

Article

Environmental Contract: A Collaborative Tool to Improve the Multilevel Governance of European MPAs

Serena Muccitelli *, Carolina Pozzi, Romina D’Ascanio  and Stefano Magaudo

Department of Architecture, Roma Tre University, 00153 Rome, Italy; carolina.pozzi@uniroma3.it (C.P.); romina.dascanio@uniroma3.it (R.D.)

* Correspondence: serena.muccitelli@uniroma3.it

Abstract: The main challenges faced by Europe for 2030 concern the achievement of 30% of protected marine surfaces, the improvement of connections between marine protected areas (MPAs), and especially, their more efficient management. The governance of MPAs is therefore called upon to strengthen its objectives, becoming part of a wider network of actors in dialogue with economic counterparts, addressing manifold interference and impacts, and ultimately strengthening biodiversity protection. This work explores the local dimension of MPAs’ governance through the opportunities offered by the Interreg MED TUNE UP project “Promoting multilevel governance for tuning up biodiversity protection in marine areas” (2019–2022), which commits to enhancing the effectiveness of MPAs in the Mediterranean, through the implementation of Environmental Contracts. Based on this experience, a two-fold analysis of multiple case studies has been developed, considering both the local and the European scale of regulations and governance chains. The results show that the MPA Contract is an effective tool to improve the governance of European MPAs and thus tackle the local responses to EU and national protection policies through a process of vertical and horizontal subsidiarity. The need for an interinstitutional dialogue to address the establishment of effective environmental governance and the enforcement of regulations affecting marine areas has been highlighted.

Keywords: MPA Contract; marine environment; collaborative governance; international cooperation; EU advocacy



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1. Introduction

The Mediterranean Basin is acknowledged as a major biodiversity hotspot in the world, although it is seriously threatened by the pressure of growing population, migration flows, and global trade [1]. Biodiversity loss itself is costly for society, and each year, certain European countries lose 3% of their GDP due to the loss of marine biodiversity [2].

The European Union (EU) is committed to promoting the sustainable use of the oceans and protecting marine ecosystems [3]. The union as a body and its Member States individually are parties to several international agreements concerning the protection of marine habitats and species, each setting specific targets to be achieved within a 10- or 20-year timeframe [4].

By the Treaty on the Functioning of the European Union (TFEU), the EU has exclusive competence over the conservation of marine biological resources through its common fisheries policy (CFP), proposing regulations for managing fisheries (allowable catches, fishing methods, and controls, funding), while the commission and the Member States share responsibility for environmental policies [5,6].

The work presented here concentrates on a fraction of Mediterranean seas represented by marine protected areas (MPAs), which are the most emblematic marine conservation measure, being zones of sea and coast placed under protection because of their ecological importance [7,8].

Regarding the EU policy on MPAs, the most relevant European regulations are set out in the Marine Strategy Framework Directive (MSFD) and the Birds and Habitats Directives (BHDs) [9–12]. The latter aims to protect threatened species and habitats across the EU and create the Natura 2000 network of protected areas, a category under which it is possible to find some MPAs. The MSFD enhances this recommendation by requiring Member States to create coherent networks of such areas and to include them in their strategies for spatial protection measures.

This work aims to understand and analyze governance phenomena and practices in South European MPAs based on the experience of the Interreg MED TUNE UP project “Promoting multilevel governance for tuning up biodiversity protection in marine areas” (2019–2022), which, by working on 10 MPAs, provided the evidence of the multifaceted situation in terms of MPA definition, designation, consequent conservation measures, and management schemes. Indeed, by reflecting on the important constraints arising from the EU legal framework perspective, we question the possible root cause of the challenges faced by Member States in applying the EU framework for protecting the marine environment [13–16]. We concentrate on the local implementation of multilevel governance (MLG) to test and finally highlight the effectiveness of the Environmental Contract collaborative tool to improve the governance of European MPAs and thus tackle the local responses to EU protection.

After defining the reference framework of European MPAs in terms of nature protection and regulations (Section 2.1) and of the Environmental Contract tool (Section 2.2), this contribution is organized as follows:

Section 3 shows the case studies’ selection criteria (Section 3.1), data collection (Section 3.2), and data comparison (Section 3.3).

Section 4 aims to communicate the research’s results. The comparison of the case studies is explained in terms of the definition of the areas considered to be included in the Environmental Contract (Section 4.1), the participative process developed with specific reference to the stakeholders’ role (Section 4.2), and the governance solutions that emerged during the process (Section 4.3).

Section 5, Discussion, reports the crucial issues of MPAs management within the EU framework, highlights those areas where the MPA Contract has been proven effective, and finally calls for the contribution of higher policy levels in order to fully apply the potential of MLG in MPAs through the Environmental Contract tool.

2. General Overview

2.1. Mediterranean MPAs in the European Protection Framework

MPAs are zones of sea and coast places under protection because of their ecological importance. In order to highlight the multifaceted situation of European MPAs in terms of definition, designation, consequent conservation measures, and management schemes, we provided Table 1, which shows that MPAs overlap classifications according to the chosen criteria.

In column 1, the physical features used for their classification are reported: marine, terrestrial, subtidal, and intertidal habitats; column 2 shows that MPAs can be established under various designations, acting at different levels (subnational, national, regional, and international) and requiring different conservation measures. Finally, column 3 reports the wide range of area-based management tools used for MPAs’ regulation: each tool has its objectives, design, legal provisions, operational capacities, and protection levels that may or may not match the most spread management schemes identified by UNEP-WCMC. These considerations help to understand that to overcome legal fragmentation and administrative competences MPAs should be addressed with an ecosystem-based approach to conservation and with a comprehensive and integrated methodology [17].

Table 1. Classification of MPAs according to physical features, designation, and management schemes (elaboration of the authors).

Type of MPA According to Physical Features [18]	Type of Designation in the Mediterranean [19]	Schemes of MPA Management [18]
- Entirely marine, containing subtidal and intertidal but no terrestrial habitat; - Containing terrestrial, intertidal, and subtidal components, varying in size between two extremes: (1) large portion of land and marine part often overlooked; (2) small portion of land (beaches or small islands) and protected area often managed as a marine area only; - Containing terrestrial and intertidal ecosystems only such as mangroves or marshes.	- MPA with a national statute legally designated by a Member State; - Marine Natura 2000 sites: Sites of Community Importance (SCIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs), identified under Habitats and Birds EU Directives; - Fisheries Restricted Areas (FRAs), established by the General Fisheries Commission for the Mediterranean (GFCM); - Specially Protected Areas of Mediterranean Importance (SPAMI), adopted by the Barcelona Convention.	- No-take areas: all forms of exploitation are prohibited, and human activities are severely limited; - Multiple-use areas: different levels of protection can take effect (no-take zone is buffered from edge effects by one or more surrounding zones with lower protection); - Community-managed areas: local communities are empowered to operate partially or completely independently from the governmental jurisdictions to manage resources lowering conflicts and soliciting the support of diverse groups that rely on MPAs' resources, such as subsistence and commercial fishers, scientists, recreation, tourism businesses, youths, and others; - Seasonal and temporary management areas: where activities, most critically fishing, are restricted seasonally or temporarily.

According to the European Court of Auditors, the EU framework requiring Member States to protect the marine environment has been proven to provide limited protection in practice, being therefore unsupportive in clarifying the different regulative framework just reported [20]. More specifically, if Natura 2000 is the protection tool provided by the EU for MPAs, it must be noted that MPAs do not qualify for EU designation under the Natura 2000 network unless they refer to habitats or species listed in the BHDs. Then, either if they are designated as Natura 2000, MPAs often overlap each other and with national protected areas, as highlighted in Table 1 and Figure 1. Specifically concerning management, EU legislation does not require MPAs to be supplied with management plans, the specific tool defining the actions needed for protection, and the authorities in charge of doing so [20].

In 2018, the EEA reported that the EU had met the spatial coverage target of designating a minimum of 10% of its waters as MPAs by 2020 (Aichi Target 11 under the Convention on Biological Diversity) since MPAs covered 12.4% of the EU marine area. However, this percentage is not reflected in well-managed MPAs: less than 1% of European MPAs could be considered marine reserves with full protection (e.g., through fishing bans), only 1.8% was covered by MPA management plans and those protected areas are skewed toward coastal waters and do not sufficiently cover the deep sea, which means that large parts of sea waters and their biodiversity features, especially deeper sea habitats, are not adequately represented in the MPA network [21–23]. The next target set for 2030 by the new EU Biodiversity Strategy issued in May 2020 is to protect at least 30% of the EU sea area by 2030 and to strictly protect at least 10% [24].

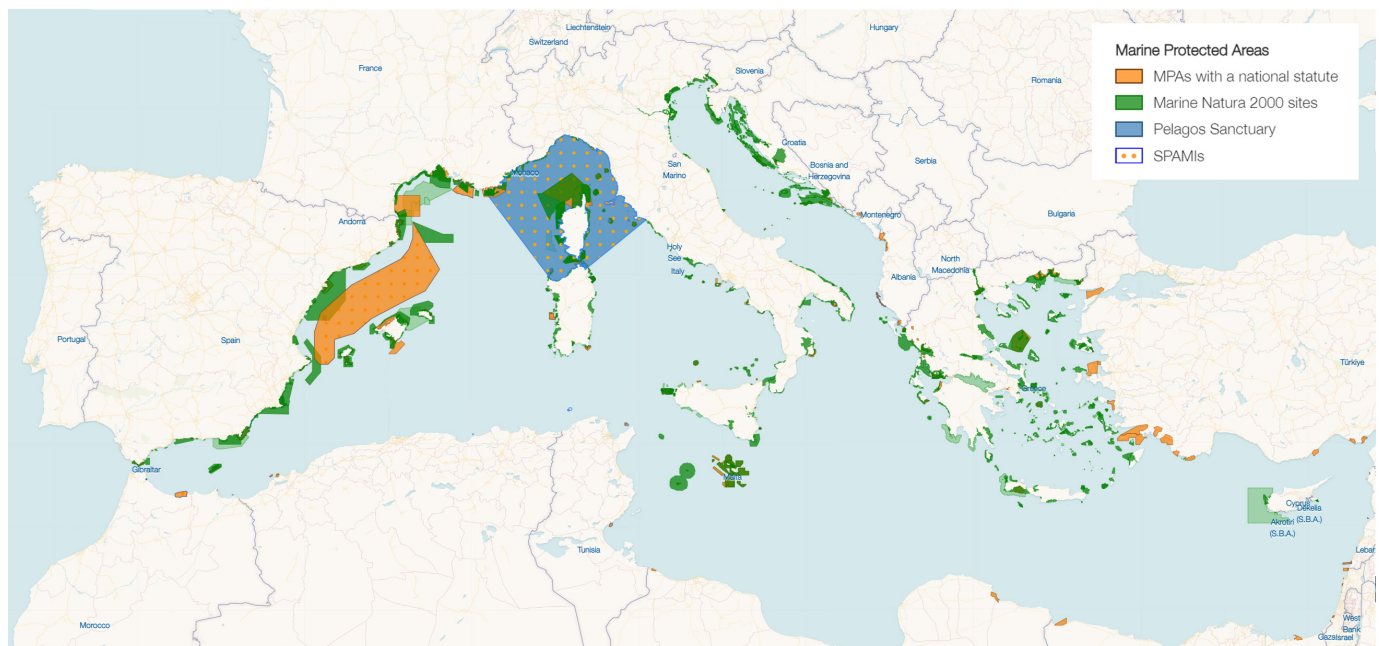


Figure 1. Maps of the different levels of marine protection at the Mediterranean level: MPAs of National Statute, Marine Natura2000 sites, Pelagos sanctuary and SPAMIs (source: MAPAMED, 2019 the database of MARine Protected Areas in the MEDiterranean by SPA/RAC and MedPAN. Available online: <https://www.mapamed.org> (accessed on 5 February 2023).

The WWF report provides conclusive remarks on MPA status and trends, stating that the Natura 2000 network has undoubtedly been contributing to the connectivity of MPAs in the EU, but still, the quality of management in European MPAs is rated low, given the lack of and/or the vagueness of existing management plans, the scarcity of fully protected areas, the lack of adequate funding and resources that in turn undermine efforts for environmental monitoring, and the lack of systematic and transparent reporting. In confirmation of a multifaceted framework beyond management tout court, a survey addressed to MPA managers identified current challenges for Mediterranean MPAs in a complicated regulatory legal framework, non-inclusive governance, and insufficient regulation and surveillance mechanisms [22].

The shared conclusion is that the MPA network is still not representative of the full range of biodiversity in the areas covered and that the management of MPAs needs to be strengthened [20].

Specifically related to management and governance concerns, an important contribution aiming at moving the focus toward the bottom levels of EU MLG came from the European Committee of the Regions (COR). The opinion “Local and regional authorities protecting the marine environment” (issued in May 2021) is grounded on the belief that the local and regional dimensions of the MSFD’s implementation constitute an unexplored dimension that could accelerate the more ambitious action to tackle predominant pressures. The COR identifies a gap in the regulative and implementation chain both in the top-down and bottom-up flow [25]. In one way, the Committee recognizes the efforts of municipalities and regions in implementing measures to improve the marine environment and their contribution to the planning and/or granting of authorizations for activities impacting—directly or indirectly—the quality of water, seas, and marine biodiversity. On the other side, the Committee highlights the need to provide local and subnational authorities with knowledge-sharing support, technical assistance, and resources that can unleash their untapped potential for more efficient implementation of the MSFD [25].

2.2. The Environmental Contract as a Tool to Enhance MPA Governance

This work explores the local dimension of MPAs' governance through the opportunities offered by the Interreg MED TUNE UP project, which was committed to testing Environmental Contracts to enhance the effectiveness of MPAs in the Mediterranean. Considering MPAs as tools for the implementation of EU environmental directives and targets, the article aims to frame not only policy transpositions and environmental regulations at the Member States' level but also their practical implementation under the very responsibility of the local institutional level. Based on an in-depth comparison of selected case studies, which, while implementing the Environmental Contract, tackled the renewal of their governance systems, the authors try to respond to the need to study the bottom-up and top-down implementation flows of MLG. More precisely, the authors aim to address both the local context specificity and the constellation of actors and policy objectives and the complex interactions between all of them in order to detect the causes of failed, poor, or delayed policy implementation [26–28].

The Environmental Contract allows us to go deep into both approaches because of its characteristics shaping a collaborative governance model more than a programmatic tool: it is designed as a continuous multi-sectoral and multi-scalar negotiation process between public and private stakeholders, and it works as an organizational model to build pioneering partnerships capable of lasting over time. By doing so, it responds to the EU environmental directives promoting a participative approach to decision making as a prerequisite for defining integrated, sustainable, and viable strategies [29]. Specifically, the MSFD (like other directives such as the Water Framework Directive and Habitat Directive) requires Member States to foster an integrated approach for managing MPAs and their surrounding wetlands through collaborative governance processes, combining multi-objective, multilevel, and multi-stakeholder decision making [30]. Coherently with this framework, the COR encourages municipalities and regions to launch their initiatives and cooperate among themselves, as well as with adjoining regions, to identify and design measures to address environmental challenges [25].

Three key characteristics of the Environmental Contract as a collaborative and voluntary governance process are (i) the construction, through the shared scenarios, of an integrated vision and a common framework for territorial policies; (ii) the setting of a system of shared rules, clearly established within the formal agreement characterized by voluntariness and flexibility; (iii) the definition of a coherent Action Plan [31]. Therefore, the Environmental Contract finally demonstrates the embedding of the European principles of democratic participation in decision making that constitutes the backbone of the Lisbon Treaty, namely the regional and local dimensions that the EU intends to put in place through vertical and horizontal subsidiarity.

Environmental Contracts were originally developed in France in the early 1980s (*Contrat de Rivière*) to control rivers' pollution and flooding, manage hydraulic structures and raise stakeholder awareness; they have been then employed across the country and adapted to bays, lakes, and wetlands (*Contrat de Milieu*) [32–36]. Their implementation methodology was later replicated in neighboring countries, including Belgium (Wallonia in 1988) and Italy (Lombardy Region and then the Piedmont Region in the early 2000s) [37–40].

In recent years, an effort to further apply the Environmental Contract methodology outside France and Italy was carried out in the framework of European cooperation projects [41]. Among others, the Interreg MED WETNET and the Interreg Italy–Croatia CREW projects tested the Environmental Contract as a governance tool for the sustainable management of protected wetlands in the European Mediterranean and Adriatic Regions (Wetland Contract), while the Interreg MED COASTING and COASTING PLUS projects aimed at transferring the methodology for coastal areas' governance enhancing its effectiveness for tourism sustainability.

In the same perspective, the Interreg MED TUNE UP project transferred the tool to MPAs (hereafter MPA Contract when referred to the application to MPAs), exploiting its

flexibility to (i) promote a stronger and proactive involvement and coordination of key stakeholders in MPAs management; (ii) promote cooperation among key stakeholders and decision-makers involved in MPAs management; (iii) limit raising conflicts between biodiversity protection and economic issues; (iv) mainstream ecosystem-based approaches into ordinary duties and functions; (v) jointly identify and share a common long-term strategy; (vi) promote environmental education and awareness-raising activities; (vii) foster cooperation and networking between MPAs.

3. Materials and Methods

Considering the field of investigation of this work, the method of multiple case studies research was considered the most suitable for deepening the knowledge of processes, rather than individual products, and for understanding the context as a whole, rather than its specific variables [42]. The case studies' analysis is based on a qualitative approach and takes as a reference the method applied for sociological research by Robert K. Yin (1994), according to which it is necessary to use different methods of data collection: documents (project deliverable), interviews, direct and participant observation, concrete elements [43].

Taking advantage of the research framework provided by the Interreg MED TUNE UP project, the research methodology allowed us to evaluate the institutional processes triggered by the Environmental Contract tool, such as the capacity-building dynamics investing the institutions and actors involved, the thickening of governance networks, the level of integration of the processes. In this context, the case study is used as an evaluation tool, coherently with the increasing importance attributed by scholars to qualitative data collection techniques in the evaluation of development policies [44]. Indeed, the case study is used as a "work unit", leading to the progressive composition of a framework within which it is possible to recognize and relate subjects, objectives, resources, issues at stake, and context factors.

3.1. Criteria for the Selection of the Case Studies

Out of the ten MPAs targeted by the project (Figure 2) in seven EU and IPA countries (IPA "Instrument for Pre-Accession Assistance" concerns candidate countries or potential candidate countries), this research selects 6 case studies (Table 2). Those are all Natura 2000 sites and exemplify different regulatory frameworks concerning the acknowledgment of EU regulations and the development of the MPA Contract tool. To operate the selection, the authors excluded the experiences from the two IPA countries (Boka Kotorska Bay-Sopot and Drazin vrt in Montenegro and Karaburun Sazan in Albania) and those that were not relevant enough for this work because targeting mostly wetlands, such as Sečovlje Salina in Slovenia and former saltworks of Camargue in France. The analysis was conducted considering six case studies in three countries, whose processes were developed under the responsibility of six project partners, whose diversity in typology and field of activity contributed to the enrichment of the final outcomes. As reported in Figure 2, the case studies are (i) Thermaikos Gulf in Greece, developed by the Anatoliki Development Agency, (ii) Amvrakikos Gulf in Greece, developed by the Amvrakikos Gulf-Lefkada Management Agency, (iii) Cabo de Gata-Níjar in Spain developed by the Federation of Town and Provinces of Andalucia, (iv) Albufera de Valencia in Spain developed by SEO-Birdlife NGO, (v) Sinis Peninsula-Mal Di Ventre Island in Italy developed by the MedSea Foundation, (vi) Ventotene and Santo Stefano Islands in Italy developed by Roma Tre University.



Figure 2. The Interreg MED TUNE UP project case studies target areas: Thermaikos Gulf, Greece; Cabo De Gata Níjar, Spain; Sinis Peninsula-Mal di Ventre Island, Italy; Karaburun Sazan, Albania; Sečovlje Salina, Slovenia; Albufera de Valencia, Spain; former saltworks of Camargue, France; Boka Kotorska Bay-Sopot and Drazin vrt, Montenegro; Amvrakikos Gulf, Greece; Ventotene and Santo Stefano Islands, Italy.

Table 2. The 6 case studies (elaboration of the authors adapted from the Interreg MED TUNE UP project deliverables 3.2.2 “Regulatory framework” and 3.2.3 “Scientific description”).

Case Study Target Area	Type of Protection/s	Management Authority	Year of Establishment	Area (ha)	MPA Nature
Thermaikos Gulf (EL)	(i) Nationally designated MPA	Thermaikos Gulf Protected Areas Management Authority	1974	4350	Partially marine
	(ii) Natura 2000				
	(iii) Ramsar				
Amvrakikos Gulf (EL)	(i) Nationally designated MPA	Amvrakikos Gulf-Lefkada Management Agency	2017	60,104	Partially marine
	(ii) Natura 2000				
	(iii) Ramsar				

Table 2. Cont.

Case Study Target Area	Type of Protection/s	Management Authority	Year of Establishment	Area (ha)	MPA Nature
Cabo de Gata-Níjar (ES)	(i) Nationally designated MPA (ii) Natura 2000 (iii) Ramsar (iv) MAB UNESCO (v) SPAMI	(i) Spanish Ministry of Environment (sea) (ii) Andalusian Region Government (land and coast)	1995	12,012	Partially marine
Albufera de Valencia (ES)	Natura 2000	Valencian Regional Government	2009	8475	Strictly marine
Sinis Peninsula-Mal Di Ventre Island (IT)	(i) Nationally designated MPA (ii) Natura 2000 (iii) SPAMI	Municipality of Cabras	1997	26,703	Strictly marine
Ventotene and Santo Stefano Islands (IT)	(i) Nationally designated MPA (ii) Natura 2000	Municipality of Ventotene	1997	2799	Strictly marine

3.2. Criteria for Data Collection

A fundamental part of the work and data collection was the field investigation through direct and participatory observation. The authors were involved in the TUNE UP project as part of the research unit of the Department of Architecture of Roma Tre University. This allowed direct observation and participation in the project's development in the field, and thus the understanding of the collaborative governance process' critical steps, its strengths, and its weaknesses. The research group also organized workshops and seminars with stakeholders, as well as events and meetings between the project partners and other relevant organizations at the Mediterranean level (info days, seminars, and training courses). All this allowed us to collect information and suggestions directly from the subjects coordinating the activities in the different case study target areas.

The observation includes the analysis of data and information extracted from the work delivered by the project partners (namely the project deliverables). Moreover, the authors reviewed some of the data by asking for corrections and clarifications from project partners. The responsibility for data hereafter presented is on the project partners and for data discussion is on the project partners.

3.3. Criteria for Comparison

The criteria for comparing the selected case studies were defined starting from the multistage methodology used by the project for supporting the application of the Environmental Contract tool in MPAs [4].

Accordingly, the methodology is based on three consequential stages that lead to the achievement of the MPA Contract objectives (Figure 3). The first preparatory stage consists of (i) the identification of the perimeter of the Contract as well as its influence area, (ii) the drafting of the context analysis, and (iii) the establishment of the governance system with the signature of the first commitment by the promoter and other key stakeholders (local MoU). The development stage follows, concerning (i) the identification of the strategic vision, a concerted medium-long-term scenario combining the general planning objectives with local development policies, needs, opportunities, and implementation possibilities, and (ii) the drafting of the final commitments contained in the final agreement and the Action Plan (AP) [45]. The AP determines the priority actions, and, for each action, it specifies the type of intervention (concrete, research, data collection, ...), the area of imple-

mentation, objectives and expected results, the responsible bodies and other stakeholders involved, the necessary financial and human resources (both available and to be allocated), the implementation lifespan and the related monitoring activities. The final agreement is a legally binding document that sets off the commitments of the undersigning parties (both private and public) to carry out the actions included in the AP and share in the participated process. This private–public agreement has many definitions and many names according to national regulations (e.g., “Contract” in France, “Negotiated Programming Agreement” in Italy), but the name of the final act is not as important as the key aspects of the governance that stakeholders commit to. Once the final agreement is subscribed to by key stakeholders and the Action Plan is released, the implementation stage is opened, and it is possible to launch the actions’ implementation.

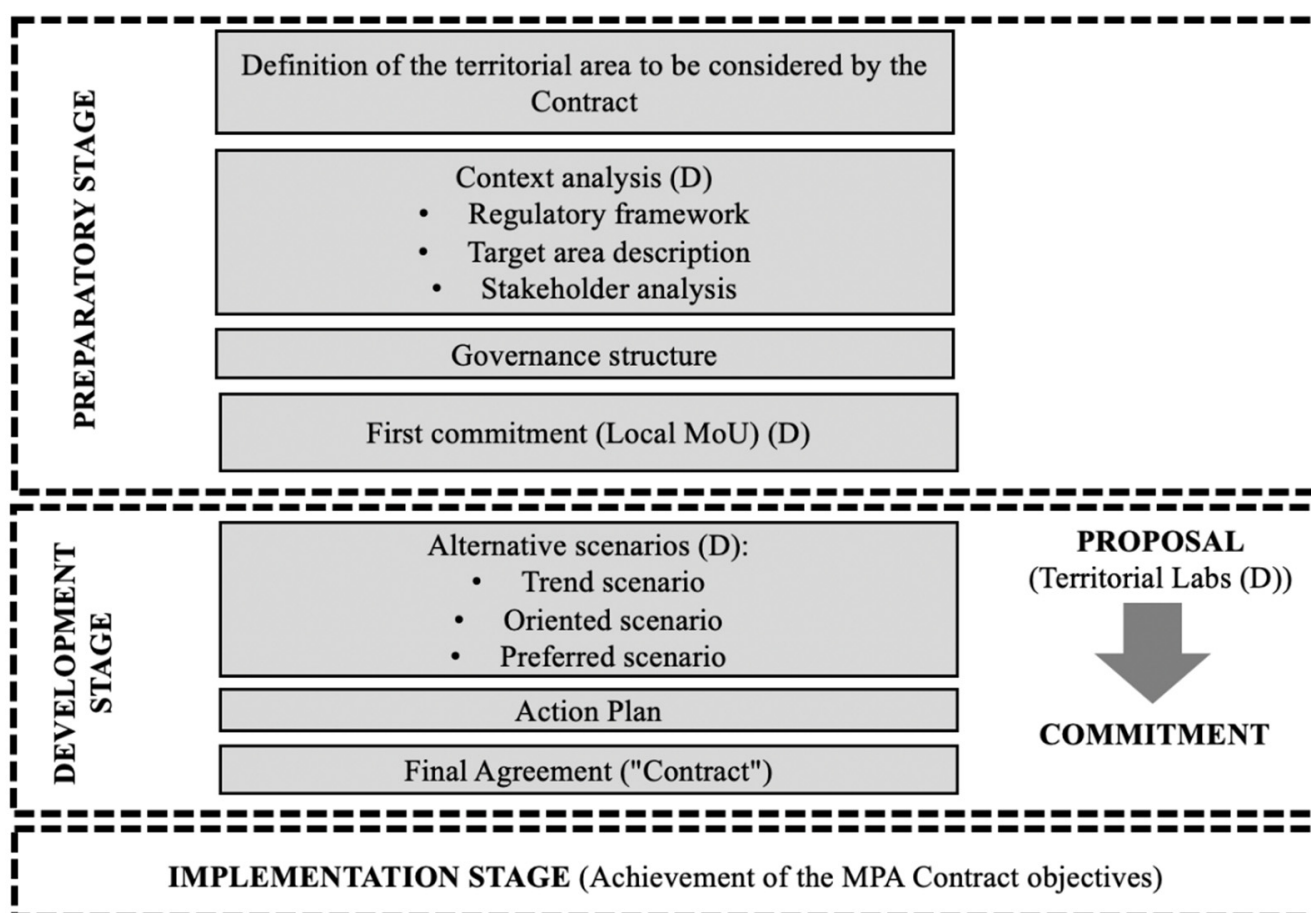


Figure 3. The stages of the methodology (elaboration of the authors adapted from Palazzo et al., 2021 [4]).

It must be noted that the Interreg MED TUNE UP project’s purposes were to activate the MPA Contract processes in target MPAs within the project’s lifespan and to transfer and capitalize the tested tool in other MPAs in the same regions. For these reasons, the case studies main outputs at the time of the article publication are the subscription of the MoU and the elaboration of the alternative scenarios. The TUNE UP framework provided both the strength of the research (the technical and scientific debate lacks insights and comparisons between the different regulatory systems of MPAs with reference to the possibilities offered by collaborative governance tools) and some limitations due to the application of the Environmental Contract only in its first phases, which did not allow to evaluate future development impacts. In this framework, the authors investigated the six selected case studies starting from four main project steps (deliverables: context analyses, local MoU, alternative scenarios, and report of territorial labs) and by observing and comparing three key aspects of the Environmental Contract:

- The definition of the area considered by the Contract as its ‘perimeter’ and how it affects the MPA governance system;
- The participatory/engagement process and the key stakeholders’ role;
- The solutions identified by the processes concerning the governance.

The comparison and evaluation criteria for the first aspect concern the institutional system affected by the Environmental Contract, defined by Bennet and Satterfield (2018) as both the formal (e.g., constitutions, laws, policies, tenure systems) and informal rules (e.g., cultural context, social norms, prevailing power structures) that shape human interactions (e.g., in the form of decision-making structures and processes) and that guide, support, or constrain human or management actions [46].

The second criterion focuses on the multi-stakeholder, bottom-up, and inclusive decision-making process on which the Environmental Contract is based. Specifically, the methodology foresees the organization of participatory planning workshops exploiting the scenario planning technique (trend, oriented, preferred scenario) to integrate the “expert knowledge” set up during the first stage of the process through the context analyses, with the “community/stakeholder knowledge”. The comparison and evaluation criteria used for the participatory process and the engagement of stakeholders and local communities aimed at understanding (i) the role and the capacities as promoter and coordinator of the key actors involved in the participatory process and necessary for guaranteeing multi-level collaborative governance; (ii) potentialities and criticalities for ensuring an active involvement and commitment of the actors.

The last set of comparison and evaluation criteria is central to the Environmental Contract tool and acts in the field of governance. The study reports (i) the criticalities and challenges of the MPAs deducted from the trend scenario, which seeks to reproduce the continuity of current trends; (ii) the corrective measures of the preferred scenario considered as enabling factors to achieve the objectives of environmental protection and sustainable local development and in such way respond to both the local protection needs and the achievement of EU targets. This review must be read in the context of the target countries’ environmental regulatory framework: although all Member States operate having acknowledged the European policy framework, national regulations on MPAs are multifaceted and continuously under review and update, coherently with the evolution of the EU framework itself. More specifically, the laws reported in Table 3 contributed to setting each country’s governance system for MPAs according to political and regional willingness and specificities. Acknowledging this perspective allowed us to highlight several criticalities that stream down from the national systems affecting both the current management and the foreseen renewed multilevel governance.

Table 3. Overview of EU directives and national laws addressing marine-connected issues (elaboration of the authors).

EU Directives	Year	National Laws
Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (Birds Directive)	1974	Greece—Legislative Decree 191/1974, incorporating Ramsar Convention
	1978	Greece—Law 855/1978, incorporating Barcelona Convention
	1979	
	1982	Italy—Law 979/1982 on sea safeguard
	1988	Spain—Law 22/1988 of 28 July 1988 on the Coasts
Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)	1991	Italy—Law 394/1991, Framework law on Protected Areas
	1992	

Table 3. Cont.

EU Directives	Year	National Laws
Water Framework Directive 2000/60/EC	1998	Greece—Join Ministerial Decision n. 33318/1082 of 28-12-1998 incorporating Habitat Directive
	2000	
	2001	Spain—Legislative Royal Decree 1/2001 on water
	2003	Greece—Law n. 3199/2003, incorporating Water Framework Directive
	2006	Italy—Legislative Decree 159/2006—Environmental Code
Council Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)	2007	Spain—Law 42/2007 on Natural Heritage and Biodiversity (establishing Natura 2000 network in Spain)
	2008	
Council Directive 2009/147/EC on the conservation of wild birds (Birds Directive)	2009	
		Spain—Law 41/2010 on the Protection of the Marine Environment
	2010	Greece—Join Ministerial Decision n. 37338/1807/E.103 of 06-07-2010, incorporating Bird Directive
	2011	Greece—Law 3983/2011, incorporating Marine Strategy Framework Directive
	2013	Spain—Law 2/2013 on Coasts
	2020	Greece—Law 4685/2020 reform of the environmental legislation and the renewable energy sources licensing process

4. Results

4.1. The Definition of the Area Considered by the MPA Contract as Its ‘Perimeter’ and How It Affects the MPA Governance System

For the purpose of unveiling the complex relations of formal and non-formal issues, stakeholders, and regulations, that actively influence the protection of marine protected environments, the area affected by the MPA Contract was articulated in (i) a primary functional area (namely, the perimeter) and (ii) a wider relational area (namely the influence area) optionally added to help integrating issues and stakeholders that influence or are influenced by the dynamics of the target area [4].

As reported in Table 4, the Interreg MED TUNE UP experience allowed us to draw a set of representative records.

The basic case is that of the MPA Contract’s perimeter overlapping the MPA administrative boundary and not considering an influence area to circumscribe the criticalities and concentrate the action on strictly environmental protection measures. This solution would create an enclosed and self-referential system, though involving the outward institutional stakeholders. This configuration was outlined in the case studies where the processes had modest power to notch the current governance system because of administrative barriers (Sinis Peninsula, bureaucratic reasons influenced the selection of the Contract’s area). The second case extends the area of the Contract by selecting, within the influence area, specific areas subject to environmental protection measures that, in most cases, are adjoining wider Natura 2000 sites (Albufera de Valencia, Thermaikos Gulf). This solution allows us to respect the environmental and ecological continuity and to coherently enhance it when considering all existing and forecastable actions. When the MPA is part of a wider protected system, the influence area of the Contract could consider the whole system to hold together all the positive and negative influences and side effects. Moreover, when those protected areas share the same managing authority, the MPA Contract can represent the starting point of a more extensive Protected Area Contract, and protection and managerial reasons jointly shape the selection of the influ-

ence area (National Park of Amvrakikos Wetlands). The fourth case takes place when the area of an MPA falls within more than one municipality, so administrative principles are decisive for the area selection. Those municipalities aim to be equally involved in the Contract and constitute the administrative unit upon which to select the scale and the area of the Contract and to prioritize the socio-economic actions. Specifically, in addition to the MPA, the Cabo de Gata-Níjar Natural Park also includes part of the municipalities of Almería, Carboneras, and Níjar, which territories determine the boundaries of the Contract. The last case is that of an MPA (strictly marine) falling within an island with protected mainland managed by the same authority (Ventotene and S. Stefano Island and State Reserve). The protection on land and sea is considered into both the perimeter and the influence area of the Contract by recognizing the two ecosystems as integrated and in connection with local economies. The case of the islands, depending on their proximity to the coasts, can allow them to undertake a Protected Areas Contract, an Islands Contract, or even a Coast Contract instead of a sole MPA Contract (Figure 4).

Table 4. The perimeters and the influence areas considered by the MPA Contracts and the principles followed for selecting the influence area.

Case Study Target Area	Management Authority	Perimeter	Influence Area	Principle for Selecting Influence Area
Thermaikos Gulf (EL)	Thermaikos Gulf Protected Areas Management Authority	MPA	Thermaikos Gulf Protected Areas	Protection
Amvrakikos Gulf (EL)	Amvrakikos Gulf-Lefkada Management Agency	MPA	National Park of Amvrakikos Wetlands	Protection + Managerial
Cabo de Gata-Níjar (ES)	(i) Spanish Ministry of Environment (sea), (ii) Andalusian Region Government (land and coast)	Cabo de Gata-Níjar Natural Park	Municipalities of Almería, Carboneras and Níjar	Administrative
Albufera de Valencia (ES)	Valencian Regional Government	Marine NATURA 2000	Marine + Terrestrial NATURA 2000	Protection
Sinis Peninsula—Mal di Ventre Island (IT)	Municipality of Cabras	MPA	-	Administrative
Ventotene and Santo Stefano Islands (IT)	Municipality of Ventotene	MPA	MPA + State Natural Reserve	Protection + Managerial + Natural features

Since the Environmental Contract is a tool that brings together existing plans and programs with the aim to enhance and highlight the articulated system of interrelations they build on, different local, regional, sectoral, and socio-economical dimensions are intertwined and cannot, by themselves, embed and exhaust all the issues at stake. The sectoral nature of regional planning confirms this complexity since each tool matches different perimeters and thematic areas (General Plans, Water Management Plans, Landscape Plans, Protected Areas Management Plans, etc.).

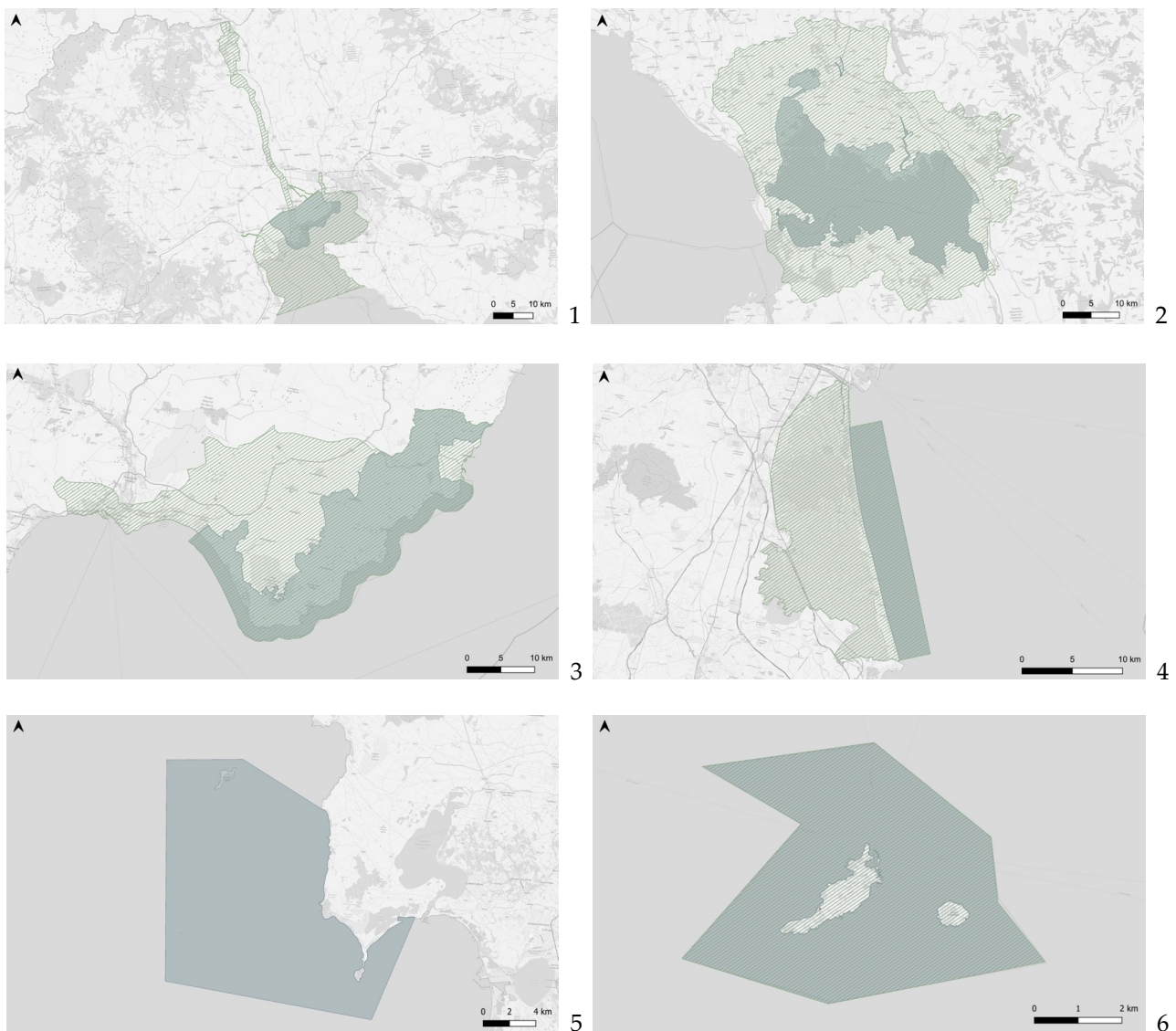


Figure 4. The maps of the perimeters (in striped green) and the influence areas (in light blue) considered by the case studies: (1). Thermaikos Gulf (EL), (2). Amvrakikos Gulf (EL), (3). Cabo de Gata-Níjar (ES), (4). Albufera de Valencia (ES), (5). Sinis Peninsula-Mal Di Ventre Island (IT), (6). Ventotene and Santo Stefano Islands (IT).

As shown by the Interreg MED TUNE UP case studies, the perimeter of the MPA Contract allows circumscribing the target area into stronger or weaker network systems, thus integrating:

- The issues (natural, cultural, local development, etc.) to be considered because of their contribution to the wider dynamics affecting the MPAs (i.e., upstream, etc.);
- The regulatory framework, reflecting the sectoral nature of the planning (e.g., General Plans, Water Management Plans, Landscape Plans, etc.) and the protection levels (e.g., Nationally designated MPA, Natura 2000 site, Ramsar site, SPAMI, MAB Unesco) at stake;
- The stakeholders who influence or are influenced by the dynamics of the target area.

4.2. The Participatory/Engagement Process and the Key Stakeholder's Role

The key figure of the Environmental Contract is the coordinator, who has the task of coordinating the overall implementation of the process and engaging competent public administrations and stakeholders. In the framework of the Interreg MED TUNE UP

project, the project partners acted as promoters starting up the MPA Contract processes in target areas and identifying the coordinator within the management structure of the MPA.

Indeed, in some cases, the figures of the promoter and the coordinator corresponded, specifically when: (1) the project partner was the managing authority of the target MPA such as in the case of Amvrakikos Gulf-Lefkada Management Agency, (2) the project partner was a key NGO working in the target MPA such as for SEO/BirdLife and MedSea, (3) the project partner was an association of local authorities such as for the Andalusian Federation of Towns and Provinces.

In other cases, the project partners collaborated with the management authority of the target MPA for the implementation of the project and the process. This is the case of Ventotene and S. Stefano Contract, in which Roma Tre University acted as a promoter and the Municipality of Ventotene as coordinator, or of the Thermaikos Gulf MPA Contract in which Anatoliki S.A. was the promoter and Thermaikos Gulf Protected Areas Management Authority the coordinator.

Within all the tested combinations, the most fruitful cases proved to be those when the two figures were the same entity. The process of the Amvrakikos Gulf MPA benefited from the highest degree of commitment of the Amvrakikos Gulf-Lefkada Management Agency as coordinator of the process and MPA manager and from its strategic position as an intermediate between resource users and government authorities. This combination provided more power to the process and enabled more effective governance of the target area under the agency's guidance and responsibility.

On the other hand, the case of Ventotene and S. Stefano's MPA Contract process highlighted some criticalities related to the mismatch of the aforementioned roles. The collaboration between the University and the Municipality was not always effective, and while the MPA director was supportive, the political side did not ensure a continuous endorsement of the process. In addition, this situation stressed a critical aspect embodied in the MPAs governance system in Italy that entrusts MPAs' management mainly to local administrations. The overlapping of management tasks with political powers does not provide sufficient independence to MPAs (in financial and management matters), thus jeopardizing the effectiveness of MPA protection.

Concerning the capacities of the coordinator, both SEO/BirdLife (Albufera de Valencia) and FAMP (Cabo De Gata-Níjar MPA) cases demonstrate that the process implementation requires not only political commitment but also adequate technical expertise. Their previous experiences on Environmental Contracts (SEO/BirdLife and FAMP participated in the Interreg MED WETNET project; FAMP also participated in the Interreg MED COASTING project) allowed them to effectively carry out the process and establish the collaborative governance model. Moreover, FAMP, being an association of municipalities and provinces, ensured a wider and rooted vision of the process, also thanks to its capabilities to successfully engage local public institutions (Almería, Carboneras, and Níjar city councils) to establish fruitful interinstitutional and inter-sectoral collaboration, and to start a constructive dialogue with the regional authorities for mainstreaming the Environmental Contract tool in Spanish regulations.

Once the key figures were set, relevant public and private stakeholders (e.g., national public authorities, regional public authorities, local public authorities, environmental NGOs, universities and research centers, local development agencies, environmental agencies, tourism agencies, local private businesses working on the fishery, agriculture, and tourism sectors) were engaged in the collaborative governance processes [47–50]. At the end of the project, key stakeholders subscribed to the Memorandum of Understanding, committing to prosecuting the development of the MPA Contracts' processes. The case studies showed that the stakeholders took action in the processes by gradually recognizing the multifaced and multilevel benefits deriving from the Contract and specifically by:

- Recognizing in the tool an opportunity to establish a bottom-up, more sustainable model of management and development for the MPAs and the connected areas (influence area, when any);
- Understanding that the process would help establish an effective communication channel with a specific typology of stakeholders. This occurred in the Thermaikos Gulf MPA Contract process when the General Directorate of Development and Environment of the Region of Central Macedonia disclosed a high degree of commitment as it realized that the process would help establish a communication channel with the business groups they have to supervise (top-down);
- Being motivated by “hinge stakeholders” who influence the engagement of other stakeholders initially feeling reluctant to participate in the governance process (potentially triggering a snowball effect). Hinge stakeholders are generally great allies for the development of the process and can be: (i) influential public authorities, as in the case of Albufera de Valencia, where the participation of the two administrations competent in the MPA’s management (regional government and the Coast Demarcation of the Spanish Ministry of Environment) provided legitimacy and significance to the process; or as in the case of Ventotene and Santo Stefano where the Regional Special Office for Small Municipalities and River Contracts encouraged the participation of the Municipality, promoted the collaboration of the other MPA located in the region and committed to legally recognize the MPA Contracts in order to improve the conservation of biodiversity; (ii) associations capable of involving their members or other associations; (iii) a single member of an association, as occurred in the case of the Thermaikos Gulf where a member of the farmer association, after participating individually in the process, managed to drag its association in, thus widening the influence of the process.

In addition, a significant driver for stakeholder motivation proved to be the structural lack of management, regulation, and visibility of the protected area, as well as the deep degradation of environmental and economic values, all factors that triggered the community of Albufera de Valencia marine area’s engagement.

Finally, common difficulties in engaging key stakeholders were related to local authorities’ scarce involvement in marine issues; fishermen’s indifference due to the financial crisis of the sector; cultural attitudes connected to the scarce awareness of participatory processes, which are not yet felt as suitable tools for improving local stakeholders’ condition.

In general, the processes succeeded in:

- Creating synergies between public authorities and bodies, users, and organizations active in target areas;
- Identifying site-specific problems by sector of activity and key responsibilities;
- Proposing concrete actions that take into consideration local development, environmental protection, and the promotion of the area.

4.3. The Solutions Identified by the Processes Concerning the Governance

While defining problems and corrective actions in MPAs’ governance, the case studies identified several recurring issues in the regulative, managerial, and operational fields, demonstrating how the legal establishment of a protected area is not sufficient to achieve conservation goals effectively if not supported by adequate governance and enforcement.

From the regulative perspective, the Greek cases unveil a great complexity due to the continuous change in the institutional framework that occurred until 2020, when Law 4685/2020 reformed the National Governance System for Protected Areas. It established a central body operating within the Ministry of Environment (Natural Environment and Climate Change Agency—NECCA) and different Protected Areas Management Units (PAMU) operating at the regional level under the coordination of NECCA and that put together the former single managing authorities of the protected areas. Concerning the planning requirements, it obliges all Natura 2000 sites to provide special environmental

studies and management plans to establish zoning systems, appropriate restrictions on land use and activities, administrative and operational regulations, as well as conservation objectives and management goals, to be approved by a presidential decree. Although the Greek government is committed to updating the regulatory framework to improve its effectiveness and comply with EU requirements, it must be noted that this prolonged process, which includes the updating and enforcement of the law, together with the approval of the management plans at a high institutional level, is leading to significant delays in the decision making and implementation of the obligations of the European directives (target 2030).

As already mentioned, the regulatory framework is also influenced by political and regional willingness and specificities. The Spanish and Italian case studies demonstrate how the two jurisdiction chains are rooted in two different institutional and political systems (Table 5). While the Italian government has tried to promote subsidiarity at the regulatory level empowering the local level (Law 394/91), Spain operates in the context of a more accentuated centralization endorsing the regional governments. Indeed, besides maintaining the legal jurisdiction at the national level (Law 41/2010), through the Network of Marine Protected Areas of Spain—RAMPE—operating under the Ministry of Environment Marine and Rural Affairs, the management power is entrusted to the regional level. On the other hand, the Italian attempt to empower the local level is not reflected at the management level. Indeed, the Ministry of Environment entrusts the management of MPAs to existing public bodies (municipalities or park authorities) but does not support this transfer of responsibilities with appropriate funding. This situation leads to a structural lack of independence of the management authority from a political, administrative, and financial standpoint.

A matter of formal distribution of competencies emerged from all case studies, mainly due to the complex structure of MPAs' regulation and planning, resulting in the spatial and thematic overlap of responsibilities. Those competencies that frame legal, regulative, operative, monitoring, and control issues are divided among authorities acting at different scales and levels (national, regional, local). In operational terms, these problems result in institutional and bureaucratic barriers when seeking cooperation among institutions, among public and private entities, as well as when pursuing the engagement of local communities in the MPA's governance and monitoring. The challenging coordination of many responsible bodies led to non-effective management of the protected area. As an example, the Spanish cases highlighted that the top-down and rigid protection regime added to the bureaucratic framework seems to jeopardize the effectiveness of the MPA management and does not support the municipalities or other local actors in implementing actions and interventions in the area.

Another disabling factor can be traced back to the lack of commitment in the wide field of environmental protection by competent authorities, local stakeholders, and adjoining operators. Lack of commitment goes along with the lack of human resources and expert competencies in the managing bodies, with poor communication of the MPA's conservation objectives toward citizens and the economic sectors, finally leading to poor knowledge of the compatibility between different activities and uses and regulation of activities.

Table 5. Overview of the current governance system acting on the target MPAs (elaboration of the authors).

Case Study Target Area	Management Tools	Jurisdiction Chain		
		National	Regional	Local
Thermaikos Gulf (EL)	Management plan under preparation	Ministry of Environment and Energy National Policy Governance System for Protected Areas; Natural Environment and Climate Change Agency-NECCA	Protected Areas Management Unit of Central Macedonia	Thermaikos Gulf Protected Areas Management Authority *
Amvrakikos Gulf (EL)	Management plan under preparation	Ministry of Environment and Energy, National Policy Governance System for Protected Areas; Natural Environment and Climate Change Agency-NECCA	Protected Areas Management Unit of Acheloos Valley and Amvrakikos Gulf	Amvrakikos Gulf-Lefkada Management Agency *
Cabo de Gata-Níjar (ES)	Natural Resources Management Plan and the Master Plan for the Use and Management of the Cabo de Gata-Níjar Natural Park	General Directorate for Natural Environment and Forest Policy of the Ministry of the Environment, and Rural and Marine Affairs	Andalusian Regional Government	
Albufera de Valencia (ES)	No management plan at the time of the project (foreseen)	General Directorate for Natural Environment and Forest Policy of the Ministry of the Environment and Rural and Marine Affairs	Valencian Regional Government	
Sinis Peninsula-Mal Di Ventre Island (IT)	MPA Regulation and zoning	Ministry of Environment		Municipality of Cabras
Ventotene and Santo Stefano Islands (IT)	MPA Regulation and zoning (under revision)	Ministry of Environment		Municipality of Ventotene

* Active at the time of the processes' development, then merged into regional PAMU.

The absence of a management plan (Table 5) was identified in several case studies. Therefore, despite the designation of protected areas, MPAs are often only “paper parks”, as first defined in a 1999 WWF-World Bank report to highlight that protection on paper is meaningless if it is not backed up by strong enforcement and effective management on the ground [51–53]. Indeed, the lack of a roadmap and a management tool proved to generate the worsening of the protected area conservation status, conflicts, the feeling of abandonment, and the loss of capacities for the integrated management and participation of stakeholders in management.

This work acknowledges the mentioned regulative framework and the necessity to improve it to achieve EU targets by (i) completing the institutional framework of the MPA, thus increasing its effectiveness, (ii) enhancing the enforcement of policies and legislations, (iii) reducing the regulative complexity, (iv) strengthening the administrative autonomy of the MPA managing body; some of which are goals that need to be addressed at the supra-regional level. The Environmental Contract, on the other side, proved to be precious in identifying all these issues, but it acts at the local level, and by exploiting horizontal and vertical subsidiarity, it can engage regional and

supra-regional levels. From this perspective, it constitutes a bottom-up example of EU multilevel governance.

The scenarios developed within the participatory processes concentrated on some key solutions (corrective measures) that exploit the power of the Environmental Contract tool to establish a multilevel, multi-objective, and multi-stakeholder decision-making process. Indeed, the creation of a new collaborative governance system enables the management of conflicts and to share of intentions, commitments, and responsibilities among key stakeholders and within the current attribution of competencies. This allows us to stimulate a chain of benefits in the governance of MPAs aiming to achieve the objectives of environmental protection and sustainable local development and, in such a way, respond to both the local protection needs and the achievement of EU targets. Specifically, a transparent and open network of cooperation acts as a permanent working table for consultation and negotiation purposes and for:

- The revision, elaboration, and approval of management plans, planning tools, and the MPAs zoning system (creation of a mechanism of participation in the decision-making process and exchange of knowledge);
- The definition of a medium–long-term strategy for shared conservation and sustainable development objectives;
- The design of potential collaboration niches, the creation of synergies between actors and sectors, and commitment mechanisms, including specific co-management formulas, such as coastal custody agreements;
- The development of capacities of stakeholders (public authorities and MPA managers) and the strengthening of the successful participation in European funding calls.

5. Discussion

Although characterized by similar environmental conditions, European MPAs are operating within different socio-economic and governance contexts [54]. The in-depth analysis reported in this work and developed within the Interreg MED TUNE UP project confirms that MPAs' management is strongly influenced by the national political systems, by the local regulatory framework on environmental protection, biodiversity, and protected areas, as well as by the level of economic development of each country. The latter affects the availability of financial resources, among other issues, and eventually delivers disparities and economic polarization.

The results of our work are reinforced by the Forum of Mediterranean MPAs organized by MedPan in 2021, which concluded that the most considerable issue of Mediterranean MPAs is their enforcement, meaning “the need for effective surveillance and enforcement of regulations” [55]. This has been related both to the widespread poor recognition of MPAs' role and to the overlap of competencies with other administrations or authorities involved in marine environment conservation. The forum outlined, at the regulative level, the overall need for more binding regional and/or European strategies to support the concrete implementation of national strategies (to be further boosted at the local level) and, at the governance level, the need to define an open, integrated, inclusive MPA governance system, involving as many stakeholders as possible, not only the ones from the conservation sectors.

In this respect, the analysis and comparison of the six selected case studies confirm that the MPA Contract is an effective tool to downscale the objectives of the European and national policies to the local level through a process of vertical and horizontal subsidiarity. Indeed, the collaborative governance system it implements is capable of addressing and solving some key issues thanks to its intrinsic multilevel and multi-stakeholder character. It has proved effective in engaging key stakeholders in a transparent and open network, which can allow for overcoming the fragmentation of competencies and can bring the regulatory levels into dialogue. Furthermore, when defining synergic protection actions, the tool ensures coherency and a clear and consistent vision capable of giving strength to

the MPA, limiting the conflicts between nature conservation and local development in a sustainability framework [56].

The case studies' comparison shows that the governance process is facilitated and most effective when the following four conditions are met.

1. A robust and legitimate coordination of the process is established. The promoter and the coordinator should be the same body, an organization capable of carrying on an effective horizontal and vertical dialogue, with legitimacy and competence recognized by the political and technical points of view. To this aim, MPAs managers need to be empowered and recognized as stakeholders, as well as to recognize other stakeholders in charge of conservation issues to better distribute their tasks. This ensures both strong political justification when negotiating with stakeholders and local support during the participative process;
2. The engagement of the "gatekeeper", who controls the resources and has the possibility to use its veto power and block the process, is effective [44]. The active engagement of these authorities, generally regional or national authorities, can ensure the capacity to overcome administrative and regulatory barriers;
3. An inclusive, wide, open, transparent, and equitable participatory and negotiation process is developed. The process must engage all the key stakeholders and must be driven by a collective vision perceived as legitimate by stakeholders to produce fair outcomes [46];
4. A responsive attitude is set for the process. An adaptable and flexible process ensures that environmental governance is adaptable both to changing environmental and social conditions and to diverse contexts. Institutional and social learning is realized through ongoing monitoring and evaluation, communication, and reflection on the social and ecological performance of environmental governance [57,58].

Moreover, the MPA Contract's vision must be robust, flexible, and responsive to have the capacity to overcome problems rooted in the systems of formal and informal relationships between regional actors that might be encountered and might be perceived as structural and unbeatable barriers. If not carefully addressed, these issues, which can be caused by past or present regulatory gaps, lack of resources, poor commitment and capacity of human resources, or contingent political issues, risk reiterating and compromising the effectiveness of collaborative governance. However, in order to fully evaluate the impacts of the Environmental Contract for the improvement of the management of MPAs, it would be important to concentrate further research efforts on monitoring the subsequent implementation phase of the tool, which has not been developed by TUNE UP.

This work highlighted that the MPA Contract tool needs to tackle some limitations embedded in the very nature of multilevel governance and the fact that it is subject to the influence of external factors. The first aspect to consider is that the presence or lack of a specific reference framework for the establishment of collaborative environmental governance processes in one country can be a constraint or an opportunity. Specifically, where the Environmental Contract tool is regulated, as in Italy, its application to MPAs can result in a smooth process. On the contrary, the lack of this framework (as in Greece and Spain) can constitute a disabling condition requiring a higher degree of commitment to establishing a robust governance process. A second structural issue to be considered concerns the complex system of regulations affecting the MPAs, which cannot be addressed exclusively from the bottom-up perspective of the Environmental Contract. Therefore, although the solutions identified by the case studies respond to the problems of fragmentation of competencies and the need for a clear attribution of responsibilities among the structural problems, the involvement of higher policy level is necessary to completely address them and to let the MPA Contract tool fully embed the potential of MLG.

It may be possible to infer that by challenging the bottom-up implementation chain of MPAs protection, the MPA Contract unveils the concrete need to match responsibility

and authority at lower scales with adequate support and oversight from higher levels. This necessity arises in the European/international debate regarding the governance of MPAs as well. It was focused as a key issue in the debate of the Summer School “MPAs Governance. Linking Theory and Practice”, an international meeting organized by TUNE UP whose objective was to discuss the results of the project, but also in the Committee of the Regions’ 2021 Opinion. Coherently with the ongoing debate, we can conclude by highlighting that MLG for MPA protection needs to be enhanced through synergies to be established at the lowest and highest policy level and through a dialogue with European institutions. In this respect, a significant contribution to help resolve or compensate for economic differences between countries and areas and with a view to managing a certain region or environment (i.e., marine) more coherently can come from transnational cooperation, lobbying, and advocacy activities [59].

As shown in the article, transnational cooperation is a promising field of action and research to improve or share knowledge, data solutions, and tools, to build capacities and skills also in MPAs’ staff, and finally, link policymaking with local actions and solutions. The Mediterranean MPA Network—MedPAN, for instance, is a prolific NGO aiming to support a Mediterranean vision and is engaged in several projects for the training of stakeholders in MPAs, whether they are fishers or managers (Interreg Med MPA Networks). The projects Life Enable and Interreg MED TUNE UP also work on the path of capacity development for managers and local stakeholders.

Lobbying and advocacy activities are pivotal to activating a more effective dialogue at European and national levels (through NGOs, networks, and public administrations) to improve the legal instruments and to define funding mechanisms. Moreover, since, as resulted in our work, the funding flows follow the established governance chain, a clear positioning of the EU on resources to be dedicated to the governance of MPAs would certainly underline the political priority of the MPAs and ensure the effectiveness of protection measures.

Finally, we consider the aforementioned opinion of the COR a reference document when calling for direct support from the EU for the protection of the marine environment. Focusing on the role of subnational authorities in the MSFD implementation, the COR calls for the European Commission to propose rules for Member States on how to integrate these authorities into the process of identifying, designing, and planning measures, clarifying responsibilities, and fostering more engagement and ownership from subnational authorities. This concept is thickened when proposing to establish the 2030 European Marine Biodiversity Task Force consisting of a pool of operational environmental project managers who will be at the disposal of subnational authorities to enable them to launch projects and measures to address a particular problem in a specific spot. This intermediate technical structure could help subnational and local authorities acquire the right skills, could provide operational support with planning and organization, and advise on projects and how to apply for EU funding. In COR’s view, putting subsidiarity into action would unleash local and subnational authorities’ untapped potential to protect the EU’s marine environment [25]. In this respect, future research could be specifically addressed to analyze regional and local structures of decision making and their interrelations in order to identify effective and successful arrangements and to define solutions and procedures to be shared at the European level.

6. Conclusions

This work aimed to explore the local dimension of MPAs’ governance within multiple case studies testing the Environmental Contract tool in the framework of the Interreg MED TUNE UP project and to finally highlight its effectiveness and capabilities to strengthen environmental protection within a multilevel governance system.

Through a research methodology acting on a national and local scale, plus taking into consideration European strategies and policies, this work made it possible to identify several factors that influence MPAs’ management and the need to promote and ensure

the enforcement of regulations in MPAs. Indeed, after registering the most recurring criticalities that emerged in the case studies, such as the fragmentation of competences among managing bodies and regional and local authorities and the incompleteness of the regulatory framework, this work recommended the Environmental Contract as an effective governance tool to downscale the objectives of the European and national policies to the local level and to address and solve some key issues thanks to its intrinsic multilevel and multi-stakeholder character. The tool was also drawn as a trajectory on which local authorities can improve the protection of marine resources and local development as well as strengthen their capabilities.

In this respect, a series of recommendations for the application of the tool in MPAs have been listed concerning the definition of the area to be considered by the Contract, the participation methodology to be implemented, and the definition of scenarios to strengthen the governance system, manage conflicts and share intentions, commitments, and responsibilities among key stakeholders and within the current attribution of competencies.

The article finally outlined the opportunities for strengthening the MLG offered by interinstitutional dialogue at the national and European levels to be pursued through lobbying and advocacy activity and future research.

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