rated	Not applicable	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

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 Mediterranean coast (deviation from the GES difficult to assess but high overall), we can only recommend that the greatest attention be paid to improving the monitoring system for it;
- **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 as globally rather low on the Mediterranean coast, it is nevertheless necessary to remain vigilant on the capacity to appreciate 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 FMS and the operational nature of the monitoring system put in place to assess them.

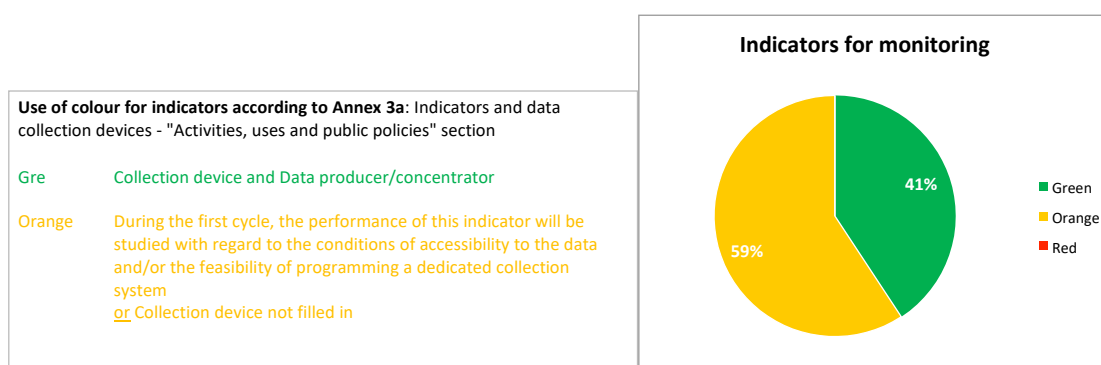
In order to do this, we have included all socio-economic actions that are likely to have one or more negative or uncertain environmental impacts. For these, we looked at the indicators provided on the socio-economic objectives

(see Annex 432), and on the basis of the annexes we have established

3a and 3b of the monitoring system³³, typologies regarding the more or less operational character 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.

OPERATIONALITY OF MONITORING OF NEGATIVE OR UNCERTAIN IMPACTS - READING ON THE MONITORING INDICATORS LINKED TO THE SOCIO-ECONOMIC OBJECTIVES

On the MED side, 11 socio-economic actions are likely to have negative (18 impacts) or uncertain (65 impacts) impacts. In the monitoring system, these actions refer to 27 monitoring indicators linked to the socio-economic objectives. Their operability can be approached according to the typology and with the following results for the 27 indicators concerned.



The monitoring of socio-economic actions with negative or uncertain environmental impacts appears to be moderately operational from the point of view of the indicators attached to the SEOs, since for more than half of them (orange for 16/27), their relevance remains to be proven and/or the collection system needs to be clarified. It should be noted, however, that the rest of the indicators (green for 11/27) have a data collection mechanism and a data producer and that no indicators are to be defined.

³² Annex 4: Tables and detailed fact sheets of the strategic targets and associated indicators - 4.1. a table listing the strategic targets (SEOs and ETs) and their indicators

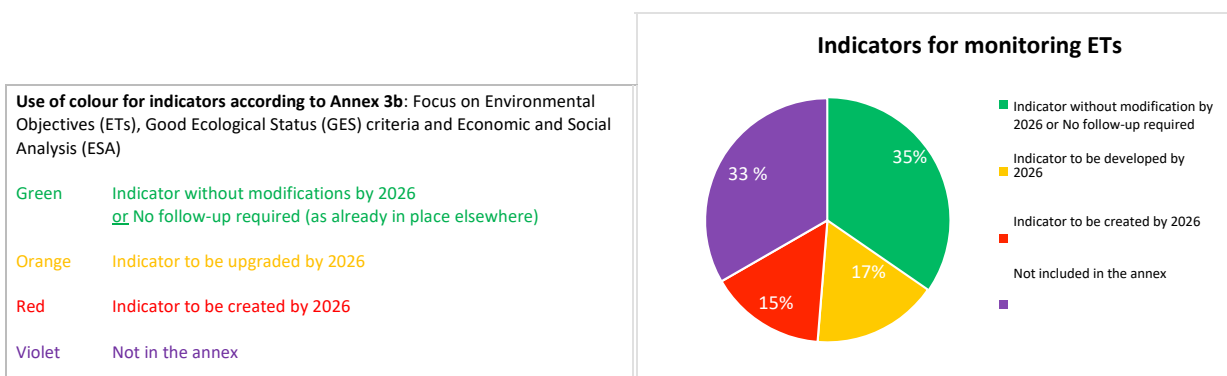
³³ in Annex 3a: Indicators and data collection devices - Part "activities, uses and public policies" and Annex 3b: Focus on Environmental Objectives (ETs), Good Ecological Status (GES) criteria and Economic and Social Analysis (ESA)

Of the 11 actions, those with negative impacts are MREs and aquaculture. The operational nature of the socio-economic monitoring indicators for these actions is heterogeneous depending on the theme: 2/3 operational for aquaculture (2 green and 1 yellow), a little more mixed for MRE (2 green, 3 orange)

OPERATIONALITY OF MONITORING OF NEGATIVE OR UNCERTAIN IMPACTS - READING ON THE MONITORING INDICATORS LINKED TO THE ENVIRONMENTAL OBJECTIVES

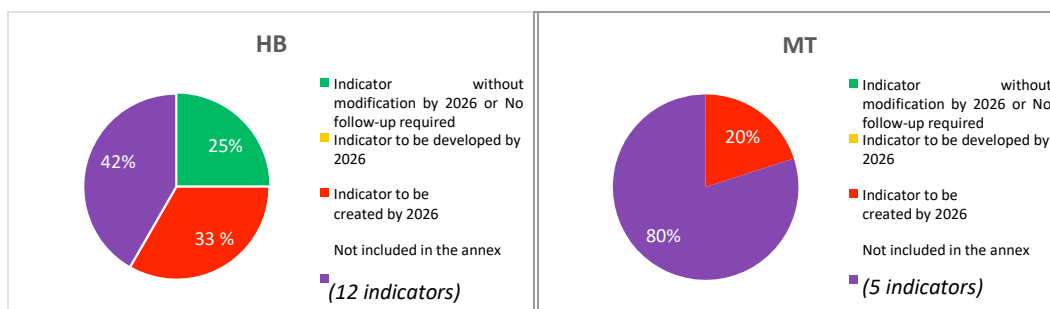
On the MED side, the 83 negative and uncertain impacts concern 15 out of 17 issues (except for Air and Knowledge), with between 1 and 11 impacts per issue. The main issues concerned are HB (11 incidences), Int (10 incidences) PC, De (8 incidences), Cont, Hyd (7), MT, OM (6), EC and ENI (5). Other issues are impacted less: Br (3 incidences), RT, Eut, Pay (2 incidences) and Ris (1 incidence).

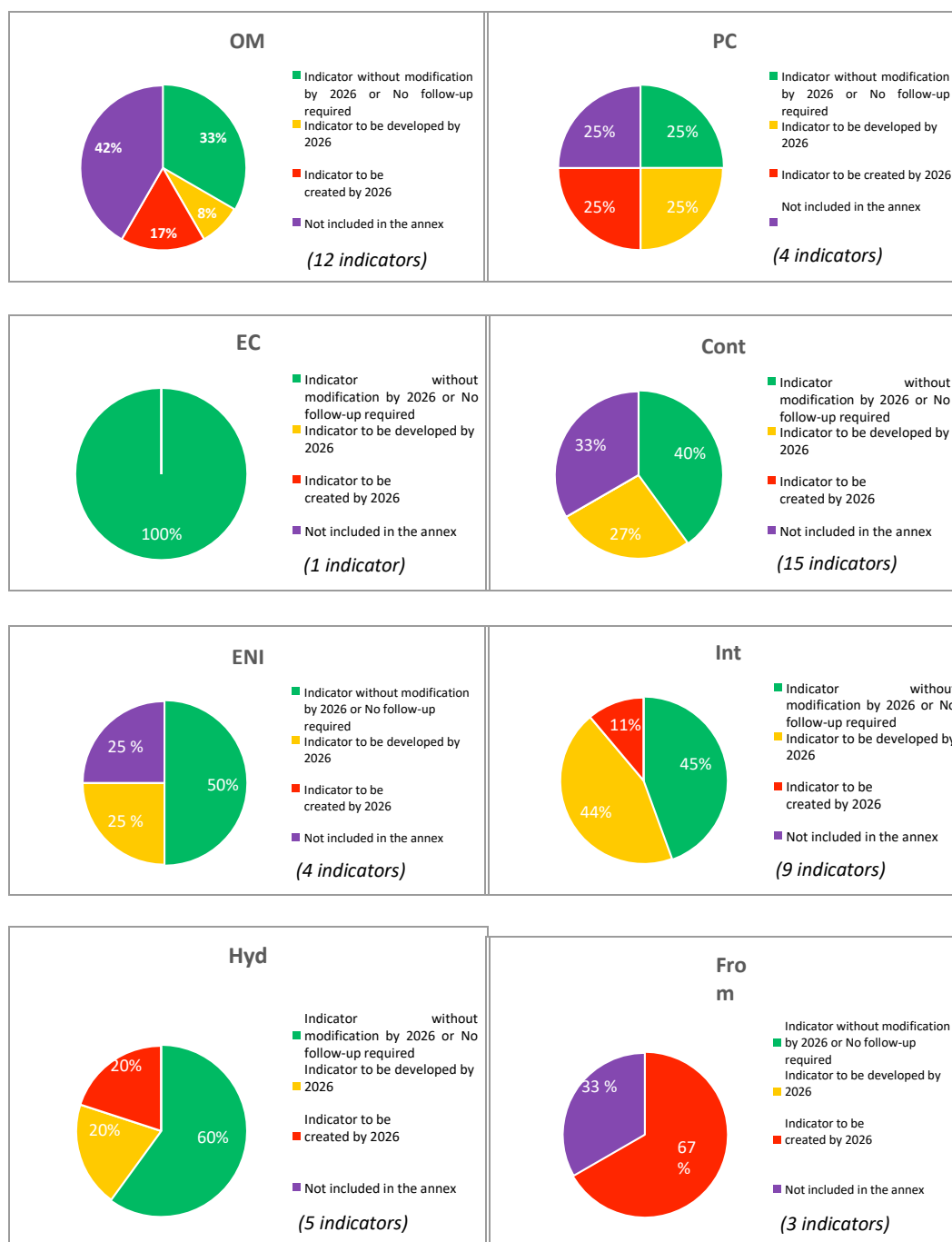
In the monitoring system, the issues related to the biocenosis and the pressures refer to 78 monitoring indicators linked to the environmental targets. Their operability can be approached according to the typology and with the following results for the 78 indicators concerned.



The monitoring of socio-economic actions with negative or uncertain environmental impacts seems to be less operational from the point of view of ET indicators than from the point of view of SEO indicators as mentioned above. In fact, barely 35% of them (green for 27/78) have an indicator that is already operational (No change by 2026 or No monitoring required under the Sea Basin Strategy Document as it is being carried out elsewhere) and 15% are to be created (red for 12/78). An effort remains to be made on the other indicators (amber for 13/78): to evolve existing indicators to obtain information on finer indicators within the framework of the Sea Basin Strategy Document. It should also be noted that it is not possible to comment on almost 33% of the indicators, as these are not included in Annex 3b.

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. Monitoring efforts should be particularly focused on benthic habitats, mammals and turtles, fish and cephalopods and litter.

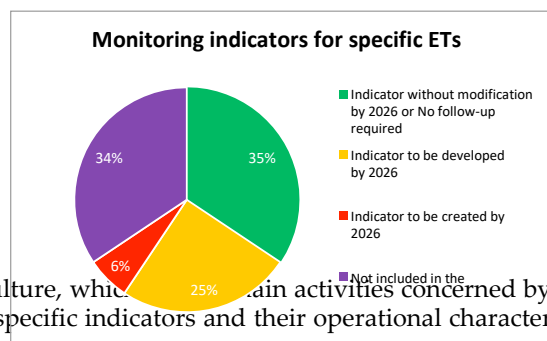
OPERATIONALITY OF ACTIVITY-SPECIFIC ENVIRONMENTAL INDICATORS

Among the 78 indicators for monitoring environmental targets, we were able to identify about 30 (32/78) specific to activities, notably those likely to generate the negative and uncertain impacts of our 11 socio-economic actions:

- Fishing: professional fishing (7 - 2 green, 1 red and 4 purple), foot fishing (1 green), professional and leisure fishing (1 red), Mixed (with pleasure boating) (3 - 1 green and 2 purple);

- Aquaculture (2 - 1 green and 1 purple);
- Energy production (1 green);
- Extraction of materials (4 - 2 green and 2 orange);
- Artificialization of the coastline (4 orange);
- Shipping and boating: shipping (2 - 1 green and 1 orange), boating (1 purple), mixed (3 purple);
- Ports (3 - 2 green and 1 orange).

First of all, as shown in the graph opposite, the indicators that can be identified as activity-specific have the same overall operability as all the indicators (35% green here and for all ETs). It should be noted, however, that the proportion of indicators to be created is lower for specific ETs than for all ETs (6% red versus 15%)



In addition, for MRE, ports and fisheries/aquaculture, which are the main activities concerned by negative and uncertain impacts, the number of specific indicators and their operational character differs greatly for these three activities:

- for MREs, a single operational indicator;
- for ports, three indicators, two of which are operational;
- for fisheries/aquaculture, many more indicators (14) but not very operational to date (33%).

Attention should therefore be paid to strengthening the monitoring of the impacts of these activities, by extending the specific indicators (MRE) and/or improving their operability (fisheries/aquaculture).