

Marine protected areas in the Atlantic Arc: “paper reserves” or effective management tools?

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Summary

In the Atlantic Arc there are 550 inshore and offshore Marine Protected Areas established with a wide diversity of objectives. Only 153 of them have management plans and 64 undergo actual management on a daily basis, generally lacking standardized indicators of their performance. In order to address this issue we developed an alternative approach based on the expert knowledge and perception of managers operating MPAs. To collect this information we used questionnaires focused on: compliance with objectives, governance, control and enforcement, and monitoring and assessment.

The managers' showed that quantitative objectives are not generally established in management plans, and only qualitative ones are set up. In turn, the compliance of the latter, even if high (84%), is influenced by the absence of surveillance and the lack or bad management of human and economic resources. This also affects MPA monitoring negatively. There is a general perception (80%) of a lack of socio-economic impact and a majority of the managers (45%) foresee eco-tourism as a main target for planning new activities.

Introduction

The use of Marine Protected Areas (MPAs) has been gaining importance as an efficient way to manage fisheries, protect marine ecosystems and reverse the degradation of aquatic habitats (FAO, 2011; Lausche, 2011). In the Atlantic Arc, given the number of countries involved and changes in law at the time of MPA designation and management, a wide variety of MPA models and management approaches exist. *A priori*, all these management strategies should be oriented towards the effective achievement of the objectives of each MPA.

In the Atlantic Arc there are 550 inshore and offshore MPAs based on high diversity of objectives. Only 153 of them have a management plan --the basic tool required for an effective management. Amongst these, only 64 are actually managed, i.e. they have the staff and resources to operate the plan efficiently on a daily basis.

In general, MPAs lack standardized indicators of their performance. In order to address this issue, we have developed an alternative approach based on the expert knowledge and perceptions of managers operating MPAs.

Materials and methods

In order to collect the expert knowledge and perceptions of managers operating MPAs, we used questionnaires including 57 questions focused on: compliance with MPA objectives; compliance with management plan objectives; governance; budget; staff; control and enforcement; incomes generated by new activities after MPA implementation; and socio-economic impact. These questionnaires were completed from July 2011 to August 2012. Precise criteria were established to fill in the questionnaire, in order to minimise errors due to different interpretations. The managers surveyed worked in MPAs of mainland Portugal, Spanish Atlantic coast (including Canary Islands), French Atlantic coast (from

Cherbourg, in the Channel, Basse-Normandie region, to the Spanish border) and England. A total of 56 fulfilled questionnaires were obtained.

A descriptive analysis was performed on the dataset generated from the completed questionnaires. Correspondence Analysis (CA) was used to describe the relationship among variables.

Results and discussion

According to the managers' information, MPA designations and management plans establish quantitative objectives in 27% (e.g. a percentage of increase in the target species), but on contrast, in 98% of them establish qualitative ones (e.g. enhancement of fish stocks). Only 15 of the 56 MPAs studied (27%) have both quantitative and qualitative objectives listed in their management plans, and half of them lack quantitative ones. Qualitative objectives, on the other hand, are successfully achieved in the majority of 56 MPAs (85%). Additional results from this study reveal that 70% of the managers consider that the budget is not enough to cover all actions of the management plan and that 67% think more staff is needed to pursue these actions. Correspondence analyses of the questionnaire dataset showed that the lack of human and economic resources, along with the lack of surveillance, negatively influence the compliance with the objectives of the management plan. 20% of the studied MPAs do not have surveillance.

On the other hand, the managers' revealed that an ecological or biological monitoring of MPAs is regularly done, focused on species in 64% of them and on habitats in 46%, while monitoring of socio-economical activities is only carried out in 28% of MPAs. The relationship between variables showed that the execution of monitoring programs, whatever their type, is influenced by the good management of economical resources, which in turn affects the degree of compliance with the objectives.

There is a general perception (80%) of a lack of socio-economic impact and a majority of the managers (45%) foresee eco-tourism as a main target for planning new activities.

References

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