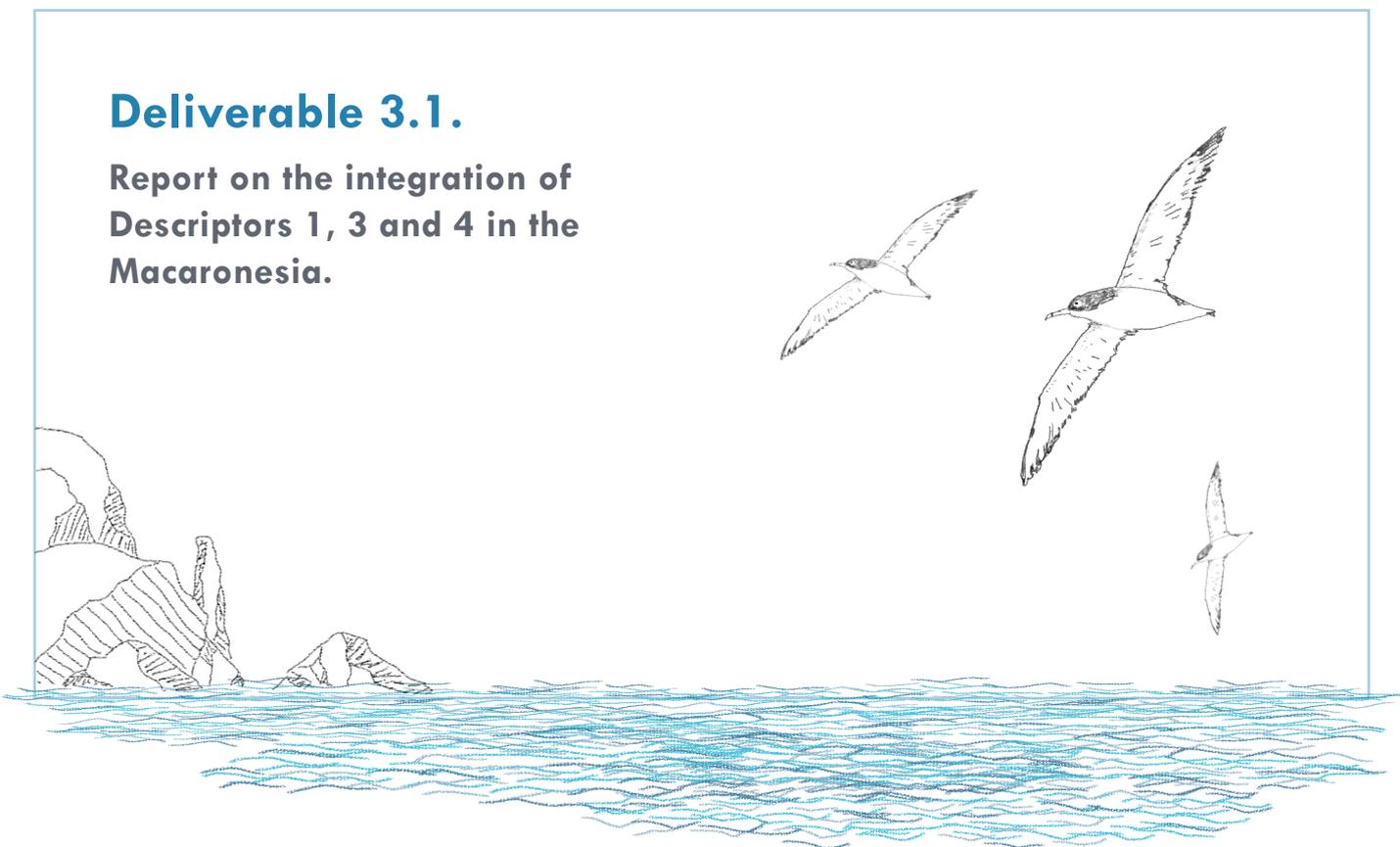# MISTIC SEAS III
MACARONESIA

MISTIC SEAS III - Developing a coordinated approach for assessing Descriptor 4 via its linkages with D1 and other relevant descriptors in the Macaronesian sub-region

Deliverable 3.1.

Report on the integration of Descriptors 1, 3 and 4 in the Macaronesia.

Executive Summary:

Biodiversity is a central concept within the MSFD, with a specific descriptor (D1) stating that biodiversity should be maintained (in line with prevailing physiographic, geographic, and climatic conditions). However, biodiversity is also addressed by several other descriptors (D2, D3, D4, D5, and D6). In the past, these descriptors have been treated almost as if they were independent, although it has been recognised that there are linkages among them.

Within the MISTIC SEAS III project, this Deliverable arises from Task 3.1, which reviews the list of indicators, criteria and thresholds that have been proposed under D1 and D3 for the species selected by Spain and Portugal for the Macaronesian region, alongside proposals for D4 derived from WP's1 and 2 of the project.

The overall aim of Workpackage 3, for which this is the first deliverable, is a proposal for how to integrate these diverse sources of information to produce a coherent holistic picture of biodiversity, taking into consideration data gaps and regional specificities. An integrated MSFD biodiversity status assessment requires linking knowledge among descriptors. Descriptor 4 (D4) captures information related to biodiversity, which complements that available from D1 and D3, as well as offering the prospect of including higher level information about ecosystem structure, function and health.

In this deliverable, we firstly review the species selected, indicators, thresholds and assessment carried out for D1, D3 and D4 in the three Macaronesian archipelagos and compare what was done in mainland Spain and Portugal, as well as looking at what has been done in the UK and Ireland. This comparison identifies some common issues with the implementation of the MSFD, and also highlights limitations and gaps in the application of the MSFD to Macaronesia. We propose ways forward taking into consideration the specificities of the region, bearing in mind that all three archipelagos have a very narrow shelf, so it is not possible to replicate monitoring programmes for mainland coasts. Furthermore, many megafauna species which are present spend only a part of their life cycle in Macaronesian archipelagos and indicators of their status in the archipelagos are thus uninformative about wider population status - breeding seabirds, represent the main exception. Lack of time series for many functional groups represent another limitation, one not easily solved because resources available for carrying out monitoring are relatively limited. One of the key issues in Macaronesia is the lack of monitoring programmes, specifically implemented for the development of food web indicators.

We propose ways forward to fill data gaps, e.g. developing indicators that can be monitored with limited resources and make use of ecosystem models that have been developed and are in development.