

STRATEGIES FOR COASTAL PROTECTION FOR THE PROVINCES OF CÁDIZ, MÁLAGA AND ALMERÍA CONSIDERING THE EFFECTS OF CLIMATE CHANGE

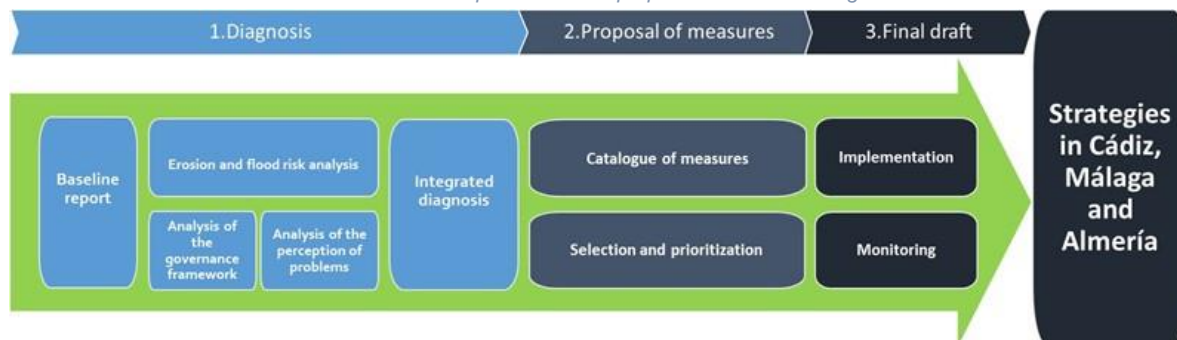
Selection and prioritization of measures Implementation and monitoring of the Strategies

The development of Coastal Protection Strategies considering the climate change effects for the provinces of Cádiz, Málaga and Almería is an initiative financed by the EC's Structural Reform Support Programme upon request of the Spanish Ministry for the Ecological Transition and the Demographic Challenge (MITECO), Directorate General for the Coast and the Sea (DGCS).

The objective of the Strategies is to guide decision making on the actions carried out by the DGCM in the provinces of Cádiz, Málaga and Almería within the framework of its competencies for coastal erosion risk management, seeking synergies with flood risk management and incorporating the adaptation to climate change. The Strategies cover the current management cycle, 2020-2045.

The preparation of the Strategies began in March 2019 and, along 30 months of work, has been organized into the following 3 successive phases: 1) Diagnosis, to improve the understanding of coastal protection issues, as well as to understand the perception of coastal problems by relevant actors and to analyse the governance framework; 2) Proposal of measures, with the objective of identifying the actions to be carried out by the DGCM, within the framework of its competences; and 3) Final reporting, whose objective is to rank and guide decision-making steps regarding the implementation of these actions.

Phases and components of the preparation of the Strategies



Once the diagnosis phase was completed and after the elaboration of a Catalogue, which includes all possible measures to be considered in the Strategies, a methodology was developed, based on the results of the diagnosis, for the Selection and Prioritization in order to, firstly, prioritize the management Units according to the consideration of the need of intervention on each of them as: short term priority (2020-2030),

- 1) midterm priority (2030-2045),
- 2) long term priority (2045-2100) or
- 3) secondary priority

To establish the need for an intervention in each Management Unit, the combined erosion and flood risk level, RE+F is used in the most pessimistic scenarios for each horizon year (SA: 2020; CP:2030; MP: 2045 and LP: 2100).



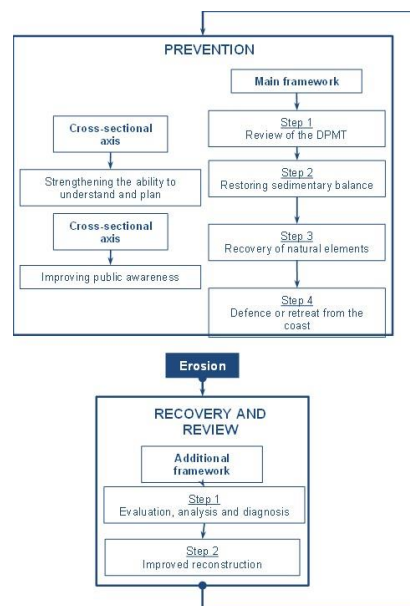
The document further addresses the **selection of the most suitable measures** from the Catalogue to compose the intervention at each Management Unit level **at the local level** and, establish recommendations related to those addressing the **regional level**.

The **selection of measures** is based on the following **logical arrangement in steps (route)** and **transversal axes** of the measures contributing to the strategic objectives.

The **main itinerary** for the prevention of coastal erosion risk, including:

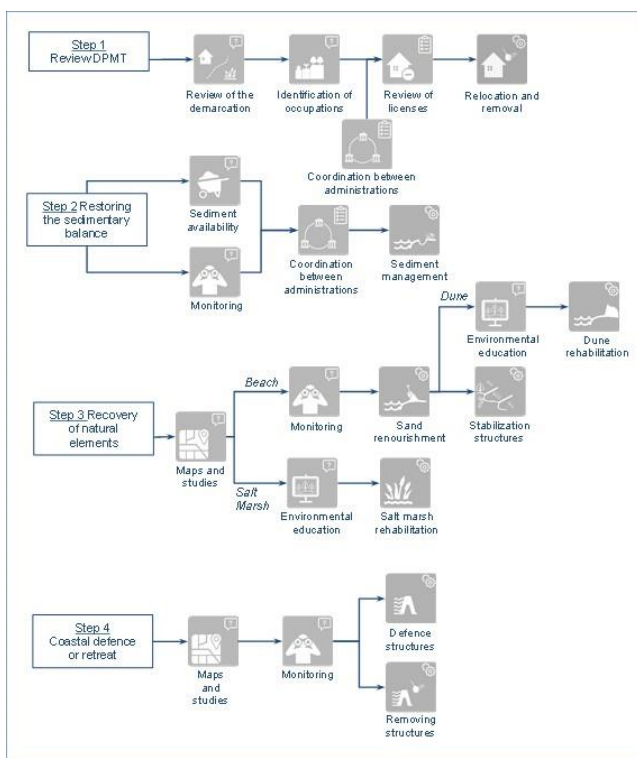
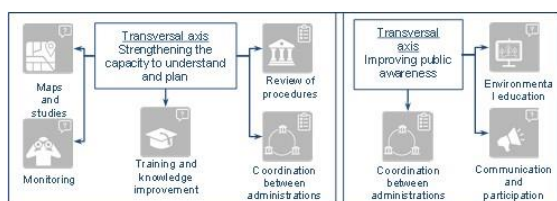
Four consecutive steps: 1) Review of Maritime-Terrestrial Public Domain (DPMT); 2) Restoration of sedimentary balance; 3) Restoration of the natural elements of the coastal system and 4) Maintenance of the coastal defence lines ('hold the line') or, instead, managed realignment. And two **transversal axes:** 1) Strengthening the capacity to understand and plan and 2) enhancement of public awareness.

An additional itinerary for recovery and review in the post-event phase.

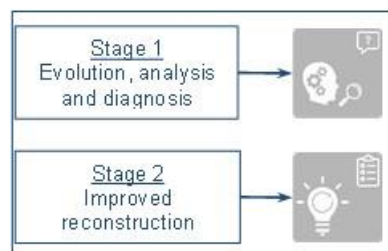


The measures of each of these four steps are also developed consecutively, ordered in consonance with the proposed coastal erosion risk management cycle, according to which the measures are addressed with the sequential objectives to understand, to plan and, finally, to act.

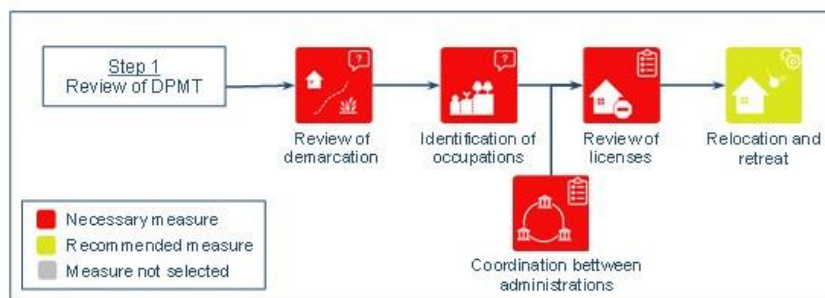
Unlike the measures of the main route, the measures included in the **two transversal axes do not have a sequential character**, and therefore they can be developed in parallel to the measures of the main route and also in parallel between themselves.



Finally, an **additional itinerary for recovery and review in the post-event phase** is proposed and consists of the two recovery and review measures of the Catalogue ordered in the following two sequential stages, relating to the objectives to understand and to plan, respectively: 1) Evaluation, analysis and diagnosis and 2) Improved reconstruction



The Selection and Prioritization of measures for each Management Unit takes into account 4 criteria: 1) short term risk results; 2) baseline information on the natural, physical-anthropic and socio-economic environment;



3) morphodynamic model of operation and 4) perception analysis of coastal problems – as well as the **priority levels**.

The recommendations resulting from the Selection and Prioritisation on the type of measures most adequate for each Management Unit, or those of regional scale, are not to be considered as “obligations” in terms of implementation as they are generic recommendations based on a diagnosis implemented at regional scale and baseline data from 2020 or earlier.

Thus, the Strategies consider an **open and adaptive plan for the implementation of the measures proposed**, based on an annual plan, which aims to establish the actions of the current year throughout the management cycle, depending on the available resources and on the results of the monitoring of the implementation itself, **according to the Monitoring Plan** included.

The annual implementation plans, must address the financing mechanisms, the detailed design of the necessary works (e.g. civil engineering works) and their corresponding execution, as well as the administrative procedures required, among other issues. The risks associated to the implementation of the Strategies should also be analysed on an annual basis.

In addition to the annual planning, the proposed adaptive implementation contemplates the **comprehensive review of the Strategies at the end of the short-term period** (year 2030) and the preparation of **new Strategies at the end of the medium-term period**, which coincides with the end of the current management cycle (year 2045).

For further information: <https://www.miteco.gob.es/es/costas/temas/proteccion-costa/estrategias-proteccion-costa/>
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