



MARINE STRATEGIES

VII. PROGRAMMES OF MEASURES



EXECUTIVE SUMMARY



GOBIERNO
DE ESPAÑA

MINISTERIO
DE AGRICULTURA, ALIMENTACIÓN
Y MEDIO AMBIENTE



1. INTRODUCTION

The final aim of Directive 2008/56/EC, of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (**Marine Strategy Framework Directive, henceforth MSFD**), is to **achieve or maintain a good environmental status (GES) of the marine environment by 2020 at the latest**.

The MSFD was incorporated into Spanish legislation by means of Law 41/2010, of 29 December, on the protection of the marine environment. That law establishes the general legal framework for the protection of the Spanish marine environment.

Marine strategies are the planning instruments for the marine environment and they establish the general framework to which the different sectoral policies and administrative actions with an impact on the marine environment must adapt. Their application seeks the following objectives:

- To protect and preserve the marine environment, including its biodiversity, avoid its degradation or restore, where practicable, the marine ecosystems in those areas where they have been adversely affected;;
- To prevent and reduce inputs into the marine environment, in order to progressively phasing out the pollution of the marine environment.
- To ensure that the activities and uses in the marine environment are compatible with the conservation of its biodiversity, which means that their management must be designed taking into account the ecosystem-based approach.

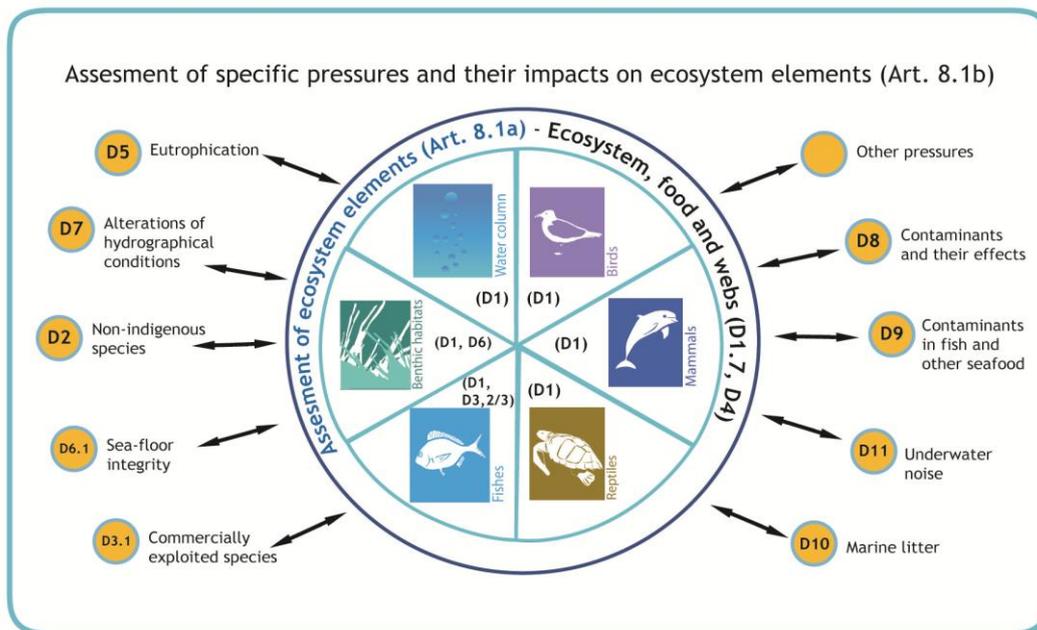


Figure 1. Application of the ecosystem-based approach in marine strategies through the eleven qualitative descriptors of good environmental status (GES). Adapted from the document “Cross-cutting Issues” (European Commission, 2015).



Marine strategies are applied to marine waters, the seabed, the subsoil and the natural resources under Spanish sovereignty or jurisdiction. The strategies will not be applicable to coastal waters for those aspects covered by the river basin management plans, deriving from the application of Directive 2000/60/EC, which establishes a framework for community action in the field of water policy (Water Framework Directive, henceforth WFD).

The Spanish marine environment has been divided into 5 marine subdivisions (MD), taking into account the hydrological, oceanographic and bio-geographical characteristics of each area: north Atlantic MD, south Atlantic MD, Estrecho and Alborán MD, levantine-balearic MD and canary MD.

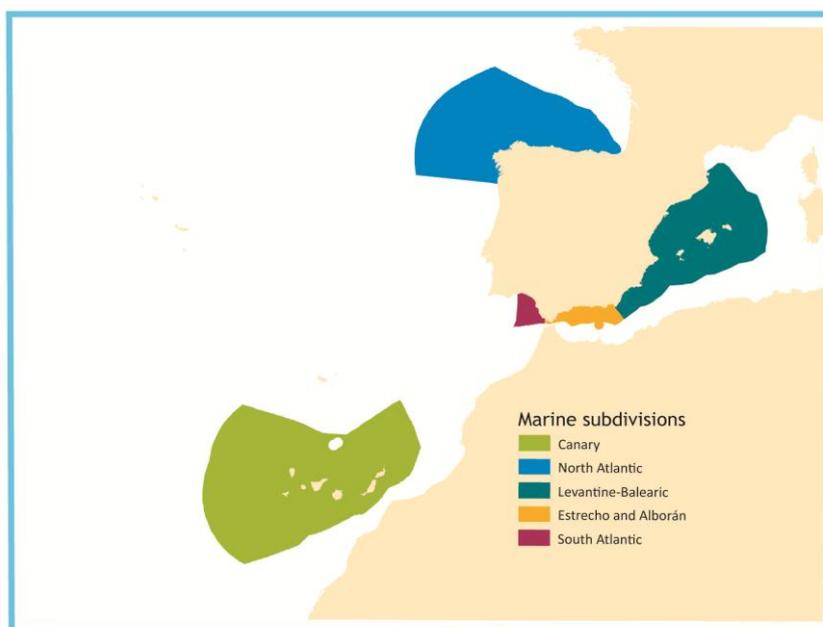


Figure 2. Geographical scope of the five Spanish marine demarcations. NOTE: This map is for technical use and it does not reflect any border with neighbouring states.

Implementation of the strategies is structured around the eleven qualitative descriptors of the good status of the marine environment established in the MSFD:

- ◆ D1: Biodiversity
- ◆ D2: Non-indigenous species
- ◆ D3: Commercially exploited species
- ◆ D4: Food webs
- ◆ D5: Eutrophication
- ◆ D6: Sea-floor integrity
- ◆ D7: Alterations of hydrographical conditions
- ◆ D8: Contaminants and their effects
- ◆ D9: Contaminants in fish and other seafood
- ◆ D10: Marine litter
- ◆ D11: Underwater noise

The system adopted in order to draw up the marine strategies, established by the working groups of the Common Implementation Strategy, was as follows:

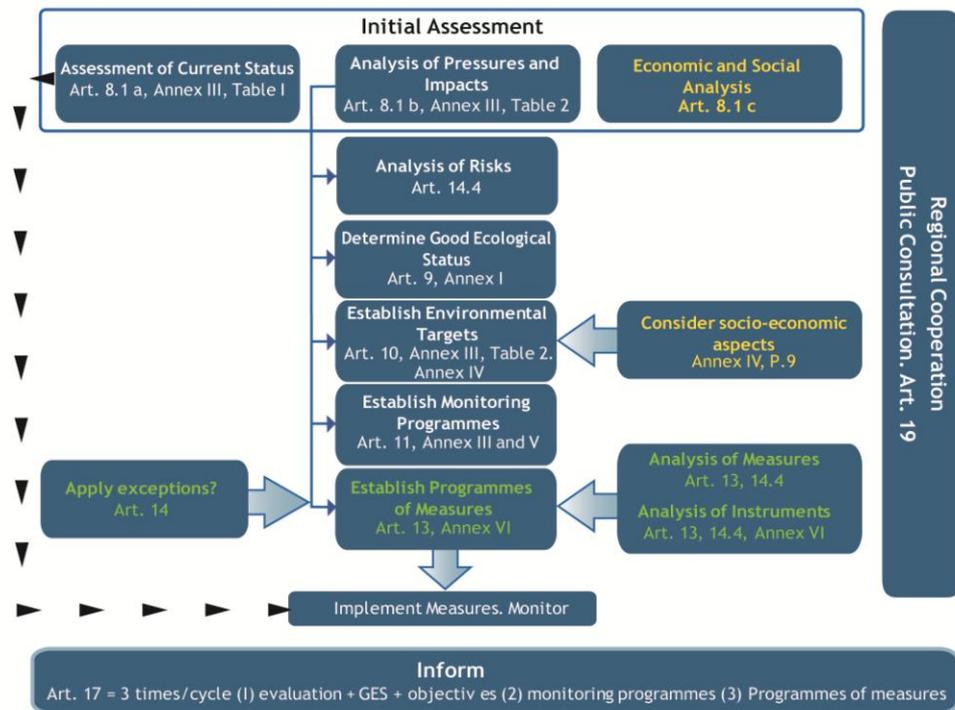


Figure 3. Phases in the marine strategies implementation

For each Spanish marine subdivision, a marine strategy must be developed and its implementation follows an iterative process which is carried out in six-year cycles. The design and implementation of the marine strategies has been structured in a series of consecutive phases:

- ◆ **Initial assessment of the marine environment (2012):** this work included the carrying-out of three types of analysis:
 - Analysis of essential features and characteristics and the current environmental status of the marine waters
 - Analysis of the predominant pressures and impacts which affect the environmental status: a qualitative and quantitative analysis was carried out, mainly of spatial and temporal trends when that information was available. With this analysis, the areas which could potentially be most affected were identified, on which it was therefore advisable to focus the analysis of the environmental status.
 - Economic and social analysis of the use of marine waters and the cost of the degradation of the marine environment: the most important economic sectors in the Spanish marine subdivisions were analysed and characterised using different indicators of activity and economic indicators.



The above analyses took into account the elements related to the coastal waters, transitional waters and the territorial waters affected by the WFD, and they were carried out in coordination with the neighbouring countries France, Italy and Portugal, as well as the other European Member States, in order to ensure that transboundary characteristics and impacts were taken into account.



Figure 4. Iterative process for the development of marine strategies

- ◆ **Determination of good environmental status (GES) (2012):** following the initial assessment, and for each one of the eleven qualitative descriptors, the good environmental status (GES) which the marine waters of the five demarcations should have was determined. The definition of GES proposed by Spain has been, if there is robust scientific information, always of a quantitative nature, with quantitative thresholds between GES/non-GES. In those cases in which a quantitative definition was not possible, a qualitative definition was established of what the desired status would be with regard to certain descriptors or criteria.
- ◆ **Establishment of environmental targets and associated indicators (2012):** a series of environmental targets and associated indicators were established for the different marine subdivisions in order to guide the process towards the achievement of GES in the previously-defined marine environment. These environmental targets are coherent and compatible with those which already existed at the national, community and international levels in the same waters and they were approved by Resolution of the Council of Ministers of 2 November 2012.
- ◆ **Preparation of the monitoring programmes (2014):** a series of 13 programmes was established, organised by descriptors and in turn broken down into 65 sub-programmes. The purpose of these is double: on one hand, the on-going assessment of the environmental status of the marine waters and their progress towards achieving the



previously-defined GES; and, on the other hand, to assess the effectiveness of the measures contained in the programme of measures when these are implemented.

- ◆ **Preparation of the programmes of measures (2015):** they must be defined by the end of 2015, and their implementation must begin in 2016. The programmes of measures are the executive part of the marine strategies, detailing the measures which Spain is going to carry out over the 2016-2021 period in order to achieve or maintain the GES of the marine environment, and they imply the formal commitment of all the competent authorities involved.

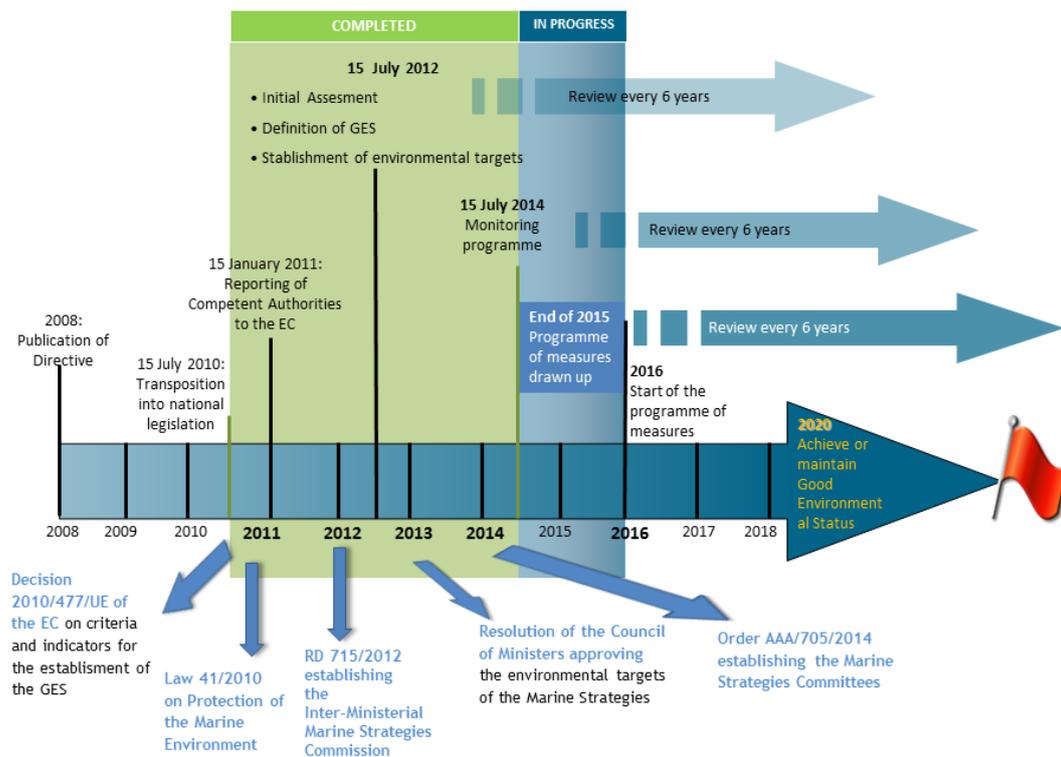


Figure 5. Timetable and current status of preparation and implementation of the Spanish marine strategies.

2. THE PROGRAMMES OF MEASURES OF THE MARINE STRATEGIES

The design of the programmes of measures was undertaken in such a way that there is a close link with the previous phases of the strategies. The programmes of measures are the most executive part of the marine strategies and they maintain a conceptual link with the first three phases of the marine strategies:



The concept of a "measure" is broad and it includes the following types of actions:

- ◆ Regulations applicable to activities which have an impact on the marine environment, guidelines on the uses of the marine environment, action projects, geographical or temporal restrictions of uses, and measures to control and reduce pollution, among others.
- ◆ Spatial protection measures, to contribute to the creation of coherent and representative marine network of protected areas network.
- ◆ Specific measures for the protection of species and habitat types.

INITIAL ASSESSMENT	ENVIRONMENTAL TARGETS	MEASURES
Are we in GES already, according to the available information?	To guide progress towards achievement of GES	What actions must we take in order to achieve the GES and the ETs
YES	Maintain the GES	No additional measures are necessary (there is no significant risk). Possible measures aimed at maintaining the GES
NO	Targets aimed at: i) improving the status, ii) reducing the pressures; iii) operational objectives	Measures aimed at achieving GES, and the ETs (reducing pressures, regulating activities, etc.)
WE DO NOT KNOW. There is no information to answer the question	Applying the precautionary principle, targets will be addressed aimed at: i) improving the status, ii) reducing the pressures; iii) operational objectives, including knowledge-improvement objectives	All of the above, plus measures aimed at improving knowledge

Table 1. Relation between the first phases of the marine strategies and the programme of measures

The measures may be of two types:

- ◆ **Existing measures** are those which had already been defined in the framework of other environmental policies by the different competent authorities (at the level of both the General State Administration and the Autonomous Communities), though they may have been fully implemented (measures 1.a) or not (measures 1.b).
- ◆ **New measures** are those which were proposed after having carried out an analysis of the effectiveness of the existing measures and the gaps remaining in order to achieve the GES (gap analysis), a process is carried out descriptor by descriptor. The new measures may be framed within community regulations or existing international agreements, going beyond the obligations deriving from those regulations (new measures 2.a), or be measures which address aspects not covered by previous regulatory instruments (measures 2.b).

The new measures must be subject of a detailed characterisation which includes an estimation of their cost, the technical feasibility, as well as an analysis of their economic and social impact (cost-benefit and cost-effectiveness analysis) and their environmental impact, which must be



taken into account when prioritising measures and possible alternatives.

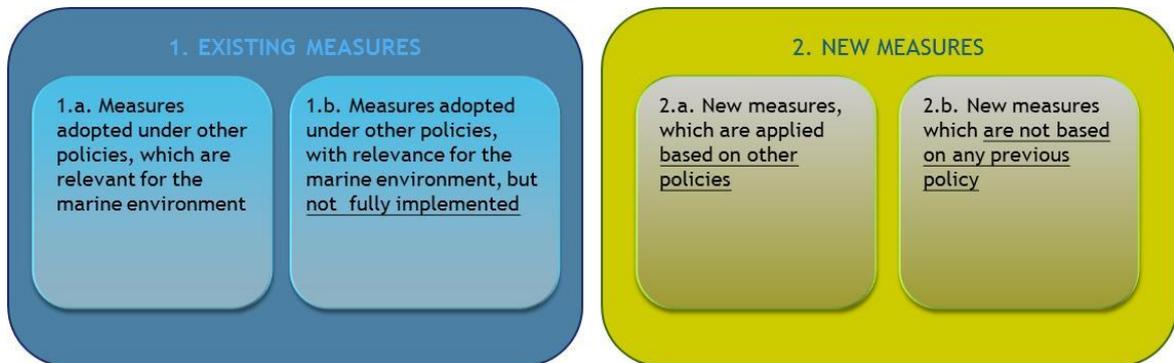


Figure 6. Types of existing measures and new measures

The programme of measures was structured around nine themes: seven of them encompass the eleven qualitative descriptors of the marine environment, and two are additional themes: marine protected areas and horizontal, crosscutting measures (generally issues related to governance in the broad sense, such as coordination among administrations, public participation, training, awareness-raising, etc.). The established themes are:

- ◆ Biodiversity (Descriptors 1, 4, and 6)
- ◆ Non-indigenous species (Descriptor 2)
- ◆ Commercially exploited species (Descriptor 3)
- ◆ Eutrophication, Contaminants and their effects, and Contaminants in fish and other seafood (Descriptors 5, 8, and 9)
- ◆ Permanent alteration of hydrographical conditions (Descriptor 7)
- ◆ Marine litter (Descriptor 10)
- ◆ Underwater noise (Descriptor 11)
- ◆ Marine protected areas
- ◆ Horizontal measures

For the preparation of the programmes of measures, the following technical work was carried out:

2.1 Inventory of existing measures

An inventory of existing measures has been compiled, which includes:

a) Measures included in the second cycle of the river basin management plans (2015-2021) which are relevant for the marine environment:

The methodology for the preparation of the river basin management plans and that for marine strategies show great similarities. In addition, the implementation cycles of both planning instruments overlap with regard to the timetables within which the programmes of measures must be established.

Though it was not possible for the proposals of river basin management plans and marine strategies to overlap in time during the public consultation and information process, we have



worked actively with the competent authorities with regard to hydrological planning in order to ensure effective coordination between the programmes of measures of both instruments. It is likely that there will be increasing parallelism between the two processes in subsequent implementation cycles.

- ◆ **Coordination of the river basin management plans with the marine strategies:** the General Directorate of Sustainability of the Coast and the Sea (DGSCM, MAGRAMA) presented contributions to the river basin management plans of ten Inter-community and thirteen intra-community River basin districts, covering both the coastal and marine measures to be included.
- ◆ **Coordination of the marine strategies with the river basin management plans:** the final aim of this work was to identify the existing measures within the second cycle of WFD implementation (2015-2021) which could contribute to improving the status of the marine environment (called MSFD-relevant measures). The methodology followed for this is summed up in figure 7:

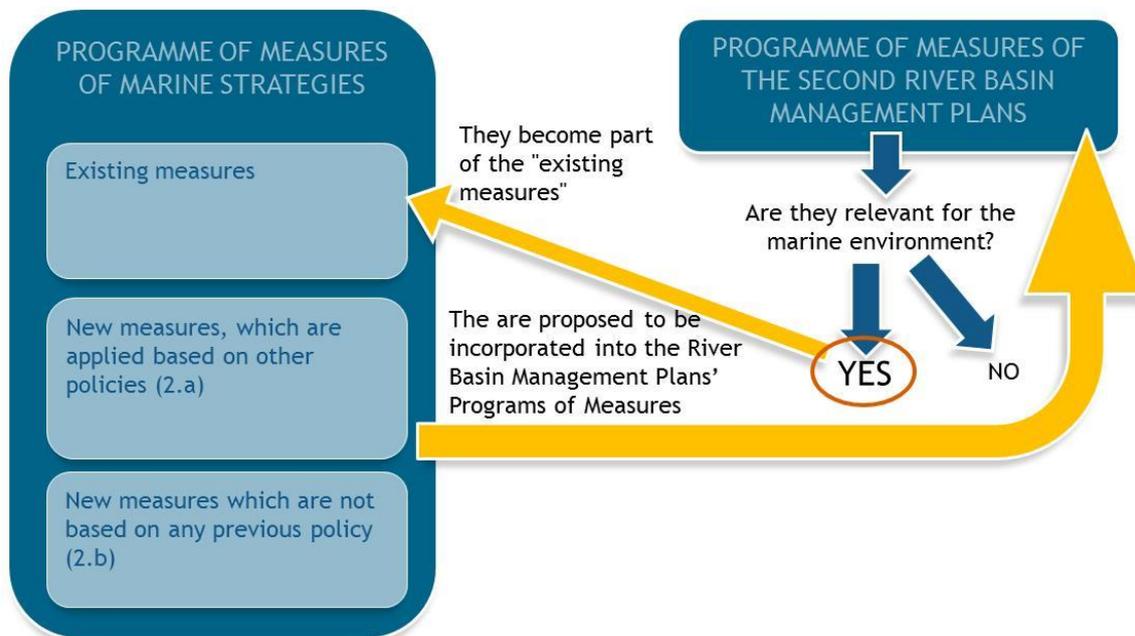


Figure 7: Diagram of the analysis carried out of the existing measures in the hydrological plans and their relevance for the marine strategies

Each one of the measures which are included in the programme of measures of the marine strategies must be assigned to a KTM (Key Type of Measure). KTMs are a predefined set of types of key measures and are the unit into which the measures must be bundled to be reported to the European Commission. There are 25 KTMs deriving from the WFD (intended mainly for pressures having their origin on land), 20 of which have been identified as relevant for marine strategies. In addition to these, in the working groups of the Common Implementation Strategy of the MSFD, 14 additional, clearly marine KTMs were defined to address other types of pressures related to the activities which take place in the sea and other types of actions which could affect marine waters.



As a result of the coordination with the competent authorities with regard to hydrological planning, **of the 15,466 measures included in the database of the General Directorate of Water (MAGRAMA, August 2015 version), 5,156 measures (33.40%) were finally identified as relevant for the marine strategies.**

b) Measures deriving from other policies, at both national and regional level: in addition to the measures included in the river basin management plan, there are many other regulatory references which have been identified as measures with relevant positive effects for the marine environment. Therefore, international agreements, national legislation and plans, programmes and initiatives (legislative and environmental policy measures) were compiled and also, based on these, other types of measures (technical and economic) already planned and implemented.

The inventory of existing measures was stored in a **database of measures** specifically designed for this work, in which each measure is related to the environmental targets and GES descriptors, the pressures and impacts, the economic sectors it affects, for each of the five marine subdivisions. In this way, both the existing measures and the new ones are adequately characterised, as this database also includes information on the latter, and it has been used to carry out the analysis of the existing gap between the initial status and the GES to be achieved.

c) Measures from other policies, gathered from the responses to the standardised questionnaires sent to the competent authorities: a formal consultation was carried out with the authorities of the General State Administration and the Autonomous Communities with competencies regarding the environment and in particular the marine environment. That consultation was channelled through the contact points of the Inter-Ministerial Marine Strategies Commission (CIEM), which is a body for coordination between Ministerial Departments of the General State Administration and the five Marine Strategies Committees (CS); the equivalent body for cooperation with the coastal Autonomous Communities.

The approach adopted was of an economic type, i.e. focussing the request for information on the budgetary programmes of the public administrations in which the funding for measures of relevance for the marine environment could be included.

To carry out this work, all the existing information available to the public on budgetary programmes of the last five years (2009-2012) was compiled for the different bodies, both national (17 budgetary programmes) and regional (108 budgetary programmes), which have competencies related to the marine environment. To manage the economic information which had been gathered, a **database of budgetary programmes was created**. Based on this, a questionnaire was drawn up, which was customised for each administration. The questionnaire was sent to a total of 10 different Ministries (19 Departments), the 10 coastal Autonomous Communities and the 2 Autonomous Cities. The responses were a number of 42 questionnaires, 28 of them from the Regional Governments, and 14 from the Central State Administration.

As a result of all the work carried out in order to inventory the existing measures, a total of 309 measures or groups of measures were compiled and characterised.



Inventory of existing measures or groups of measures	
Theme of the programme of measures	Number of existing measures
Biodiversity (D1, D4, D6)	112
Marine protected areas	34
Non-indigenous species (D2)	16
Commercially exploited species (D3)	29
Eutrophication (D5), contaminants and their effects (D8), contaminants in fish (D9)	64
Permanent alterations of hydrographical conditions (D7)	9
Marine litter (D10)	32
Underwater noise (D11)	4
Horizontal	15
Total	315

Table 2. Number of existing measures or groups of measures of the proposal of the programme of measures, by theme

2.2. Characterisation of the measures and analysis of their effectiveness

Once the inventory of existing measures had been completed, they were analysed and discussed with the stakeholders through numerous meetings:

- On the one hand, four workshops were held with experts from scientific background and environmental NGOs, on the following themes: biodiversity (Descriptors D1, D4, D6 and marine protected areas), marine turtles, marine litter and elasmobranchii.
- On the other hand, the inventory was discussed in the framework of the Inter-Ministerial Marine Strategies Commission (CIEM) and the five Marine Strategy Committees of the five marine subdivisions.
- Through bilateral meetings held with all the competent authorities, such as:
 - Ministry of Agriculture, Food & the Environment
 - D.G. of Environmental Evaluation and Quality and the Natural Environment: Environmental Assessment Subdirection; Waste Subdirection.
 - D.G. of Fisheries and Aquaculture Resources: Subdirection of National Fishing Grounds, Community Waters and Aquaculture; Subdirection of Regional Fishery Agreements and Resources; Subdirection of the Protection of Fishery Resources;
 - D.G. of Fishery Management: Structural Policy Subdirection; Subdirection for Fishery Inspection and Surveillance;
 - Internal meetings among the different units and offices of the General Directorate of Sustainability of the Coast and the Sea
 - Biodiversity Foundation
 - Ministry of Public Works:
 - State Ports
 - D.G. of Merchant Navy.



- Ministry of the Interior:
 - Maritime Service of the Civil Guard
- Ministry of Industry, Energy and Tourism:
 - Hydrocarbons Subdirection
- Ministry of the Economy and Competitiveness
 - D.G. of Scientific and Technical Research
 - Spanish Oceanography Institute (IEO)

As a result of the above, numerous suggestions and contributions from all the agents and stakeholders were incorporated into the inventory. Likewise, it was also discussed whether the existing measures were considered sufficient or not to achieve the GES.

2.3. Proposal of new measures

By means of the analysis of effectiveness of the existing measures, a gap analysis was carried out for each of the themes to be addressed in the programmes of measures. The proposal of new measures therefore stemmed from different sources, and the methodology for its preparation, was as follows:

- ◆ Drafting of an initial proposal of new measures covering the measures proposed in **the workshops with experts**.
- ◆ Inclusion in the initial proposal of other measures proposed by the technical marine strategies team (DGSCM, MAGRAMA) for the different themes of the programmes of measures, deriving from the knowledge of the issues which deserve special attention in relation to the good status of Spanish marine waters.
- ◆ Analysis, discussion and validation of this initial proposal of new measures with the competent authorities of the General State Administration (through the **CIEM**, and from the **bilateral meetings held**) and of the Autonomous Communities (in the framework of the **Marine Strategies Committees**).
- ◆ Inclusion of new measures in those cases in which there were actions which are going to be undertaken by the administrations in the framework of their competencies and which were not originally included in the proposal.

2.4 Cost-benefit and cost-effectiveness analysis of the new measures

As a last step before defining the proposal of new measures, an economic and social evaluation of the new measures was carried out, through analysis of the technical viability, the cost-benefit analysis (CBA) and the cost-effectiveness analysis (CEA) of all the measures to achieve or maintain the GES. Those analyses were taken into account for the establishment of the final proposal of new measures which is included in the draft programme of measures.

- Cost analysis: the data were extracted from the database of budgetary programmes, drawn up with the compilation of economic information carried out on the budgetary programmes of the competent administrations and the responses to the questionnaires sent out.



- Assessment of the effectiveness of the application of the new proposed measures in the mitigation of 18 pressures which have an impact on the marine environment.
- Assessment of the benefit of applying the new proposed measures in the 9 economic sectors which represent over 90% of GDP and Employment related to the marine environment in Spain:

MAIN ECONOMIC SECTORS OF THE MARINE ENVIRONMENT
Aquaculture
Fishery Sector
Port Infrastructure
Shipbuilding
Recreational boating
Oil and Gas
Maritime transport
Tourism
Plastics industry

Table 3. Most important economic sectors carrying out activities in the marine environment



ECONOMIC AND SOCIAL ANALYSIS OF THE PROPOSAL OF NEW MEASURES (BY THEMES)			
Themes of the programme of measures	EVALUATION OF THE AVERAGE COST	ASSESSMENT OF AVERAGE EFFECTIVENESS	ASSESSMENT OF AVERAGE BENEFIT (FROM VERY LOW TO VERY HIGH)
	Very Low (5) Very High (1)	Very low (1) Very high (5)	Very Low (1) Very High (5)
		Pressures for which the proposed measures are especially effective	Sectors for which the average benefit is highest
Biodiversity (D1, D4, D6)	Low (3.6)	Biological disturbances	Very Low Tourism sector
Marine protected areas	Moderate (3.2)	Biological disturbances	Low or Very Low Tourism sector
Non-indigenous species (D2)	Moderate (3.0)	Biological disturbances	Very Low Tourism sector, aquaculture sector
Commercially exploited species (D3)	High (2.45)	Biological disturbances-selective extractions of species, including additional, accidental captures	Very Low Fishery Sector
Eutrophication (D5), contaminants and their effects (D8), and Contaminants in fish and other seafood (D9)	Moderate (3.7)	Systematic discharges and contamination by hazardous substances	Moderate to Very Low Port infrastructure sector
Alterations of hydrographical conditions (D7)	High (2.0)	Interference with hydrological processes	Moderate to Very Low Aquaculture sector, fishery sector and maritime transport sector
Marine litter (D10)	Moderate (3.56)	Other physical disturbances-marine litter	Low to Very Low Fishery Sector
Underwater noise (D11)	Low (5.0)	Other physical disturbances-underwater noise.	Very Low No economic sector would be benefited
Horizontal	Moderate/High (3.0)	Contamination by hazardous substances.	Low to Very Low Tourism sector

Table 4. Summary of the economic and social analysis carried out for the new measures



2.5 Strategic environmental assessment of the proposal of measures

In accordance with Law 21/2013 on Environmental Assessment, and alongside the preparation of the proposal of the programmes of measures, all of the marine strategies, and in particular this fifth phase of their implementation, are undergoing a process of strategic environmental assessment.

After the sending of the **initial document** by the Promoting Authorities (D.G. of Sustainability of the Coast and the Sea) to the Environmental Authorities (D.G. of Environmental Quality and Assessment and the Natural Environment, MAGRAMA) on 17/06/15, from 16/07/15 to 16/10/15 the prior consultations with the affected public administrations and interested parties were carried out.

As a result of that process, on 11/11/15 the **scoping document** was received by the Environmental Authorities, establishing the guidelines for the preparation of the **strategic environmental study**. However, and taking into account that the marine strategies have a clearly environmental objective, which is specified for each one of the descriptors to achieve the GES of the marine environment, no significant negative effects on the environment are expected. The strategic environmental study will focus on the environmental issues indicated by the Environmental Authority and which were not covered in the programme of measures, and will also respond to the considerations put forward by the affected administrations and the interested parties consulted for the preparation of the scoping document.

After the public consultation phase, the Promoting Authority will forward the complete document to the environmental body so that it can draw up the **strategic environmental declaration**. That document will evaluate how the environmental aspects have been incorporated into the proposal of the programme of measures. In the final drafting of the programmes of measures, and by extension the marine strategies, the strategic environmental declaration resulting from the environmental assessment process will be taken into account.

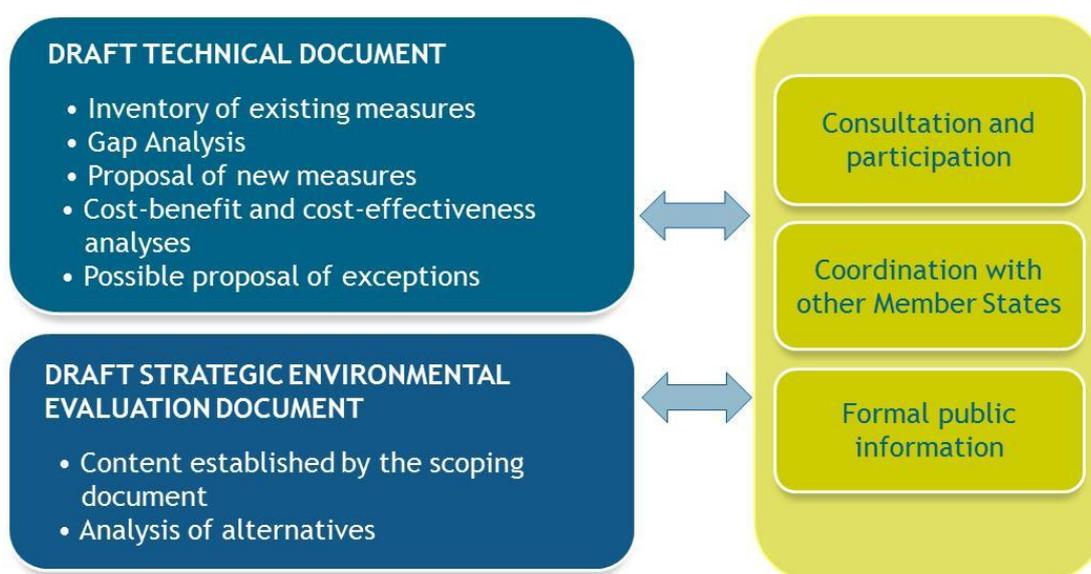


Figure 8. Public consultation and information of the drafts of the programme of measures and the strategic environmental study



The proposal of new measures is structured as follows:

Proposal of new measures	
Theme of the programme of measures	Number of new measures
Biodiversity (D1, D4, D6)	25
Marine protected areas	12
Non-indigenous species (D2)	3
Commercially exploited species (D3)	9
Eutrophication (D5), contaminants and their effects (D8), contaminants in fish (D9)	9
Hydrographical alterations (D7)	1
Marine litter (D10)	25
Underwater noise (D11)	1
Horizontal measures	10
Total	95

Table 5. Number of new measures in the programme of measures, by theme

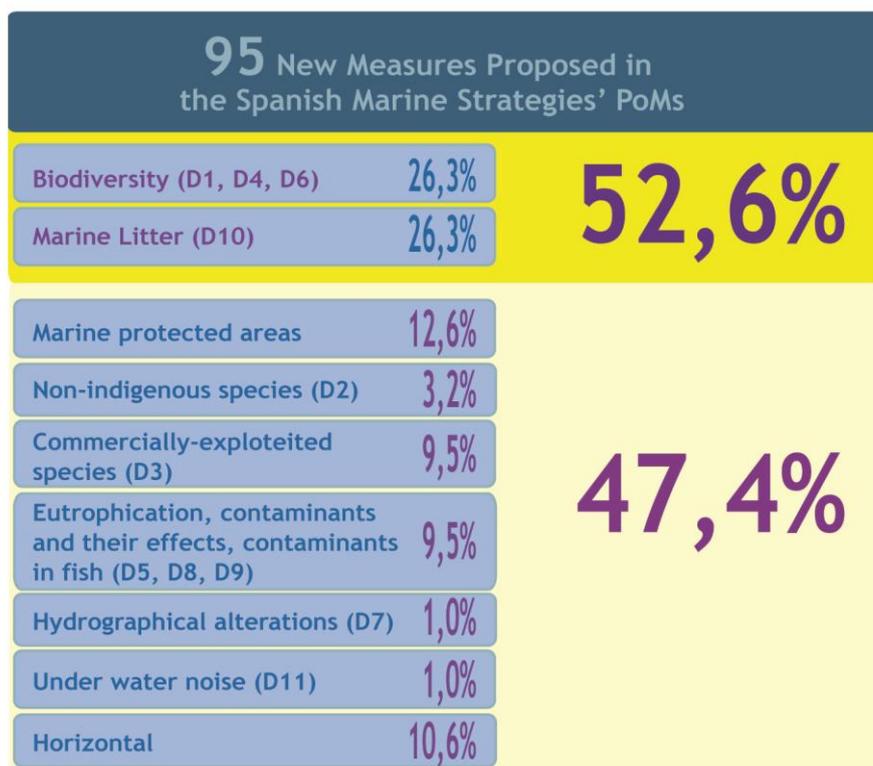


Figure 9. Proportion of new measures by theme, in the proposal of the programmes of measures



3. REGIONAL COORDINATION FOR THE PREPARATION OF THE PROGRAMMES OF MEASURES

The Member States in each marine region or subregion will do everything possible to coordinate their programmes of measures, prioritising the use of the existing regional coordination structures (i.e. the Regional Seas Conventions, RSCs). In Spain, that regional coordination is addressed through different channels:

a) Through the Regional Seas Conventions: Spain regularly participates in the regional and subregional coordination processes through the two Regional Seas Conventions (RSCs): OSPAR in the Atlantic and Barcelona in the Mediterranean. That coordination is not effective for the marine waters of the Macaronesia subregion, as the Canary Islands archipelago is not within the geographical scope of the OSPAR Convention:

- ◆ **The Oslo and Paris Convention for the protection of the marine environment of the North-East Atlantic (OSPAR Convention)** covers the Spanish marine waters of the North Atlantic and South Atlantic subdivisions. The Convention is actively working on coordination of implementation of the marine strategies of the countries which are Signatories to the Convention, through the ICG-MSFD group (Intersessional Correspondence Group on the Marine Strategy Framework Directive), with Spain's active participation. The OSPAR document *Joint Documentation on Coordination of Measures* includes a compilation of the existing measures in the regional scope of the Convention (called the “OSPAR acquis”), and a compendium of additional information on other measures which have been proposed by the different Parties to the Convention, in a coordinated and/or joint manner. The OSPAR acquis document was taken into account as a basic reference in the preparation of the inventory of measures, incorporating into the national inventory all those which derive from OSPAR (provided they are applicable in the Bay of Biscay and Iberian Coast subregion, which coincides with Region IV of the OSPAR Convention).

- ◆ **The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention)** covers the Spanish Mediterranean marine waters, i.e. all of the levantine-balearic and Estrecho and Alborán subdivisions. The most important contribution of the Convention to the marine strategies coordination is materialised through the process of applying the *Ecosystem Approach Process* (ECAP). In the framework of this process, 11 ecological objectives (EOs) were approved, very similar to the descriptors of the MSFD, with their respective GES definitions and operational objectives. At present, work is currently being carried out on the design of a joint monitoring programme. The work of the Convention in relation to common measures is still in its early stages, but the work carried out in the analysis of existing measures in the document “*Draft Ecosystem Approach based Measures Gap Analysis*” is worthy of note. It is envisaged that at the next COP in February 2016, the Parties to the Convention will agree to continue working on the gaps analysis and the proposal of coordinated and/or joint measures in the scope of the Mediterranean Sea, for the next two-year period (2016-2017).



b) Other coordination mechanisms:

- ◆ **Coordination in the Mediterranean, among the 8 Member States:** The European Commission has funded a support project to the 8 Mediterranean countries which are members of the EU (EU Med MS Project phase II), which is the continuation of the first phase whose work focussed on the joint preparation of the country monitoring programmes.

In the framework of this project, in 2015 a joint coordinated effort was made by the countries for the identification, selection and analysis of measures on different specific issues: descriptor D10-marine litter, the application of articles 14 and 15 of the MSFD and the conservation measures with a spatial-based component in relation to descriptors D1-biodiversity and D3-commercially exploited species. Spain has actively participated in the meetings of this project. As a result, it has been possible to integrate into the Spanish proposal many measures which were previously discussed in that forum.

- ◆ **Bi- and tri-lateral meetings:** in order to improve the coordination of the proposal of programmes of measures with those of our neighbouring countries, Spain has participated in the following meetings:
 - In the Western Mediterranean subregion, meeting between Spain, Italy and France (Paris, 21 October 2015)
 - In the Bay of Biscay and Iberian Coast subregion, meeting between Spain, France and Portugal (Madrid, 20 September 2015)
 - In the Macaronesia subregion, bilateral meeting between Spain and Portugal (Madrid, 20 September 2015).

4. APPROVAL OF THE MARINE STRATEGIES

The proposal of programmes of measures will be subject to a regulated public consultation process from 23/12/2015 to 15/03/2016, in order to gather the contributions of the affected public administrations, interested parties, stakeholders and society in general.

The marine strategies, including their programmes of measures, will be approved by Royal Decree, following that established in article 15 of Law 41/2010. This process will also involve the corresponding public participation process, including debate at the Sectoral Environment Conference, reports from the affected Ministries, the affected Autonomous Communities and Cities, and the Environmental Advisory Council.



Figure 10: Process of approval of the marine strategies by Royal Decree

5. CONCLUSIONS

The main aim of each one of the five marine strategies is to achieve or maintain the good environmental status (GES) and the adequate protection of the waters of the corresponding marine subdivisions. Therefore, the findings of the initial assessment, the definition of GES and the environmental targets, which were put forward in the initial documents of the 5 marine strategies of Spain (section 5 of the present document), were taken into account during the PoMs proposal.

The preparation of the **inventory of existing measures** has been a very useful tool when compiling the series of instruments, initiatives, projects and actions contemplated by Spain in relation to the protection of the marine environment. A considerable number of consulted public Administrations actively participated in that inventory. It is likely that the inventory will be subject to improvement during the public consultation process, if comments are received in this regard.

The figure below shows a summary of the identified existing measures, as well as the number of new measures proposed for each one of the themes.

For each marine subdivision, it is expected that the combination of the existing measures and, in particular, the application of the proposed new measures will make it possible to achieve good environmental status through achievement of the environmental targets.

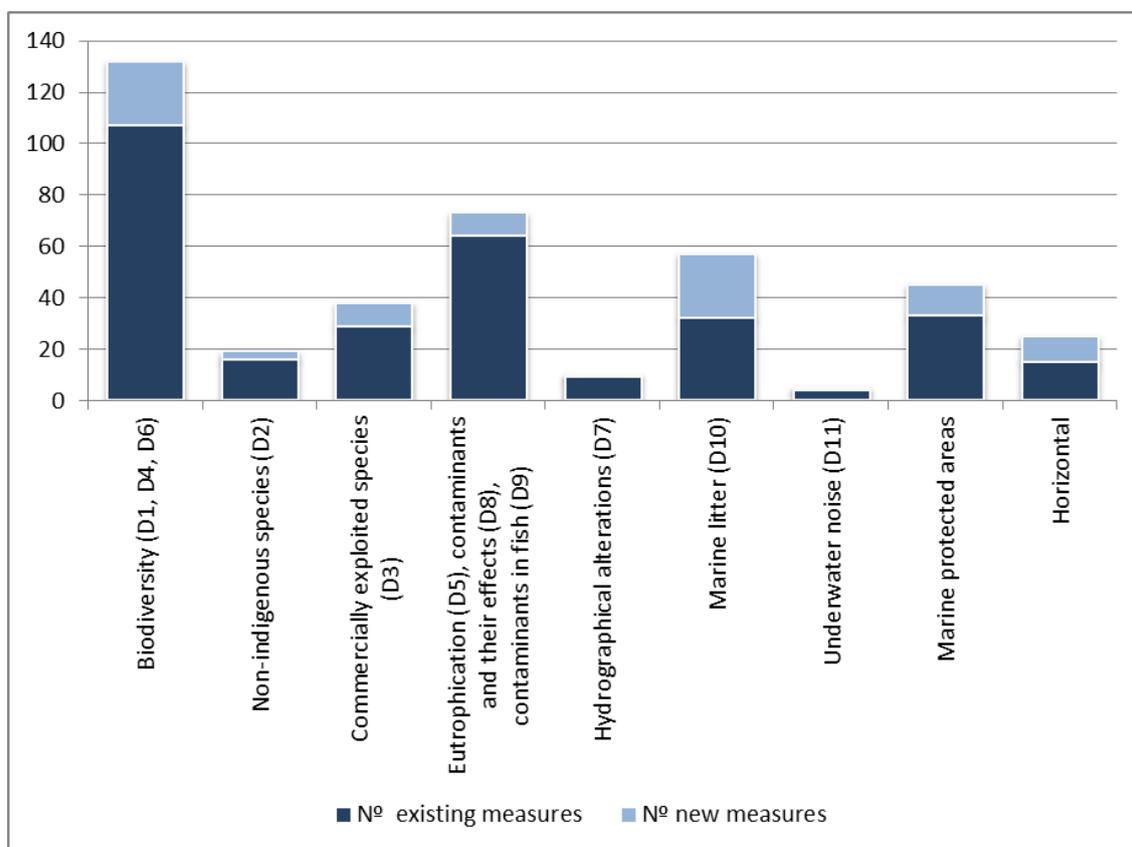


Figure 11. The programmes of measures as a whole: Existing measures identified and proposed new measures by theme

The **proposal of new measures** includes a series of measures for each one of the themes which address the eleven qualitative descriptors of the marine environment, and for marine protected areas. It also includes a proposal of horizontal, crosscutting measures which, in some cases, encompass a number of different descriptors and, in other cases, address issues generally related to governance in the broad sense (coordination among administrations, public participation, training, awareness-raising, etc.).

Of the **total of 95 proposed new measures (see Annex)**, more than half are distributed between the themes of biodiversity and marine litter. The **biodiversity** measures focus on the reduction of different pressures which affect the biological communities and ecosystems. We must not forget that descriptors 1, 4 and 6 are, in accordance with the ecosystem-based approach, those related to the condition of the ecosystem. The measures of the biodiversity theme are complemented by an important series of measures in the scope of **Marine Protected Areas (MPAs)** which seek to address the improvement in the Network of Marine Protected Areas in Spain (RAMPE), with regard to both its spatial coverage and representability and to guarantee an adequate management of all MPAs.

With regard to the **marine litter** measures, these arose following an exercise to design and implement the OSPAR and Barcelona Regional Action Plans on marine litter, adapted to the peculiarities of the Spanish marine subdivisions. Therefore, this proposal of programmes of measures will also be the main tool for the application of these two Regional Action Plans in the Spanish marine environment.



With regard to the measures related to **commercially exploited species**, it has been considered relevant to include all the main lines of action on which Spain will work in the coming years in the framework of the application of the recently-approved Operational Programme of the EMFF (European Maritime and Fisheries Fund).

The measures of the **eutrophication, contaminants and contaminants in fish and other seafood** themes (D5, D8, D9), as well as those of **permanent alterations of hydrographical conditions** (D7), derive mainly from the existing measures in the river basin management plans. The proposal of new measures for these themes aims to address the offshore aspect of these descriptors in greater detail, dealing with the pressures most closely related to activities at sea.

The proposal of a new measure on **underwater noise** seeks to advance in the regulatory instruments for activities which generate impulsive noise.

Finally, a series of **horizontal measures** have been proposed, which, due to their cross-cutting nature, affect a wide range of themes and descriptors. These measures are aimed at improving awareness-raising and training, as well as guaranteeing the sustainability of certain human activities and the compatibility of those activities with the marine strategies.

Each one of the new measures has been characterised in detail, with a fact-sheet for each one of them. This characterisation includes:

- ◆ The list of GES descriptors
- ◆ The sectors affected by the measure
- ◆ The envisaged environmental effect
- ◆ The pressures of Annex 1 of Law 41/2010 (Annex III of MSFD) which that measure addresses
- ◆ The environmental targets at which the measure is aimed
- ◆ The marine subdivision(s) in which that measure will be applied
- ◆ The envisaged date of implementation
- ◆ The competent authority or authorities
- ◆ The monitoring indicators (based on the proposal of indicators of the monitoring programmes, expanded where required to new indicators which make it possible to assess the implementation of the measure)

In addition, an estimation of the cost of the measures has been made, as well as their effectiveness (based on the pressures which are tackled) and their benefit (in the different economic sectors). It is important to stress that the analysis of the benefit has taken into account only the monetary benefit of each one of the measures, and not the intangible benefit (from ecosystem services), which have been more clearly dealt with in the "envisaged effect".

The marine strategies as a whole, including the present proposal of Programmes of Measures, is undergoing a strategic environmental evaluation, and it is anticipated that the Environmental Report will be available for public consultation at the start of 2016.



The proposal was drawn up through a participatory process, with both groups of experts and the different competent administrations. The proposals and indications made by those administrations have been respected, always seeking to adapt them to the terminology of marine strategies.

The present proposal will be subject to revision and improvement as a result of the process of public consultation of the document.



ANNEX

Proposal of new measures for the five marine strategies

THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
BIODIVERSITY (D1, D4, D6)	BIO1. Conservation plan for the killer whale in the Strait of Gibraltar and Gulf of Cadiz	DGSCM	ESAL, SUD
	BIO2. Marine turtles conservation Strategy in Spain	DGSCM/ CCAA	All
	BIO 3. Strategies/Plans for the reduction of the by-catches of protected vertebrates (birds, turtles, marine mammals and elasmobranchii) in fishing gear	DGSCM/SGP/ CCAA	All
	BIO 6. Conservation Strategies for threatened marine bird species	DGSCM/CCAA	All
	BIO 7. Conservation Plans for endangered marine species	DGSCM/CCAA	Depending of the species
	BIO 8. Risk analysis of the by-catches of turtles, cetaceans and marine birds	DGSCM/CCAA	All
	BIO9 Demonstration projects on the mitigation and reduction of by-catch of marine turtles, birds and mammals by the different fishing gears	DGSCM/SGP/ FBIO	All
	BIO 10. Fishery regulations to reduce by-catches (based on that detected in measure BIO8).	SGP/CCAA	Depends of the fishing gear
	BIO 12. Establishment of specific protocols which improve post-capture survival for different fishing gears and ensure their application	SGP/DGSCM/ CCAA	All
	BIO13 Guidelines on the management of recreational nautical activities	DGSCM/DGMM/ CCAA	All
BIO15 Improvement of knowledge: promotion of research studies on birds, turtles, recruitment areas, as well as on the impact of human activities on	MAGRAMA/ FBIO/ MINECO/	All	



THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
BIODIVERSITY (D1, D4, D6)	species and habitats	IEO/ CSIC/ CCAA	
	BIO17: Protocol for action in response to turtle nesting on the Spanish coast and possible adoption of protection measures on optimal beaches for incubation	DGSCM/ CCAA/ Local entities	LEBA / ESAL
	BIO18: Modification of Royal Decree 347/2011, of 11 March, regulating maritime recreational fishing in offshore waters	DGRPA	All
	BIO19: Updating of the Electronic Fishing Log to systemise the gathering of data on by-catch	DGOP	All
	BIO20: Improvement of the monitoring of artisanal fisheries (VMS type)	CARM / Regional. Government of Asturias	LEBA/NOR
	BIO29 Coordination of the protection and conservation measures of marine bird nesting areas	Government of the Canary Islands	CAN
	BIO31 Actions related to the reduction of the risks of collision on large vessels	DGMM / DGSCM	All
	BIO34: Sea-floor mapping and data processing programme: Continuation of the ESPACE Project	DGRPA / IEO	NOR/ SUD / ESAL / LEBA
	BIO 36. Guidelines on the acceptability of sand replenishment on beaches	DGSCM	All
	BIO41: Exploration of alternative methods of low impact for capturing crustaceans on the seabed	DGRPA	All
	BIO42: Establishment of bottom trawling-free zones / increase of exclusion zones in shelf areas, based on the results of the ESPACE project (measure related to BIO34)	DGRPA	NOR/ SUD/ ESAL/ LEBA
	BIO46: Elaboration of guidelines on artificial reefs	DGSCM	All
	BIO47: Promote a quality mark for recreational whale-watching activities (including tourism fishing)	DGSCM	All
BIO48: MISTIC SEAS Project: "Macaronesian islands standard indicators and	DGSCM /FBIO /	CAN	



THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
BIODIVERSITY (D1, D4, D6)	criteria: reaching common grounds on monitoring marine biodiversity in Macaronesia”	IEO	
	BIO49: ECAPRHA Project: Applying an ecosystem approach to (sub) regional habitat assessments (EcApRHA): addressing gaps in biodiversity indicator development for the OSPAR Region from data to ecosystem assessment	IEO	NOR/ SUD
MARINE PROTECTED AREAS	EMP1: RAMPE (MPA Network of Spain) Master Plan	DGSCM	All
	EMP2: Preparation and implementation of the management plans of the Natura Network SCIs proposed by INDEMARES which competence belong to the central government	DGSCM / FBIO	All
	EMP3: Preparation and implementation of the management plans of the SPAs which competence belong to the central government	DGSCM	All
	EMP4: Review of the management plans of the Macaronesian SCAs and the El Cachucho SCA	DGSCM	NOR, CAN
	EMP9: Analysis of the potential creation of and support to the implementation of a "Natura 2000 Network" quality mark to favour the commercialisation of products and services which are compatible with the management objectives of the Natura Network	DGSCM/ DGOP/ DGCEAMN / FBIO	All
	EMP10: Management and monitoring of Marine Reserves	DGRPA	ESAL, LEBA, CAN
	EMP11: Awareness-raising / Information in Marine Reserves	DGRPA	ESAL, LEBA, CAN
	EMP12: Preparation of studies for the designation of future MPAs	DGSCM	All
	EMP13: Declaration of new MPAs (based on that identified in measure EMP12)	DGSCM	All
	EMP15: Surveillance plan of <i>Posidonia oceanica</i> in the Balearic Islands	CAIB	LEBA
	EMP16: Expansion of the Maritime-Terrestrial National Park of the Cabrera Archipelago	CAIB	LEBA
EMP17: Preparation and implementation of instruments for the management of marine protected areas (different from those mentioned in EMP2, EMP3 and	DGSCM/CCAA	Undefined	



THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
	EMP4)		
NON-INDIGENOUS AND INVASIVE SPECIES (D2)	EAI1: Improvement of knowledge on invasive species and other issues	MINECO / CSIC / IEO / FBIO / CCAA / SOCIB	All
	EAI2: Systems of alert, early detection and rapid eradication of exotic invasive species	DGSCM / CCAA / Port authorities	All
	EAI3: Mobile application for alert and early detection of non-indigenous and invasive species in National Parks	OAPN / CCAA	NOR, LEBA
COMMERCIALY EXPLOITED SPECIES (D3)	EC1: Permanent cessations based on the fleet action plan	SGP/CCAA	All
	EC2: Temporary cessations of fishing activity (in accordance with Art. 33 of the European Maritime and Fisheries Fund (EMFF) Regulations)	SGP/CCAA	All
	EC4: Actions aimed at fulfilling the discards policy	SGP/CCAA	All
	EC5: Promotion of collaboration between scientists and the fishery sector	FBIO / CCAA / SGP	All
	EC6: Actions related to the maintenance of the National Basic Data Programme (Article 77)	SGP / IEO /CCAA	All
	EC7: Reinforcement of control work (article 76)	SGP/CCAA	All
	EC8: Reduction of red coral fishery quotas per person and year (RD 629/2013)	DGRPA/CCAA	SUD, ESAL, LEBA
	EC9: Management plan for the longline fleet in the Mediterranean	DGRPA	ESAL, LEBA
	EC10: Promote the fish and seafood management and co-management plans in the Mediterranean (Regional Government of Catalonia)	Regional Government of Catalonia	LEBA
EUTROPHICATION, CONTAMINANTS AND	CONT 1: Reinforcement of the "Plan Ribera"	DGSCM	All
	CONT 2: Strategy for the rescue and recovery of oiled wildlife	DGSCM	All



THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
THEIR EFFECTS, AND CONTAMINANTS IN FISH AND OTHER SEAFOOD (D5, D8, D9)	CONT 4: Guidelines for land-sea direct discharges	DGSCM /CCAA	All
	CONT5: Approval as Royal Decree of the guidelines for the management of dredged material	CIEM	All
	CONT7: Reinforcement of the National Rescue and Pollution Response Plan	DGMM	All
	CONT8: Preparatory work related to the UNEP-MAP Offshore Protocol Action Plan (Protocol for the protection of the Mediterranean Sea against pollution from the exploration and exploitation of the continental platform, the soil and the subsoil)	General State Administration (MINETUR/MAGR AMA/MFOM)	LEBA, ESAL
	CONT12: Preparation of the Interior Maritime Plans	State Ports	All
	CONT13: Guide for the handling of bulk liquids	State Ports	All
	CONT 14: Improvement of knowledge of aspects related to marine pollution	MINECO/CSIC/ IEO	All
ALTERATIONS OF HYDROGRAPHICAL CONDITIONS (D7)	AH1: Promotion of operational oceanography work, in terms of both real time observation and prediction	MINECO/ IEO/ CSIC/ SOCIB/ CAIB	LEBA, ESAL (possibly extendible to other subdivisions)
MARINE LITTER (D10)	Measures for the prevention of marine litter from maritime sources		
	BM1: Implementation of a fixed fee system in regional ports similar to that regulated in RDL 2/2011	CCAA	LEBA
	BM3. Promotion of projects aimed at analysing the possibilities of recycling certain materials, such as expanded polystyrene (EPS) or fishing nets	MAGRAMA / FBIO / CCAA / MINECO / CDTI	All
	BM4: Promotion of innovative projects and initiatives on environmental aspects of technologies and processes in the fishery and aquaculture sectors	MAGRAMA / FBIO / CCAA / MINECO / CDTI	All
	BM6: Improvement of the wastes management in ports	State Ports / Port	All



THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
MARINE LITTER (D10)		Authorities / CCAA	
	BM7: Promotion of projects for better management of the waste on board in fishing vessels or in aquaculture facilities	MAGRAMA / FBIO/ CCAA / CDTI / MINECO	All
	Measures for the prevention of marine litter from land sources		
	BM8: Preparation of regional waste management plans	CCAA	All
	BM9: Revision of regulations which affect the application of the Extended Producer Responsibility	DGCEAMN	All
	BM10. Application of the measures contained in the regulations which transpose Directive 2015/720, amending Directive 94/62/EC with regard to the reduction of the consumption of light plastic bags	DGCEAMN / CCAA	All
	BM11. Study on the quantities of marine litter (including microplastics) from wastewater treatment plants and proposal of specific measures to be incorporated into the river basin management plans (3 rd cycle)	DGSCM	All
	BM12. Ensure the inclusion of explicit references to marine litter in all waste management instruments to be promoted in the future	MAGRAMA / CCAA	All
	BM13: Research into ecological aspects of microplastics. JPI Oceans pilot initiative: BASEMAN, EPHEMARE, PLASTOX projects	MINECO / IEO / Univ.of Coruña / Univ..of Vigo / Univ. of Murcia / Univ. of the Basque Country	All
	BM14: Study on the quantification of sources of microplastics and identification of possible reduction/prevention measures	DGSCM	All
	BM28. Standards for the design of stormwater tanks	DGA	All



THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
MARINE LITTER (D10)	BM29: Plan for Treatment or Removal to Controlled Landfill of paper waste and derivatives and plastics in Melilla (Chafarinas Islands).	OAPN-MAGRAMA	ESAL
	Measures for the removal of marine litter		
	BM5: Promote the installation of waste-collection facilities at fishing docks	MAGRAMA / FBIO / Port Authorities / CCAA / Local Entities	All
	BM17. Development of a framework document for the development of a coherent "fishing for litter " scheme	DGSCM	All
	BM18: Promotion and funding of "fishing for litter " activities	SGP / FBIO / CCAA	All
	BM19. Funding of clean-up activities in rivers, beaches, and shallow waters	FBIO / CCAA / Town Councils / OAPN-MAGRAMA	All
	BM20. Promotion of events coinciding with <i>Cleanup Day</i> initiative, and encouraging participation	DGSCM	All
	BM21: Study of marine litter hotspots (areas of greatest accumulation or particularly vulnerable areas in the presence of waste)	DGSCM / IEO	All
	BM22: Clean-up campaigns aimed at identified marine litter accumulation sites	DGSCM / FBIO	All
	BM26. Creation and maintenance of a national database of items collected in "fishing for litter" activities.	DGSCM / FBIO	All
	Awareness-raising and information measures on the problem of marine litter		
	BIO 24. Preparation of rise awareness/communication materials, with the possibility of including a campaign through media	DGSCM / FBIO	All



THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
MARINE LITTER (D10)	BM25. Creation of a technical group on marine litter as a coordination/discussion forum around the problem of marine litter and its possible solutions	DGSCM	All
	BM27. Creation of the figure of "Beach Guardians", aimed at associations, environmental organisations, fishermen, fishery associations and other groups, and a network of "guardian" organisations for the environmental conservation of rivers and beaches and raise awareness about this problem at local, regional and national level	MAGRAMA / FBIO	All
UNDERWATER NOISE (D11)	RS1: Regulation of criteria for projects generating underwater noise and for the preparation of EIAs of those projects.	DGSCM	All
HORIZONTAL MEASURES	H1: Regulation of criteria of compatibility with marine strategies, in accordance with article 3.3 of law 41/2010	DGSCM	All
	H2 Development of a strategy for the visibility and dissemination of marine strategies	DGSCM	All
	H4: Education programme in schools	DGSCM / FBIO	All
	H5: ACTIONMED Project: Action Plans for Integrated Regional Monitoring Programmes, Coordinated Programmes of Measures and Addressing Data and Knowledge Gaps in Mediterranean Sea	IEO	LEBA, ESAL
	H6: Mar Menor "ITI"	CARM	LEBA
	H10: Training programmes for fishermen, on-board observers, personnel of stranding networks, and training of policy-makers and agents of the authority	DGSCM / SGP/ IEO/ CCAA / FBIO	All
	H11: Rise awareness programmes targeted to users of beaches, nautical-recreational tourism companies, fishermen and civil society in general	DGSCM / CCAA / FBIO	All
	H12: Preparation and implementation of a curriculum related to respect for and protection of cetaceans, marine turtles and birds, as well as marine litter, in official marine-related education in the recreational and fishing sectors	DGMM / DGOP	All



THEME	NEW MEASURE	COMPETENT AUTHORITY	MARINE SUBDIVISION(S) IN WHICH THE MEASURE APPLIES
HORIZONTAL MEASURES	H13: Promotion of innovative projects for the improvement of the sustainability of aquaculture facilities	FBIO	All
	H14: Promotion of entrepreneurship: prevention (business innovation) and management (support to the creation of new companies)	FBIO / CDTI / MINECO	All

ACRONYMS MARINE SUBDIVISIONS: NOR- North Atlantic MD; SUD- South Atlantic MD; ESAL- Estrecho and Alborán MD; LEBA- Levante-balearic MD; CAN- Canary MD.

ACRONYMS COMPETENT AUTHORITIES: CCAA- Regional Governments; CAIB- Regional Government of Balearic Islands; CARM- Region of Murcia; CDTI- Centre for the Development of Industrial Technology; CEDEX- Centre for Studies and Experimentation of Public Works; CIEM- Interministerial Commission for Marine Strategies; CSIC- Spanish National Research Council; DGA- Directorate General of Water; DGCEAMN- Directorate General of Quality, Environmental Assessment and Natural Environment; DGMM- Directorate General of Merchant Marine; DGOP- Directorate General of Fisheries Management; DGRPA- Directorate General for the Protection of Fisheries and Aquaculture Resources; DGSCM- Directorate General for the Sustainability of the Coast and the Sea; FBIO- Biodiversity Foundation; IEO- Spanish Institute of Oceanography; MAGRAMA- Ministry of Agriculture, Food and Environment; MFOM- Ministry of Public Works; MINECO- Ministry of Economy and Competitiveness; MINETUR- Ministry of Industry, Energy and Tourism; OAPN- National Parks Autonomous Agency; PdE- State Ports; SGP- General Secretariat of Fisheries; SOCIB- Balearic Islands Coastal Ocean Observing and Forecasting System.