Master's thesis

Strengthening MPAs' Networking Capacity at Transatlantic Scale

Recommendations to Implement the Common Strategy of the Networks Twinning Project from the Transatlantic MPA Network initiative

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Declaration

I hereby confirm that I am the sole author of this thesis and it is a product of my own academic research.

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Abstract

In recent decades, different efforts and commitments have been made at international and global scales to protect our oceans and their biodiversity, such as at the World Summit on Sustainable Development (WSSD) in Johannesburg (South Africa) in 2002, during the 5th World Parks Congress (WPC) in Durban (South Africa) in 2003, at the 7th Ordinary Conference to the Parties (COP 7) in Marrakech (Morocco) in 2001, to the Convention on Biological Diversity (CBD) in Kuala Lumpur (Malaysia) in 2004, and COP 8 in Curitiba (Brazil) in 2006. Simultaneously, other initiatives at smaller scales have emerged pursuing the same goals and acting in favour of enhancing the current marine environment degradation process. This is the case of the Transatlantic MPA Network initiative, which seeks to promote collaboration between marine protected area (MPA) institutions, practitioners and experts at the transatlantic level to unify efforts aiming to improve marine conservation and face other global challenges such as climate change and biodiversity loss. This thesis is linked to the MPA Networks Twinning project, a subproject of the Transatlantic MPA Network initiative, which aims to promote networking, unify resources and support capacity building among the regional MPA managers' networks existing in the Atlantic. In this way, it tries to establish a mechanism of coordination between networks and to define actions to enhance management effectiveness of the MPAs, as well as collaborate to improve other issues of common interest. This study contributes to identify key elements within their existing resources and distinguish potential collaboration between the networks to strengthen and improve their function and capacities. Thereafter, it seeks to define recommendations to be developed to implement the goals described in the common strategy of this project. In this regard, in order to establish a framework of the resources available within the different organizations, the technical support offered by the different networks is summarized, compared and analysed by an information gathering process. Simultaneously, data were extracted using questionnaires to the staff of different MPA institutions operating in the Atlantic. These data were compared with the findings of the information gathering and also helped to determine the necessities and expertise of each network and explore real and feasible potential collaborations between the institutions. Finally, actions are recommended to implement the common strategy of the MPA Networks Twinning project to establish a mechanism of collaboration between these organizations. This study confirms the existence of a great potential to establish links with beneficial outcomes between the different regional networks of MPA managers involved in this project. The recommendations, based on the finding of this study, propose to develop links at different level (bi, tri or tetra lateral) depending on their common interest, difficulties, weaknesses or strengths previously identified. Accordingly, the actions are related to share specific technical support between networks to complement each other services, develop collaboration to manage, create technical support or address particular management topics or issues, among others.

Keywords: regional MPA networks of managers, Transatlantic MPA Network, MPA management, institutional cooperation.

Foreword

I am extremely happy and proud to have had the opportunity to participate in the Transatlantic MPA Network initiative, which I personally think is a beautiful and interesting action towards ocean conservation. I believe this proposal as a very innovative idea because it offers another approach that goes beyond the concept of managing different parts of this planet as separate units and not considering as a whole. Everything is connected and the actions carried out in one part of the planet will affect the rest in some way. Therefore, exploring ways to cooperate and collaborate together as humanity in the management of natural resources, as well as applying a more holistic approaches to achieve objectives related to environmental conservation, are relevant and interesting actions to consider and develop to achieve a more realistic and effective management. I believe and I hope that by developing initiatives based with this perspective, humankind can achieve a better relationship with the rest of the species, and also be more respectful with the dynamics of this planet that gives us sustenance and makes life possible. For this reason, I am grateful that Purificació Canals has made possible my collaboration with this initiative and I really hope that all the work done in this study will help in some way its future development.

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Acronyms

ABNJ: Area Beyond National Jurisdiction

BDC: OSPAR Biodiversity Committee

CaMPAM: Caribbean Marine Protected Areas Network and Forum

CBD: Convention on Biological Diversity

CEC: Commission for the Environment Cooperation

CEP: Cartagena Convention

CMAR: Tropical East Pacific Marine Corridor / Corredor Marino del Pacífico Este Tropical

CONANP: Marine Conservation Programs, the Mexican National Commission of Natural Protected Areas

COP: Ordinary Conference to the Parties

EU: European Union

FFEM: French Facility for the Global Environment

GIS: Geographic Information System

ICG-MPA: OSPAR Intersessional Correspondence Group in Marine Protected Areas

ICZM: Integrated Coastal Zone Management

IMMA: Important Marine Mammal Area

IUCN: International Union for Conservation of Nature

LMMA: Locally-Managed Marine Area Network

MAIA: MPAs in the Atlantic Arc

MCPA: Marine and coastal protected area

MedPAN: Network of MPA Managers in the Mediterranean

MMA: Managed Marine Area

MMPATF: Marine Mammal Protected Areas Task Force

MPA: Marine Protected Area

MPA Center: National Marine Protected Areas Centre of NOAA

MSP: Marine Special Planning

NAMPAN: North American Marine Protected Areas Network

NEAMPAN: North-East Asian Marine Protected Areas Network

NMS: National Marine Sanctuary

NOAA: National Oceanic and Atmospheric Administration

ODIMS: OSPAR Data and Information Management Strategy

OECMs: Other effective area-based conservation measures

ONMS: Office of National Marine Sanctuaries

PANACHE: Protected Area Network Across the Channel Ecosystem

RAMPAO: Network of Marine Protected Areas in West Africa

SPA/RAC: Mediterranean Regional Sea Convention

SPAW: Specially Protected Area and Wildlife

UNEP-CEP: Caribbean Environment al Program of the UN Environment Programme

UNEP-WCMC: United Nations Environment Programme World Conservation Monitoring Centre

USA: United States America

WIOMSA: Western Indian Ocean Marine Science Association

WPC: World Parks Congress

WSSD: World Summit on Sustainable Development

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1. Introduction

1.1. Overall Context of the Master's Thesis

International efforts have been made to protect the oceans, such as at the World Summit on Sustainable Development (WSSD) in Johannesburg (South Africa) in 2002, during the 5th World Parks Congress (WPC) in Durban (South Africa) in 2003, at the 7th Ordinary Conference to the Parties (COP 7) in Marrakech (Morocco) in 2001, to the Convention on Biological Diversity (CBD) in Kuala Lumpur (Malaysia) in 2004, and COP 8 in Curitiba (Brazil) in 2006. At these international meetings nations formalized the "2010 Biodiversity Target" in which was defined the "decision VII/30" where the COP established different goals and sub-targets. Goal 1 aims to "promote the conservation of the biological diversity of ecosystems, habitats and biomes", and its targets 1.1. and 1.2. aiming to achieve "at least 10% of each of the world's ecological regions effectively conserved" and "areas of particular importance to biodiversity protected" consecutively (Goals and Sub-targets-CBD, n.d.). In addition, a necessity to increase ocean protection and to preserve at least 20-30% of each marine habitat by 2012 was recommended on the 5th WPC on 2003 (Roff and Zacharias, 2011), as well as "building a comprehensive and effective protected area systems" and to establish "a global network to support the development of transboundary conservation initiatives" (Patry, 2005). Despite these consignments, by 2010 only a few countries had implemented national marine protected area (MPA) networks which meet closely to the agreed targets, such as United States, Australia, New Zealand and Canada (Marinesque, et al., 2011). On the other hand, in 2010 the COP 10 of the CBD approved in Nagoya (Japan) the Strategic Plan for Biodiversity 2011-2020 and established Target 11, which aims to achieve by 2020, at least "10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystems services, will be conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures (OECMs), and integrated into the seascape" (Aichi Biodiversity Targets-CBD, n.d.). According to United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and International Union for Conservation of Nature (IUCN) (Explore the World's Marine Protected Areas-Protected Planet, 2019), the percentage of MPAs worldwide has increased in the last decade from a 1.85% in 2008 to 7.59% in 2018, and most of this increase in MPA coverage is a consequence of the creation or enlargement of extensive

MPAs in national waters and overseas. From the total ocean protected, 50% of the MPA surface is from United States of America (USA), France and United Kingdom, and also Mexico, New Zealand, Australia and Cook Islands comprehend an additional 30%. Despite this promising growth and improvement, the percentage is below the agreed target. Moreover, according to Sala et. al. (2018) it is also overestimated, due to the fact that only 3.6% of the protected areas have been implemented, with the rest having been designated (1.6%), and proposed (2.1%) for marine protection. Despite the efforts being made to achieve the percentage projected in the CBD, accomplishing Target 11's agreed goal by 2020 appears to be overly optimistic considering the slow worldwide development in MPA establishment in the past. These facts highlight the necessity of great efforts towards ocean protection and the need to develop ecologically representative and well-connected MPA networks (and OECMs), with effective and equitable management, which will help countries meet these conservation goals.

Networks of MPA managers are largely considered a cornerstone for management effectiveness and have the potential to accelerate the implementation of MPA targets with direct impact on ocean conservation. These platforms are crucial elements at geographic and political levels to foster capacity building between organizations as well as unifying efforts to face common and global problems related to ocean conservation and management. These connections and collaboration between the different stakeholders aiming to improve the effective management of marine biodiversity catalyse and promote decision-making processes in this regard (The Ocean Conference-Regional Marine Protected Areas networks in action, n.d).

In the recent years, there has been greater acknowledgment of networks of MPA managers at international conferences such as the IUCN World Conservation Congress (Hawaii, 2016), the plenary session of the UN Ocean Conference (New York, 2017) and the high level session of the 4th International Marine Protected Areas Congress (Valparaiso, 2017).

The Transatlantic MPA Network Initiative

The Transatlantic MPA Network initiative emerges from the identification of the necessity of international cooperation to enhance management effectiveness of MPAs within the Atlantic. This project is a European Union (EU) initiative which aims to establish a link and promote collaboration among institutions at transatlantic scale, to cooperatively

achieve the political consensus in environmental conservation scene agreed by the different nations within the Atlantic and worldwide. This initiative seeks to enhance ocean protection supporting concurrently the "blue growth" strategy as well as scientific cooperation among different countries (About – Transatlantic, n.d.).

More specifically, this project focuses within the sector of MPAs and aims to foster and enhance cooperation among managers of these protected areas existing in the different countries surrounding the Atlantic. Through different twinning projects, managers of different continents and regions within the Atlantic ocean can connect and meet to exchange and share best practices to enhance and strengthen effectiveness while managing MPAs, as well as unify forces to face global challenges such as biodiversity loss and climate change (About – Transatlantic, n.d.).

1.2. Objective of this Study

This master thesis is linked to the MPA Networks Twinning project within the Transatlantic MPA Network initiative. It aims to explore key technical elements to be considered in further steps which will contribute in the implementation of the "common strategy of networks of MPA managers", which can be found in Appendix 1, between the different regional networks of MPA managers. This strategy will trigger and develop interaction, collaboration and cooperation between the MPA managers' networks as well as other institutions around the Atlantic. It aims to define a mechanism to unify efforts and actions to enhance MPA management efficiency, and therefore also improve the protection and conservation of the Atlantic Ocean and its biodiversity. In accordance to this objective, this thesis conducts an exploration by means of reviewing the documentation in the institutions' websites as well as collecting data using questionnaires to their staff. The different technical support offered by the networks involved in the project is identified and summarized in a general overview. Finally, this study tries to distinguish how they could potentially complement each other and maximize their efforts, actions and function as networks. Simultaneously, staff opinions and different possibilities and necessities are examined to identify potential options to potentially be considered in the future design of joint actions between networks to implement the strategy. Within this framework, this thesis presents the following research question:

- *Which potentialities of cooperation between the different networks of MPA managers at transatlantic scale will be the most efficient to strengthen their efforts to develop part of the MPA Networks Twinning project's common strategy, and to support the MPA practitioners in the Atlantic region?*

In this regard, this master's thesis aims to develop different aspects linked to the first and second axis of the common strategy, explained in more detail in the posterior section 2.1.2. The first axis aims to establish a mechanism to exchange knowledge, tools and information between the regional networks of MPA managers and the second has the objective to support and develop capacity building among the organizations. This study will contribute to the identification of the relevant elements to consider and the recommended actions to be explored to future develop the two axes previously mentioned from the common strategy of the Networks Twinning project by:

- Identifying common and singular aspects between the different networks of MPA managers by comparing the technical support that they offer to MPA managers in their respective regions.
- Assessing the management needs, gaps and expertise of MPA managers in each network and therefore achieve the following goals:
    - To explore the complementary connections and coordination between the networks to strengthen their collaborative efforts.
    - To explore and identify potential key technical elements and fields to cooperate between the networks and take action on common issues to strengthen the networks' capacities, interactions and communication.
- From the framework generated by this base study, this thesis aims to identify and propose recommendations to promote this cooperation between networks which can potentially be considered on the implementation of this strategy.

This investigation was conducted by questionnaires to the staff of different MPA institutions, such as staff of the networks of MPA managers, directors and staff of national institutions, as well as secretariat of international regional seas conventions.

1.3. Practical and Academic Significance of this Thesis

One step further in marine conservation is to consider the implementation and management of MPAs not as a singular unit, but on a larger scale and interconnected with other MPAs within a region. An ecological MPA network is defined by the IUCN's Marine Program as "a collection of individual marine protected areas or reserves operating cooperatively and synergistically, at various spatial scales and with a range of protection levels that are designed to meet objectives that a single reserve cannot achieve" (IUCN-WCPA, 2008). In addition, MPA networks have been recognized to be a relevant and efficient tool for marine conservation and biodiversity protection and serve an essential role in ocean governance and the sustainable management of marine resources (Banks and Skilleter, 2010). Consequently, these ecological networks of marine reserves have better potential to enhance and increase the ecological and economic benefits compared to a single marine reserve. Moreover, these ecological networks have more considerable effects and results than the sum of the reserves considered individually (Grorud-Colvert et al., 2014).

The human aspect of MPAs is extremely important in delivering efficiency outcomes and constitutes a decisive factor that can determine if a marine reserve can successfully achieve its aims and enhance conservation within the area. According to Gill et al. (2017), the most decisive and influential predictors of an MPA's positive impacts on marine conservation are the staff and budget capacity. In this way, reserves with sufficient staff capacity have shown ecological effects that are 2.9 times better than MPAs that are lacking in staff capacity. Accordingly, MPA staff training, public involvement and scientific capacity should be improved and developed for a successful and competent global MPA network (Worm, 2017). Other studies have shown evidence of the relevance of the social aspects of environmental resource management. For example, Gutierrez, et. al. (2011) suggested that successful fisheries co-management was related to strong leadership, individual and community quotas, social cohesion and the existence of protected areas.

In recent decades, different international efforts have been made to develop the human dimensions of marine conservation, and "human" networks of MPA managers have been created worldwide at both national and regional levels. Human connectivity can indeed enhance ecological connectivity.

The objective of the Networks Twinning Project is to establish a platform where knowledge, experience and practices are exchanged among different practitioners in this sector for more effective management of MPAs. There is a range of tools available for MPA managers that can be used to enhance management and learn from the solutions and lessons of fellow/peer professionals in the sector, such as scientific articles, publications, reports and online discussion lists, among others. However, person-to-person (peer-to-peer) interaction remain the most relevant and efficient way to share information and expertise and encourage trusting personal relationships and "team" development, and in that regard "human" MPA managers' networks can provide these connections (Davis and Stinson, 2018). Accordingly, a number of MPA managers' networks have emerged at a regional scale, such as the Network of MPA Managers in the Mediterranean (MedPAN), the Caribbean MPAs Network and Forum (CaMPAM), the Network of MPAs in West Africa (RAMPAO) and MPAs in the Atlantic Arc (MAIA), North American MPAs Network (NAMPAN), Western Indian Ocean Marine Science Association (WIOMSA), North-East Asian MPAs Network (NEAMPAN), among others. Connections between different regional networks of MPA scientists and practitioners have been built over the last decade and have yielded relevant and positive benefits, such as the cooperation between MedPAN and CaMPAM. The positive outcomes of this partnership suggest that extending these interactions at a transoceanic scale could be beneficial, leading to more widespread sharing of knowledge, tools and practices (Bustamante G. et al., 2014).

Related to this idea, there are other networks that consider MPAs cooperation at a larger scale, such as the World Heritage Marine Programme, Big Ocean, the Important Marine Mammals Areas (IMMAs) and the EU Transatlantic MPA Network initiative, the last one linked to this thesis. Despite the related complexity and challenges of regional and large networks, mainly due to factors such as different national legal frameworks, languages and environmental, sociocultural, and economic contexts, these networks have achieved positive successes. In the case of the Transatlantic MPA Network and the World Heritage Marine Programme's networking efforts, numerous and strong connections between MPA managers have been created and sustained to share experience and expertise and thereby managers have inspired and guided other practitioners facing similar issues. Moreover, in the case of the World Heritage Marine Programme's networking efforts, there have emerged cases of cooperation between managers who share data on migratory species such

as birds. Such collaboration has served to improve the scientific knowledge and management actions regarding the status and dynamics of these species at a larger scale. Other similar but innovative initiatives have emerged that promotes efforts to identify and connect relevant ecological areas with the presence of migratory species, such as whales, to manage and protect them by building "sister sanctuary" relationships. This is the case of the Marine Mammal Protected Areas Task Force (MMPATF), which has identified and defined IMMAs worldwide. IMMAs are connected, and research and monitoring results are shared, along with regulations to manage whale watching and discussions about issues and impacts related to these marine mammals, such as entanglement, climate change and ship-strikes. Other benefits have occurred from networking/cooperation between MPA managers, such as scientific outcomes and efficient management practices, which converge in the publication of guidelines, as those of Big Ocean which releases documents related to new challenges, such as management of large-scale MPAs (Davis and Stinson, 2018).

For decades, extensive research on nature conservation has been developed to expand biological knowledge and define practical management tools, such as protocols, recommendations and guidelines to preserve different species, habitats and ecosystems (Arlettaz et al., 2010). Despite all this knowledge and conservation tools available in the academy, they are poorly or inefficiently implemented in the practical environmental management sector (Knight et al., 2008; Knight and Cowling, 2008). According to this fact, there is a large gap between academic research and its practical implementation in the conservation biology sector (Toomey et al., 2016; Gossa et al., 2014), and therefore, greater effort should be made to minimize this space between knowledge and action. In this sense, this study has an academic significance related to offering a small bridge in this gap by providing, in a particular case, a practical response to a marine conservation action within the Transatlantic MPA Network initiative. In addition, the framework followed through the different phases to identify and define cooperation and potential recommendations, can be a tool to be used in other studies willing to explore collaborative relationships between organizations.

The following sections of this study present the thesis framework in which the Transatlantic MPA Network's twinning projects are presented and explained, as well as the

organizations involved in it. Thereafter, the information gathered presents an overview of the technical support available from the websites of the regional networks of MPA managers, highlighting their main areas of focus. Subsequently, this study analyses and compares data collected from the questionnaires to the staff of the regional MPA networks and other institutions. A final part explores the potential coordination and cooperation between the networks, as well as recommendations to implement the common strategy of the Networks Twinning project within the Transatlantic MPA Network initiative.

2. Background

2.1. Transatlantic MPA Network Initiative

This section serves as a more specific and detailed background chapter to contextualize this thesis in the framework of the Transatlantic MPA Network initiative. In this way, it provides information regarding the sub-projects, their objectives and the organizations involved within the sub-project, which is related with this study.

2.1.1. Twinning Projects

The Transatlantic MPA Network is composed by three twinning projects related to different areas and with distinct approaches that have in common the aim to build partnerships between managers of MPAs. A summary of the different sub-projects is described below:

- **"Resilience Twinning Project"**: This sub-project aims to create and build up cooperative efforts among MPAs around the Atlantic to strengthen resilience of coastal and marine areas, as well as their communities. Accordingly, an exploration of different strategies and approaches on the MPAs management is conducted to observe mechanisms used to face alterations caused by the global warming, accelerated population densification and increase of the exploitation and impacts of the resources. Five MPAs from different countries within the Atlantic region are involved in this twinning project to research on these issues and record the results from the actions applied to overcome them, aiming to improve and support management planning of MPAs on these topics in the future (Resilience-Transatlantic, n.d).
- **"Marine Mammals Twinning Project"**: The purpose of this subproject is to improve and promote whales' protection and knowledge within the Atlantic. In this regard, it aims to develop cooperation and communication among institutions responsible of biological key marine areas for the cetaceans within the region, to establish a collaborative research, monitoring and outreach programmes. To achieve this goal, information exchange on scientific data, practical experiences and management action will be transferred among managers, experts and other practitioners to develop whale protection methods within the MPAs. Moreover, it seeks to establish a coordinated

research and monitoring programs as well as educational activities involving the communities (Marine mammals-Transatlantic, n.d.).

- **"Networks Twinning Project"**: The objective of this sub-project is to enhance and strengthen cooperation between the different regional networks of MPA managers within the Atlantic area. Accordingly, it aims to recognize relevant actions that networks develop to improve MPA management effectiveness in their respective region, to define a common strategy, to valorise the collaboration and connection between MPA institutions at transatlantic level and strengthen national and regional MPA networks. Moreover, it aims to expand networking by connecting with other networks of MPA managers or other institutions related to MPAs around the Atlantic which are not linked yet with any regional networks (Networks-Transatlantic, n.d).

2.1.2. Networks Twinning Project: Object of this Thesis

This sub-project, as mentioned previously, aims to empower the regional MPA networks' functionality and support the development of cooperative actions between them to strengthen effective MPAs management around the Atlantic Ocean. In this initiative four main axes of action have been identified within the common strategy of the network's twinning project (official document of the strategy can be found in Appendix 1). A general overview of the main aspects considered within the common strategy and relevant aspects for this study are quoted below:

- **"Sharing information, knowledge and tools"**: The objective of this action is to spread, share and make available the management tools from the different regional MPA networks around the Atlantic to maximize and complement each other while unifying efforts to improve management effectiveness in their MPAs. To achieve this goal, actions will be identified to establish a communication mechanism through virtual platform, newsletter and open channels that will be open and accessible to all MPAs in the region, even the ones not yet associated to any regional network. Moreover, some tools and actions will be developed to support and strengthen MPA managers' capabilities of the networks, such as webinars on key issues of concern for the different institutions, as well as joint activities to monitor climate change and mobile species across the Atlantic. In addition, this axis seeks to promote and support exchange of information and connections with

other actors related to ocean use and management, such as the MPA managers' networks and their practitioners, the scientific community and other stakeholders. Finally, it also aims at updating MPA information at a Transatlantic scale by providing data to the World Database of Protected Areas (WDPA) and contributing to the WCPA-Marine Click to Connect (Common strategy of MPA networks of managers-Transatlantic MPA Network, n.d.; Appendix 1).

- **"Building network capacity"**: This axis aims to explore capacity building actions and opportunities based on the evaluation of the network's needs and expertise as well as a gap analysis. It also aims at unifying efforts by sharing training or learning activities between the regional and national networks for the benefit of MPA managers around the Atlantic. Exchange visits can also be organized to learn from experiences of MPAs, and simultaneously establishing a directory of MPA expert's contacts to contribute to share experience, projects and activities (Common strategy of MPA networks of managers-Transatlantic MPA Network, n.d.; Appendix 1).

- **"Influencing policy"**: The actions developed in this axis will be related to create synergies and alliances between networks by supporting international, regional and national policies in relation with MPA management effectiveness and MPA networking. Moreover, it also aims to explore different options for fundraising and establishing communication between the different institutions. At the same time it aims to promote awareness raising and show the socio-economic values of the MPAs and its social networks. It also aims to serve as a channel to communicate MPA manager's networks messages and strategies at an international level and fora, as well as promote the "Call for Joint Action by MPA networks" (Common strategy of MPA networks of managers-Transatlantic MPA Network, n.d.; Appendix 1). In this call, MPA regional networks within the Atlantic and other national bodies, which are the ones involved in this thesis and introduced in the next section, committed to cooperate to create and establish a transatlantic marine protected areas networking mechanism and to work together to share and maximize resources to enhance MPA management effectiveness at transatlantic scale (Call for Join Action by MPA Networks-Transatlantic, n.d.).

- **"MPA managers' networks financing"**: Axis to work on exploring options for financing and mobilise resources for MPA networking at a Transatlantic scale, identifying new and traditional funds (Common strategy of MPA networks of managers-Transatlantic MPA Network, n.d.; Appendix 1).

As previously mentioned, this study only focuses on the first and second axes of the common strategy of the network's twinning project of the Transatlantic MPA Network.

2.1.3. Networks of MPA managers and other Institutions Involved in the Initiative

The MPA managers' networks involved in this project are MedPAN, CaMPAM, RAMPAO and NAMPAN. Moreover, there are also two national institutions involved in this project, the French Biodiversity Agency and the Ministry Ecological Transition through the Biodiversity Foundation from Spain.

Regional MPA Networks of managers

CaMPAM

CaMPAM it serves as programme which triggers dynamism to foster and enhance management of MPAs and its network within the Caribbean region. This network aims to promote marine biodiversity conservation, minimize impacts in overfishing, promote alternative and sustainable livelihoods and enhance stakeholder collaboration. In this regard, it serves as a platform to mobilize efforts and organize activities to encourage professional capabilities of the MPA practitioners by promoting expansion of knowledge and exchanges of professional experiences within the managers and experts. At the same time, it promotes capacity building and communication among the members and it gives economic support by providing funds to projects which also seek to improve biodiversity conservation and better management of MPAs within the region. For this aim, it is a network to gather MPA managers, administrators, researchers and educators from different governmental and non-governmental institutions and also actors from private sectors related to maritime use to discuss and share information and experiences within the MPA sector. CaMPAM was originated in 1997 under the umbrella of the Caribbean Environment al Program of the UN Environment Programme (UNEP-CEP) and the Specially Protected Area and Wildlife (SPAW) Protocol of the Cartagena Convention. The

executive and leadership and resources team is composed by MPA practitioners, partners and scientist related to marine conservation, and it defines the body which establishes the objectives and procures for guidance, administration and resources availability within the network. The countries involved are the Bahamas, Dominican Republic, Grenada, Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Antigua and Barbuda, Saint Kitts and Nevis (CaMPAM Network and Forum-CaMPAM, n.d.).

MedPAN

MedPAN promotes MPA management effectiveness and healthy marine ecosystems in the Mediterranean through information, experience and expertise sharing and MPA financial support and as a think tank for MPA managers to influence policies and engage with other key stakeholders (About-MedPAN, n.d.). It serves as a platform to connect the different MPA practitioners and other institutions contributing to the marine conservation within this region (The Association-MedPAN, n.d.).

MedPAN is a dedicated organization made of members (MPA managers) and partners (other organizations that contribute to MPA management). Its governance is international with a General Assembly, made of all members and partners, a Board of Directors made of 13 organisations from 6 different European countries and 2 non-European Mediterranean countries, an international Scientific Committee, an Advisory Committee and a Secretariat staff (The Association-MedPAN, n.d.).

Created in 1990 and led for several years by Port-Cros National Park (France), the MedPAN network had periods of activity and dormancy through the 1990s and early 2000s. Network activities were re-launched in 2004 through an EU project led by WWF France. In 2008, upon request from MPA managers, the formalised MedPAN organisation was created under French law, with nine founding members to ensure the sustainability and institutionalisation of the network of Mediterranean MPAs (History-MedPAN, n.d.).

The MedPAN network currently gathers 71 member organisations and 51 official partners from 8 European countries (France, Spain, Italy, Croatia, Slovenia, Greece, Cyprus, Malta) and 12 Mediterranean non-European countries (Albania, Turkey, Morocco, Algeria, Tunisia, Lebanon, Libya, Israel, Egypt, Montenegro, Monaco, Syria) (Members and partners-MedPAN, n.d.). Within these countries there is more than 110 MPAs (Natura

2000 marine sites, national and regional parks, marine parks and reserves, among other designations), which represents over 63% of all the Mediterranean MPAs that are effectively managed. (Mediterranean VKC, n.d.).

The mission of MedPAN is to actively contribute to the achievement of a representative, connected, integrated and effectively managed system of Mediterranean MPAs, through a strong and active networking of MPA managers and other actors at all levels (national, sub-regional, Mediterranean) that increases knowledge and capacities of MPAs while improves awareness, MPA policy implementation and funding (About-MedPAN, n.d.).

MedPAN provides technical support to MPA directly at local level (targeted expertise, capacity-building through sharing experience and trainings, improved knowledge and know-how, small projects) as well as through joint actions, with members and partners, at Mediterranean level. MedPAN also works at national, European, Mediterranean and International level with strategic activities: awareness and communication, policy implementation and funding (About-MedPAN, n.d.).

NAMPAN

NAMPAN is an independent regional marine protected areas network from North America which seeks to improve biodiversity protection and conservation and promote an extensive MPAs network in this region. In this regard, it serves as a platform to connect MPA managers, resource organizations and other experts from Canada, Mexico and United States to strengthen their collaboration and coordinate conservation efforts to solve common issues regarding biodiversity in the ocean. It also serves to support managers to their performance by offering a space of information, new technologies and management strategies exchange among the users and simultaneously promote capacity building in a national, regional and international level (About-NAMPAN, n.d).

NAMPAN was founded in 1999 within the framework of the Commission for the Environmental Cooperation (CEC). Its creation was a response of identifying the necessity of tri-national and transboundary cooperation among the three countries of North America to achieve an efficient management, state and implementation of the MPA networks within this region. This organization operated though CEC to develop projects to elaborate tools to improve management in MPAs of North America as well as to expand marine

environment knowledge, and is nowadays a regional MPA network (About-NAMPAN, n.d). The three governmental institutions involved in NAMPAN are the Canadian department of DFO-MPO Fisheries and Oceans Canada by the Marine Conservation Programs, the Mexican National Commission of Natural Protected Areas (CONANP) by the Special Projects and the National Oceanic and Atmospheric Administration (NOAA) from the United States by the National Marine Protected Areas Centre (MPA Center) (Contact-NAMPAN, n.d.).

RAMPAO

RAMPAO is the MPA managers' network of the Western Africa which aims to establish a network of MPAs which comprise critical habitats and ecosystems essential to ensure biodiversity conservation, restoration of fisheries, and regeneration of habitats with high ecological value. It also serves as a connection between MPA practitioners in the region to foster experience and knowledge sharing, and promote collaboration between MPAs practitioners to face issues of common concern. At the same time, it seeks to enhance the operation and functionality of the MPAs in the region and fortify its advocacy and represent and make visible their interests in an international scale. The countries involved in this MPA manager's network are Gambia, Guinea, Guinea Bissau, Mauritania, Senegal, Cape Verde and Sierra Leone (Organization and Functioning-RAMPAO, n.d.).

RAMPAO was originated in 2007 after five years of the elaboration of the Regional Strategy for MPAs by different actors involved in the sector which projected to establish a MPA network managed collaboratively between institutions to foster sustainable development and natural conservation within the region. Thereafter the politic authorities responsible of the environment, fishing and protected areas of the countries implicated supported this initiative and signed a general policy statement and RAMPAO was established as part of putting in force the regional strategy. In 2010 the network was formally recognized by the countries involved and its institutional development was strengthened (Organization and Functioning-RAMPAO, n.d.).

RAMPAO operates by carrying out meetings each two years in the "General Assembly" where the Chairman and other institutional actions and strategies are elected and decided. This MPA regional network is constituted by different bodies, which are the networks'

chairman, the secretariat, the executive committee and the scientific council (Organization and Functioning-RAMPAO, n.d.).

National MPA Institutions

French Biodiversity Agency

The French Biodiversity Agency is a public institution from the Ministry of the Environment which serve as a support to implement public policies for biodiversity conservation in the French territory, ocean and fresh waters. It aims to enhance environmental management, protection, restoration, education and research, working and involving the different sectors of stakeholders which include from the general public to the socioeconomic actors. This agency is responsible of the Marine Natural Parks and the Agoa Sanctuary of Marine Mammals in the French Antilles management performance, including marine research, monitoring and implement actions within the marine protected areas as well as in all French waters. (In January 2017, the Marine Protected Areas Agency becomes the French Biodiversity Agency-Agence Française pour la Biodiversité, n.d.).

The Marine Protected Areas Agency included in this institution, is involved with the public policies that creates and manages marine protected areas within the maritime waters of France. In this regard, it is responsible of assisting and administrating the MPA Network as well as providing financial and technical resources to the marine parks. Simultaneously, this agency aims to strengthen French negotiations at international level regarding the maritime sector (Assignements-Agence Française pour la Biodiversité, n.d.).

Biodiversity Foundation of Spain

Biodiversity Foundation of Spain is an institution created in 1998 and is part of the Ministry for Ecological Transition from the Spain. Its goal is to protect the natural heritage and its biodiversity at national scale though implementation of internal projects and also by providing financial resources and technical assistance by managing calls for grants to different organizations for this aim. The beneficiaries can be associations, foundations, NGOs, public administrations, media, universities and research centres. This institution has been involved with projects related to the conservation of emblematic and endangered species and it declares and manages protected areas, such as National Parks, Biosphere Reserves and Nature Network 2000. It supports national projects to foster sustainable

economy, responsible consumption, and initiatives with low foot carbon print to promote actions against climate change. This institution has different lines of action: terrestrial biodiversity, coastal and marine biodiversity, climate change and environmental quality, green economy and employment as well as international relations (La Fundación Biodiversidad-Fundación Biodiversidad, n.d.).

2.2. Marine Protected Areas and its Networks: Definition and Importance

According to the IUCN (Protected Areas. About-IUCN, 2015), MPAs are included on the protected area's general concept which is defined as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values". On the other hand, the CBD (COP 7 Decision VII/5-CBD, 2004), has a more specific definition of marine and coastal protected area (MCPA) which is defined as "an area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna, and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings".

MPAs are considered an important legal instrument and a management tool used to safeguarding marine biodiversity, helping to recover species population and improving ecosystems resilience while promoting a sustainable use of marine resources (Hargreaves-Allen et al., 2011). MPAs also sustain ecosystem functions as well as the flux of ecosystem services, and have been implemented around the globe for all these purposes (Gaines et al. 2010). These areas have different functions related to preserve and recover biodiversity including commercial species, habitats and food webs, manage and regulate anthropogenic activities and marine uses, as well as to improve and administer ecosystem services (Halpern, 2014; Liquete et al., 2013). According to Mascia et al. (2010), MPAs have an important role on strengthen the empowerment of communities and improve food security, ensuing in these ways the welfare of livelihoods. MPAs can also trigger to employment creation and increase profits in tourism and fishing sectors (McCook et al., 2010; Pascal, 2014). Considering all these benefits and functions mentioned it seems clear the relevant role of MPAs to conserve marine environment and maintain all the ecosystem services

they provide to humanity. In addition, scientific community declares that MPA networks have a great potential to optimize and maximize ocean preservation (Leenhardt P., et al, 2015), which suggest that more effort should be done to improve their extension, design, management, as well as the collaboration and coordination between different MPA institutions at regional and larger scale. As mentioned in a previous section, the social aspect of MPAs has emerged and developed in the last three decades, possibly due to all these positive aspects and benefits mentioned in ocean conservation. In this regard, organizations addressed to support and connect MPA managers have been established worldwide as reaction of identifying the importance of this networking approach to preserve the oceans and their biodiversity. Along these lines, these networks of MPA managers have been established at national, regional and larger scale. Apart of the institutions before mentioned, other examples of these organizations are Locally-Managed Marine Area Network (LMMA), Tropical East Pacific Marine Corridor (Corredor Marino del Pacífico Este Tropical CMAR), and Protected Area Network Across the Channel Ecosytem (PANACHE), and is also spreading along the Atlantic with organizations such as Forum for the Conservation of the Patagoninan Sea and Areas of Influence. These organizations are a relevant source of knowledge, serving as a platform for exchanging data and experience, as well as a guidance and reference point for MPA managers. In this way, they offer different technical tools for different MPA management tasks and topics which depend on each organization, such as MPA assessments, guidebooks and protocols, regular training and assistance with fellow-up activities, exchange of experiences between the MPA practitioners, among other programs. Moreover, some networks of MPA managers offer financial resources and support, as well as they develop an advocacy function in marine international and other sectors (Davis et al., 2018).

According to Bennet and Dearden (2014), MPA managers' abilities are crucial, relevant as well as decisive to develop appropriate governance, management, and local development within the sites to be able to achieve effective ecological and socio-economic outcomes. Moreover, their study identifies different factors that are determinant for both management efficiency and success in MPAs. Some examples are the existence of appropriate planning process, co-management, Integrated Coastal Zone Management (ICZM), as well as the existence and sufficient cooperative and coordinated networks of organizations supporting MPAs, existence of forums and networking opportunities for building relationships and

sharing learning processes, capacity building activities for the managers, sufficient financial resources, legal regulations, enforcement and surveillance, communication strategy, knowledge and information, among many other factors. Additionally, this study highlights the importance of the development of programs related to outreach, awareness and environmental education, ecological monitoring, stakeholder engagement, alternative livelihoods, monitoring socio-economic outcomes and others. Networks of MPA managers provide to sites' managers technical support to address and improve all these aspects related to the management topics previously mentioned. Considering all above mentioned, it seems clear that the function and services that networks of MPA managers offer to the sites' managers are important in actions and processes that aim to enhance MPA management effectiveness at local, regional and larger scale.

3. Methodology

This master's thesis has three different phases within the research process to identify, define and recommend potential actions of cooperation between the different organizations involved within this study. These different phases are the following (in brackets the sections of this thesis related to the phases are specified as "IG" for the information gathering process, "Q" for the questionnaires and "DR" for discussion and recommendations):

- Phase 1: Exploration of the organizations:
    - Exploring the resources available (IG and Q).
    - Exploring singularities and commonalities (IG and Q).
    - Exploring organizational strengths and weaknesses/difficulties (Q).
    - Exploring expertise and needs (Q).
- Phase 2: Exploration of the potential cooperation based on:
    - Common interests identified (Q).
    - Complementation of their different services/knowledge between organizations based on the characteristics of the organizations from the exploration in phase 1 (IG and Q)
- Phase 3: Define potential actions based on the explorations in the phases 1 and 2 to establish collaboratively between organizations (DR).

To develop these three phases, this study uses two different types of data extraction methods to identify potential and recommended actions for the future implementation of the common strategy between the different regional MPA networks of managers involved in the Networks twinning project, within the Transatlantic MPA Network initiative. Initially, an information gathering process was conducted by reviewing the information provided in the websites of the four networks linked to the project. In this way, a descriptive summary of the technical support was conducted, highlighting the main areas of focus that each one offers to their managers. This first review outlines a start point and extract the information available on internet to be able to determine an overview of each network on their approach on providing support for the MPA practitioners' of each organization. The outcome of this technical support review can be found in the Appendix 2. Thereafter, a qualitative analysis was developed based on the summaries of the four

regional MPA managers' networks involved in the project. In the first step of this process, the technical support from the regional MPA networks of managers was classified between different general fields and exposed in a table. Subsequently, a general qualitative and descriptive comparison between the services of each network was conducted to identify their diversity, as well as the commonalities and singularities of each organization. This first exploration of the information of the organizations available in the websites aims to explore and identify potential aspects to coordinate in a transatlantic scale, as well as recognize interesting fields of collaboration between organizations.

Simultaneously, the thesis applied another methodology for data extraction using a set of questionnaires addressed to the staff of the regional networks of MPA managers and to the other MPA national institutions involved with the Networks Twinning project that is related to this study. The idea of applying questionnaires was agreed with all people from the regional networks of MPA managers and the other national agencies who were present in the meeting of the Transatlantic MPA Network initiative held in November 2018 during the MedPAN regional experience-sharing workshop called "Mediterranean challenges for Marine Protected Areas and Small Scale Fisheries" in Mallorca (Spain). In this way, staff in the secretariat of MedPAN, NAMPAN, CaMPAM, Biodiversity Foundation of Spain and Biodiversity Agency of France, as well as other people related to this initiative including the author of this thesis, discussed different aspects regarding the research approach to apply in this study. In this meeting we identified the necessity to carry out an assessment to determine the resources, capacities and needs of the different regional networks of MPA managers involved in the Transatlantic MPA Network. Accordingly, we agreed that in this study questionnaires will be developed and distributed to the people present at the meeting and also to the RAMPAO staff in order to conduct a first exploration of the potential coordination between organizations, and thus establish a theoretical basis of the key aspects to consider in the implementation of the first and second axis of the common strategy of this initiative. The decision to use this type of data extraction through questionnaires was due to the fact that it was the most convenient and effective method to extract reliable and detailed information, since most of the questions could require previous consultation and revision of internal documentation of the organization before the participants could answer them. Furthermore, it was considered important that the targeted people agreed to use the questionnaires to maximize the chances of their participation in

this collection data process. Moreover, in this meeting we discussed points regarding different interests of the organizations related to collecting data, MPA management topics, databases, among other aspects.

These questionnaires were also applied to other international institutions potentially interested on collaborating or establishing a link with the Networks Twinning initiative. The objective of this data extraction though questionnaires was to corroborate the information gathered in the previous phase of this study, as well as to identify interests, necessities and expertise of each organization to be able to explore real possibilities of establishing an institutional connection between networks. The questionnaires had different purposes depending and according to the institution to which they are addressed, and a model of each questionnaire can be found in Appendix 5, 6 and 7 of this thesis. The organizations were selected according to their implication to the Transatlantic MPA Network initiative. Moreover, others were also contacted for different reasons, including their potential interest in this project, their link to one of the regional MPA networks of managers, their possession of an established MPA network in the organization, as well as for its regional competence and international and political influences. The questionnaires were created based on the data reviewed in the information gathering process previously described. Moreover, in the procedure of designing and elaborating the questionnaires, a feedback was asked to the staff from all the organizations implicated to the Transatlantic MPA Network initiative, which are NAMPAN, MedPAN, CaMPAM, and RAMPAO, as the regional networks of MPA managers; and also the French Biodiversity and Biodiversity Foundation of Spain, as the national agencies related to MPA sector. This participatory process with the organizations while designing the questionnaires aimed to implicate them in the study and consider all their particular ideas and suggestions to be able to create the study as close as possible to their real visions, approaches and necessities. The different organizations to which the questionnaires were addressed are cited below:

- Regional networks of MPA managers: MedPAN, CaMPAM, NAMPAN, and RAMPAO, all implicated in the Transatlantic MPA Network's project.
- National agencies related with MPAs: Biodiversity Foundation of Spain and French Biodiversity Agency, both involved in the Transatlantic MPA Network initiative. Moreover, other national agencies were contacted to ask their participation in this

study due to its potential interest in the project as well as for their link to NAMPAN. This is the case of the MPA Center of NOAA and Parks Canada.

- Other international institutions working with MPAs: Secretariats from OSPAR and HELCOM, the Commissions for the marine environment protection from the North Atlantic and the Baltic oceans consecutively. These institutions were contacted for their potential interest in the project, as well as for their political international competences and influences in a region which is considered within the Transatlantic MPA Network initiative.

Accordingly, the targeted people were working in the secretariat or coordinators of the organizations mentioned above, 10 people in total and some of them were present in the meeting in Mallorca, were contacted by email asking for their will of participation in this study. In addition, consent forms were sent to all staff who participated in the survey to formally request permission to use the information collected in the questionnaires for this study, as well as cite and refer the name of the organizations in relation to their data. The informed consent forms of all the targeted staff in this study can be found in Appendix 8. The method to distribute the questionnaires and other documentation needed, such as the consent form, was entirely online, via email messages to the different staff of all these organizations, and also sending a Word document to be completed for the survey.

Thereafter, a descriptive and qualitative analysis was conducted based on the information extracted from the questionnaires of the different institutions. The data obtained was processed using different methods. Coding was applied in case of the descriptive answers in the questionnaires, assembling the information in different topics. Moreover, a simple statistical data analysis was conducted to show the frequency or a relative frequency of a specific topic or issue in the answers of the questionnaires. In this way, this method was used to both process and visually exposes the information. Thereafter, the data was exposed using tables, graphics and diagrams. A colour code was used to visually express the results, which is the same for all tables in exception of table 1 and table 2. Figure 1 shows the legend of the colour coding used in most of the tables of this study.

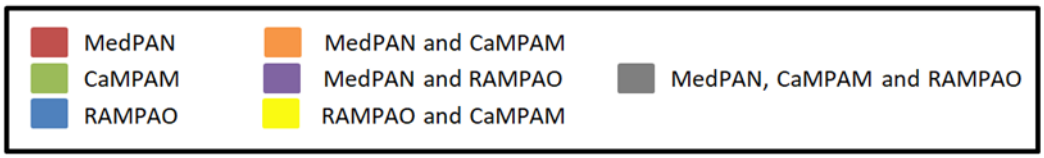


Figure 1: Legend of the colour code used to visually show the results obtained.

Finally, all the information obtained from the two processes was used to explore the potential links between the organizations regarding different aspects. In this way, the discussion of this study seeks to distinguish a way of establishing a connection between networks to complement each other by merging their existing efforts, and therefore enhance their own competences and services. Moreover, it explores potential coordination between the organizations by identifying common management difficulties, topics of interest, areas of expertise, and other key points. All this information was used to establish a framework which aims to become a reference base to highlight recommendations to be considered in the implementation of the "common strategy of MPA networks of managers" for the Network Twinning project.

4. Information gathering

This section describes the technical support offered by the different regional networks of MPA managers involved in the Transatlantic MPA Network initiative. All the information exposed below was extracted from the data and the documents available from the different websites of MedPAN (https://medpan.org/), CaMPAM (http://campam.gcfi.org/), NAMPAN (https://nampan.openchannels.org/), and RAMPAO (http://www.rampao.org/?lang=en). This section presents a general outlook of the assistance that each organization provides to their MPA managers, and also it highlights their main areas of focus. The descriptions below are supported by all the information gathered and summarized in Appendix 2, in which each tool included in the technical support created by the organizations is summarized accurately for a possible consultation, if appropriate and need it.

CAMPAM

The Caribbean regional network of MPA managers has a poor set of online documentation regarding management guidebooks and protocols to support their MPA mangers in their tasks. There are two reports, the manual of the training activities they organize, and the assessment of the management capacity of the coral reefs. However, CaMPAM dedicates considerable effort to organize activities for the MPA managers, in which promotes capacity building. These activities support and improve professional capacities of their users (training of trainers and mentorship program), as well as financial support for projects (small to medium size grants for projects), and promotes networking capacity (sharing of lessons-learnt and networking meetings). Moreover, there is an information support on the website though the CaMPAM Library with scientific articles, studies, protocols, reports, etc., that promotes to increase professional capabilities within the managers of the sites, as well as MPA Database and fact sheets which foster to share information within the network. Environmental education and public outreach is done also by videos. Main topics offered in their services are: management practices, tools and planning; financing, integrated coastal management, international environmental policy, regional assessment of conservation status, submerged cultural resources management, sustainable tourism, fisheries and livelihoods, ecology (spawning aggregations/larval

dispersal) on fish and coral reefs, impact and ecosystem services of tropical coastal and marine ecosystems, biological connectivity; habitats and ecoregions classification, global climate change, Ecosystem Base Management, monitoring protocols to evaluate MPA performance, stakeholder communication and involvement, participative planning, environmental education, and enforcement training. CaMPAM is also involved in projects or initiatives related to support the effective conservation and sustainable use of the marine resources, promote the exchange of information among marine sectors in the Caribbean area, as well as among different MPA manager networks. It also supports the creation of a network of managed marine areas (MMAs) in specific eastern Caribbean islands.

MedPAN

The Mediterranean regional network of MPA managers offers different options for its technical support available through its website, in which there are numerous thematic guidebooks, information and communication platforms, different activities, and projects in which the organization is involved. The documents provided within the website such as management/monitoring protocols and guidebooks to improve professional capacities are dealing with the following topics: evaluation of MPAs management, sustainable financing, surveillance and enforcement, methodology on snorkelling and visitors use monitoring, underwater trails design for management, and environmental education purposes, as well as climate change issues. It also provides information on different subjects, such as ecological benefits, socio economic benefits, protocols to evaluate management effectiveness and to implement Management Plans in MPAs, marine turtle conservation, sustainable small-scale fisheries management, and sustainable tourism. Other scientific articles, journals, studies, and academic documentation are available in the "scientific watch" at a regional and worldwide scale, as well as announcements and articles regarding MedPAN activities, job vacancies and other internal aspects in the "news and agenda". MedPAN also developed, jointly with the SPA/RAC (Mediterranean Regional Sea Convention), a Geographic Information System (GIS) database of the Mediterranean MPAs (MAPAMED) as well as a MedPAN database to gather information on MPA management. Moreover, a variety of activities are offered to the MPA managers to build their capacities, such as experience-sharing events between MPA managers (regional experience sharing workshops and small exchange visits) which promotes sustainable tourism, address pollution, monitoring for management, surveillance and enforcement of

regulation, environmental education, development of alternative livelihoods, turtles conservation and ranger profession. At the same time it offers training workshops on topics related to climate change, sustainable financing, communication and management of small-scale fisheries. MedPAN coordinates a "call for small projects" targeting MPA managers in the Mediterranean and their partners on different topics such as sustainable management of tourism, sustainable management of fisheries, management tools, habitat mapping, environmental education, sustainable funding, and marine turtle's conservation. It also collaborate with large projects together with other institutions, such as the "Mediterranean programme of the MAVA foundation" which promotes sustainable fishing on high trophic level fish and priority species – as well as marine turtles conservation INTERREG MED EU projects such as "FishMPABlue2" that focus on management of small-scale fisheries in MPAs, and "DestiMED" developing sustainable tourism/ecotourism in Mediterranean MPAs. MedPAN was involved in other projects such as "ACT4LITTER project" addressing marine litters in MPAs, "PHAROS4MPAs project" regarding MPA recommendations towards different maritime sectors through the marine special planning (MSP) approach, and "Supporting Implementation of Maritime Spatial Planning in the Western Mediterranean region (SIMWESTMED) project" that supports the implementation of the Directive on Maritime Spatial Planning in few Member States of the Mediterranean.

NAMPAN

The North American regional network of MPA managers' collaborative work with the Commission for the Environment Cooperation (CEC) to assist MPA managers of their region focuses on different tools to better address different aspects within the MPAs and its networks. One of the main areas developed is related to climate change, and therefore the documentation provided are practical guides to design and manage MPAs considering the effects of the global warming. In this way, MPA vulnerability assessment tool and guidelines for scientists, planners and managers to design resilience MPA networks are provided in its website. On the other hand, a set of maps related to a database have been widely developed around North America which they define and delimit 24 marine ecoregions within the region with similar physiographic, biological and oceanographic features. These maps facilitate MPA practitioners to incorporate in their management aspects such as ecosystem integrity protection, biological connectivity and enhance

resilience in coastal and marine environments. NAMPAN also offers to the MPA managers a standardized guidance to evaluate and report the site condition by assessing the present status and trends of different characteristics in the environment such as the habitats, living resources and water quality. Additionally, it provides guidance for the identification of the Marine Priority Conservation Areas and also protocols to evaluate the marine ecological status of the MPAs using standardized scorecards. Furthermore, an extended list of scientific reports, studies and articles are provided in the "literature library" section, and webinars are available in the website to promote and improve professional capacities within the managers of the network. Environmental education and public outreach is done by videos which highlight the crucial role of the MPAs to sustain coastal communities.

RAMPAO

The Western African regional network of MPA managers' technical support is based on documentation and virtual support in its website. It provides project reports, guidebooks, and protocols for management practice of the MPA managers as well as methodological worksheets for communication to the community and internal outreach and sensitization tools. Scientific studies and reports from the region are provided as well as a database with information of MPAs in the area. Capacity building activities for the MPA managers within the network are not specified neither reported in the website, however they are cited in the work plan of 2015 and projected to be developed and organized in the future. These activities are capacity building program for managers, pools of regional expertise, exchange of experience between managers, resident communities, users and administrative managers of MPAs and network assistance or support to the managers' performance. Projects have been done in collaboration with other institutions and they are related to the establishment of MPAs and conservation sites and to strengthen the management effectiveness of MPAs. Others projects are associated to strengthening RAMPAO operational function, sustainable exploitation of small pelagic fish in MPAs in the subregion, and assess management effectiveness of MPAs of the WAMER eco-region using RAPPAM tool. Economic support is mentioned to launch Small Grant Program and twinning projects between MPAs and RAMPAO but not clearly announced neither reported in the website. The main topics are: environmental education, communication methodology and support for managers' performance, guides for monitoring species and socio-economic factors, information guides of species and ecology, information

management of small scale fisheries, guides for governance and developing management plans and business plans, surveillance, gender and equity in protected areas, environmental management for offshore oil exploitation, participatory management, sacred natural sites overview, potential, threats and perspectives; and also a section of, international environmental policy.

5. Results

5.1. Information gathering outcomes

5.1.1. Comparison between the different regional networks of MPA managers' technical support

A simple comparison has been conducted after finalizing the summary of the technical support offered to the MPA managers by the different regional networks of MPA managers considered in the Transatlantic MPA Network initiative. In this contrasting analysis, all services have been reviewed to see the differences in the regional network's approach while developing their function. The different management assistance documentation and the capacity building activities of each network's technical support have been classified in different general topics to observe which areas and issues they provide assistance to their members.

This classification is divided into three sections:

- The first one categorizes the documentation provided considering management practices, tools and planning including guidebooks, protocols, methodologies, and reports.
- The second section considers the capacity building activities developed by the regional networks of MPA managers.
- And finally the third section considers the organization's collaborative projects with other institutions.

All these sections are divided into different fields in which each technical support of the networks is classified. In this way, the sections have the following topics in this categorization:

- In all sections: sustainable fisheries, sustainable financing, participatory management and sustainable tourism.
- In the sections of management practices, tools and planning, and the capacity building activities: environmental education, surveillance and enforcement, climate

change and resilience of coastal marine areas, and ecology including ecosystems and biodiversity, ecosystem services, impacts, research and monitoring.

- In the sections of capacity building activities, and the collaborative projects of the organizations: alternative and sustainable livelihoods, management of species of interest/invasive and marine pollution/litter.

Additionally, there are also other topics used only in a particular section:

- The first section also includes governance, communication and public outreach tools, management of sacred/cultural natural sites, management offshore oil exploitation, gender equity in MPAs, and evaluation of conservation status of MPAs and its networks, their management plans, monitoring methodologies and identification of priority conservation areas.
- The second section has also sustainable and efficient management, planning, as well as the implementation and evaluation of MPAs and its networks.
- And finally, the third section also uses topics related to networking and information exchange, promotion of conservation and MPA/MMAs, management of other maritime sectors (MSP), meetings/forum, evaluation and improvement of management operation and effectiveness of MPAs and its networks, and strengthens regional network's operation.

Appendix 3 details this classification, which specifies the categorization of each technical support within the topics considered.

The following tables 1 and 2 show a comparison of the technical support from the four regional networks of MPA managers according to this classification process.

Table 1: Comparison between the management tools included within the technical support of the different regional networks of MPA managers -RAMPAO, NAMPAN, MedPAN and CaMPAM-. The colouration or not colouration in the boxes shows the existence (grey) or absence (white) of a specific technical support.

NETWORKS' TECHNICAL SUPPORT			CaMPAM	MedPAN	RAMPAO	NAMPAN
MANAGEMENT TOOLS	**MPA Database**	MPA Database / Ecoregion maps				
		Fact sheet				
	Tools to support management of MPAs	Management practices, tools and planning; guidebooks/protocols/ methodologies/reports				
		Evaluation of conservation status of MPAs and its networks, management plans, monitoring methods and identification of priority conservation areas				
		Environmental education				
		Governance				
		Surveillance and enforcement				
		Sustainable fisheries				
		Sustainable financing and business plans				
		Climate change				
		Ecology				
		Sustainable tourism				
		Communication and public/ internal information outreach-tool kit				
		Gender equity in MPAs				
		Management offshore oil exploitation				
		Management sacred/cultural natural sites				
		Participatory management				
	Knowledge support	(Library/Scientific watch/ Scientific Articles-data)				
	Public outreach	Videos				
	Expert group					
	Webinars					
	Newsletter and agenda					

Table 2: Comparison between the capacity building activities included within the technical support of the different regional networks of MPA managers -RAMPAO, NAMPAN, MedPAN and CaMPAM-. The colouration or not colouration in the boxes shows the existence (grey) or absence (white) of a specific technical support. In the boxes from the topics developed in the activities organized by the organizations, the acronyms specify the kind of activity they develop within the topic (T=Training / EEM = Exchange of Experiences between Managers / FR = Financial Resources).

NETWORKS' TECHNICAL SUPPORT			CaMPAM	MedPAN	RAMPAO	NAMPAN
CAPACITY BUILDING ACTIVITIES	**Training**	Training				
		Follow-up program				
	Exchange of experiences between managers	Regional meetings for sharing experiences				
		Exchange visits				
	Financial resources	Small to medium size grant				
	Topics developed in the trainings, exchange of experiences between managers and small-medium size grant	Sustainable and efficient management, planning, implementation and evaluation of MPAs and its networks	T/EEM/ FR	T/FR		
		Sustainable financing	T/FR	T/FR		
		Participative management and stakeholders/community involvement	T/EEM			
		Sustainable tourism	T/EEM	EEM		
		Alternative and sustainable livelihoods	T/EEM/ FR	EEM		
		Surveillance and enforcement	EEM	EEM		
		Sustainable fisheries	EEM/FR	T/EEM/ FR		
		Ecology (ecosystems)	T/EEM	EEM		
		Climate change and resilience	FR	T/FR		
		Environmental education	T/EEM	EEM		
		Management of species of interest or invasive	EEM/FR	EEM		
		Marine pollution		EEM		
	Network assistance to MPAs managers					
	Collaboration with other initiatives/ project/ events	Networking and information exchange				
		Promoting conservation and MPA/MMAs				
		Marine litter				
		Sustainable tourism				
		Sustainable fisheries				
		Sustainable and alternative livelihoods				
		Management of other maritime sectors (MSP)				
		Meetings/Forum				
		Strengthen management effectiveness of MPAs and its networks				
		Protection of species or habitats of interest				
		Sustainable financing				
		Climate change and resilience				
		Strengthening regional network's operation				
		Co-management and stakeholder/ community involvement				

In a general overview, the results extracted from the tables above suggest that there are analogies between the different areas of focus and services that the regional networks of MPA managers provide to their members. However, each organization has different approach to carry out their function, and therefore the services are developed differently regarding the way to assist the MPA managers with these topics, and also their degree of development. The following sections analyse in a descriptive manner the results and explore in more detail the commonalities among networks, as well as the singularities of each organization.

5.1.2. Analysis of the Comparison's Results

Similarities between the regional networks of MPA managers

In a general overview, there are similarities between the technical supports offered by all the networks involved in the Network Twinning project, but with different approaches. This section specifies more in detail the similarities between the regional networks of MPA managers.

- **Communalities between the four regional networks of MPA managers:**
    - The services provided in all networks are the "newsletter and agenda", which announces relevant information and events related to conservation, MPAs and their networks, and the "library" section which provides scientific articles, reports and studies relevant for MPAs and marine conservation.
    - MPA Database which is offered by all the networks but in different forms. CaMPAM and RAMPAO offer a set of "fact sheets" of different MPAs members of their networks, which they describe and inform about different characteristics of the sites related with ecological, management and legal framework aspects. On the other side, NAMPAN provides a more sophisticated and complex database though the ecoregion maps. MedPAN offers a very detailed GIS database with information on MPA management effort. However, a more detailed analysis of the databases and the library should be conducted to know the information they provide, their organization, and also the degree of development of the services to be able

to compare them and define a potential compatibility between them. This further comparison between the different networks' MPA databases is currently difficult because MedPAN and CaMPAM do not have them available in their websites, as they are in the process of creation and development.

- Different documentation of management practices, tools and planning in form of guidebooks, protocols, reports and methodologies are provided in all networks' website. However, each organization offers different support regarding specific topics and sectors according to the necessities and issues considering the environmental, social and economic context of the region. A common documentation presents in all networks is the one provided to support tasks related to the evaluation of the conservation status of MPAs and its networks, management plans, monitoring methods and identification of priority conservation areas. Despite of this one common theme mentioned above, no other topics are shared between all networks.

- **Commonalities between three regional networks of MPA managers:**
  - CaMPAM, RAMPAO and NAMPAN: These three organizations share the section for public outreach through videos.
  - MedPAN, CaMPAM and RAMPAO: These three regional networks of MPA managers are involved in different projects and initiatives to face different challenges within the MPAs. In this regard, the three networks participate in projects to strengthen management effectiveness of MPAs and its networks.

- **Commonalities between two regional networks of MPA managers**: There are a significant number of areas shared by two of these organizations.
  - Between MedPAN and NAMPAN: Both organizations provide guidebooks related to climate change.
  - Between MedPAN and RAMPAO: The two networks offer guidebooks in environmental education, sustainable financing and business plans, as well as surveillance and enforcement. Moreover, they are involved in projects to foster sustainable fisheries.

- Between RAMPAO and CaMPAM: These two regional networks of MPA managers provide protocols, guidance and informative reports related to marine and coastal ecology and participatory management. Furthermore, they contribute with initiatives related to promoting conservation.
- Between CaMPAM and MedPAN: These two organizations dedicate important efforts to organize different activities and events to promote capacity building and improve the professional capabilities of the MPA managers within their network. In this way, they offer training activities and workshops (trainings, follow-ups and exchange of experiences), as well as financial support and technical assistance (small grants). A large amount of topics developed in these activities are shared by MedPAN and CaMPAM. In this way, both organizations provide training and financial resources in topics related to sustainable financing and sustainable and efficient management, planning, implementation and evaluation of MPAs and its networks. On the other hand, these two organizations offer exchange of experiences between managers in sustainable tourism, alternative and sustainable livelihoods, surveillance and enforcement, ecology, environmental education and management of species of interest or invasive. Moreover, they organize exchange of experiences between managers and financial resources in sustainable fisheries and also both organizations offer financial resources in actions to enhance coastal and marine resilience towards climate change.

Despite all networks do not provide documentation to guide in all the key areas related to MPA management, other of their services can offset this providing other type of support in a large variety of topics and with different approaches. In this way, the support not offered in some networks in certain areas can be compensated and complemented though other sections, such as external documentation (in case of MedPAN), and the bibliographic databased ("library", "scientific watch" and "scientific articles-data" on the website), the last one present in all networks. Moreover, the virtual community networking that is offered by some organizations can be offset in other ways, such as the activities organized for capacity building (exchange experiences, meetings, trainings, and other events).

However, the topics provided in these sections have not been revised due to its large amount of documents, and therefore this compensation cannot be confirmed.

This is a generic comparison after an overview of the different networks, and therefore a more extended and detail exploration of all the services and documentation provided for each network to their users should be conducted to provide more specific and concise results.

Singularities of each regional network of MPA managers

MedPAN

The Mediterranean network offers a quite holistic service to their users. The website provides documentation to improve knowledge and professional capabilities of the MPA managers, and thus foster to enhancements within the management in the Mediterranean MPAs. Concurrently, also it organizes activities and events to promote network capacity building and serve as a sharing platform. Its singularities are the guidebooks related to sustainable tourism offering guides for underwater trails, snorkel surveys and visitor's use monitoring. Despite the network's documentation do not provide information of all key areas within the management of the MPAs, they do have a section of external reports which offer assistance and knowledge in socio-economic benefits, sustainable tourism, marine turtles, evaluation of management plans, sustainable financing, sustainable fishing and ecological benefits. The "Status report of Mediterranean MPAs", jointly developed by MedPAN and SPA/RAC, is another tool that only MedPAN develops, which is presented every four years and evaluates the general status of the MPA ecological network in the Mediterranean. This organization also develops activities related to certain topics that are not offered by the other networks, such as workshops on marine pollution and protection of specific species of interest (marine turtles). Moreover, it provides trainings for sustainable fisheries, as well as in climate change and resilience. Another particularity is the amount and diversity of projects this association is involved in comparison with the other networks. In this regard, it participates with initiatives to support networking and information exchange, as well as projects related to management of different topics such as marine litter, sustainable tourism, protection of species of interest (marine turtles), management of other maritime sectors though MSP, co-management and resilience of coastal and marine areas. It also organizes the Mediterranean MPA Forum, with several

key Mediterranean partners, to connect different groups of stakeholders (managers, civil society, private stakeholders, scientists, decision-makers, public institutions, donors…) involved and that affect the marine environment in which they propose actions and solutions to overcome or improve the situation of the different challenges faced by MPAs in the Mediterranean.

CaMPAM

The Caribbean network provides just one extended and complex manual as a guidebook to assist the performance of their MPA managers and this network mainly focuses their efforts and operation to offer a variety of activities to their members. In their capacity building tools there are a few particularities. CaMPAM organizes training in sustainable tourism, ecology, environmental education, in alternative and sustainable livelihoods, and in participative management and stakeholder/community involvement. In this last topic also offer exchange of experience between managers. Moreover, financial resources are offered in topics related to management of species of interest or invasive, as well as in alternative and sustainable livelihoods. Other services are the “expert group” which assists the MPAs managers and projects they develop, and also the “electronic forum or email list” that serves as a virtual platform to all MPA practitioners, scientists and other experts where they can interact, discuss different issues and ask advice from peers and experts. CaMPAM is involved in initiatives that supports sustainable financing which is a topic not developed in the other networks' projects.

NAMPAN

The North American network mainly focuses their work on offering technical support in a virtual form by different documentation though its website. No person-to-person experience is organized other than general events such as conferences. Its services on the website are reports and tools for management performance which are focused on assess MPA vulnerability, identification of priority conservation areas (PCAs) and a MPA condition/status report. Its main focus area is related to management support and specific tools to address issues linked to climate change within MPAs. Its singularities of what they offer are the way of presentation of its database by the Ecoregion maps, and the webinars organized to promote professional capability to the MPA managers within the North American region.

RAMPAO

The West-African network offers an extensive amount of documentation to improve MPA management and marine environmental knowledge to their MPA managers of its region. Despite of the information in the "Work Plan of 2015" which informs of several activities for their members, no documentation associated to these activities have been found on their website, and therefore no development and continuation in time of these activities can be confirmed. Singularities of RAMPAO are the guidebooks provided related to the topics of governance, sustainable fisheries, gender equity in MPAs, management for offshore oil exploitation, and management of sacred or cultural natural sites. It also has a section which provides a set of worksheets which serves as a tool for communication within the association as well as to the general public information outreach (communication tool kit). This network developed a project related to strengthen their institutional operation and function, which no other organization has developed.

5.2. Questionnaires' Outcomes

This section exposes the research based on gathering inter-institutional information from the regional networks of MPA managers and national institutions involved in the Transatlantic MPA Network initiative, as well as other targeted organizations interesting for this study. This part was conducted by sending questionnaires to the coordinators and other responsible staff from the different organizations. The aim of the questionnaires was to collect specific information of the organizations. Appendix 4 specifies the different purposes or objectives on which they were based and used when developing the questionnaires.

The information found by the set of questionnaires is described below and the results are presented and compared between the different organizations within the same range of scale and function. Accordingly, three differentiate sections of results are exposed, considering separately the regional networks of MPA managers, national agencies related to MPAs, and the international organizations.

5.2.1. Questionnaires to the Regional Networks of MPA managers

From the four questionnaires sent to the coordinators of the MPA regional networks of MPA managers linked to the Transatlantic MPA Network initiative, which include MedPAN, CaMPAM, NAMPAN and RAMPAO, three were received to be analysed for this study. NAMPAN could not complete the questionnaire due to its current reorganization that made not possible the consultations with MPAs' institutions between the three countries involved in the organization (Canada, Mexico and United States). For that reason, NAMPAN was not in the position to facilitate the information asked on behalf of the three nations.

Feedback was asked to all the targeted staff from the organizations in the process of elaboration of the questionnaire, and comments from MedPAN and CaMPAM were considered and incorporated into the survey before sending the final version to be responded.

The information collected from CaMPAM, RAMPAO and MedPAN is presented simultaneously and divided into sections considering the organizations services' provided, their challenges and strengths, as well as its potential coordination at transatlantic scale. At the same time, these three main subparts are organized by topics, and in some of them the information is itemised and described by commonalities between institutions and also for its unique features.

5.2.1.1. SERVICES PROVIDED

The information extracted in the examination of the institutional functions, services and actions of each regional network of MPA managers is presented below:

Technical support

Table 3 exposes the results according to the data facilitated by the regional networks of MPA managers' staff regarding the technical support tools they provide to their members.

Table 3: Technical support provided by the different regional networks of MPA managers - CaMPAM, MedPAN and RAMPAO- to their MPA managers members.

Management support tools			
Library			
Report of the status of the MPAs and the MPA network			
Protocols and guidebooks	Ecological benefits		
	Management plans		
	Management of endangered or species of interest		
	Socio-economic benefits		
	Sustainable financing		
	Sustainable fishing		
	Sustainable tourism		
	Planning MPA in Climate change		
	MPA Vulnerability assessment tool		
	Design resilient MPA		
	Marine priority conservation areas		
	Guide of scorecards for MPAs		
	Methodological worksheets of communication, community outreach and sensitization tools		
	Environmental education		
	Monitoring guides for…	Species	
		Ecosystems	
		Socio-economic	
		Climate change	
	Governance		
	Business plans development for MPAs		
	Surveillance		
	Gender Equity		
	Management of sacred/cultural natural sites		
	Marine exploitation activities	Oil and gas	
		Marine cables	
		Renewable energies	
		Aquaculture	
	Marine Spatial Planning		

MedPAN | MedPAN and RAMPAO | RAMPAO | MedPAN, CaMPAM and RAMPAO

- Common in the three networks of MPA managers: Only one commonality between the organizations exists regarding the technical support, which is the library.
- Common in two networks of MPA managers: MedPAN and RAMPAO share numerous management support tools which they provide to their MPA managers, such as guidebooks and protocols to develop activities regarding MPA management and business plans, socio-economic benefits, surveillance, sustainable financing, fishing and tourism. Moreover, these both regional networks of MPA managers provide monitoring guides for several topics such as in different species, socio-economic aspects, as well as climate change issues.
- Exclusive of one network of MPA managers: MedPAN provides also a report, jointly produced with the SPA/RAC of UN Environment/MAP of the overall status of the

MPAs in the Mediterranean, as well as methodological worksheets of communication, community outreach and awareness raising tools.

RAMPAO facilitates guides related to ecological benefits, planning MPA in climate change, MPA vulnerability assessment tool, marine priority conservation areas, environmental education, governance and management of sacred and cultural natural sites. It also provides guides to monitor different ecosystems and to manage different activities of marine exploitation within the aquaculture and renewable energies.

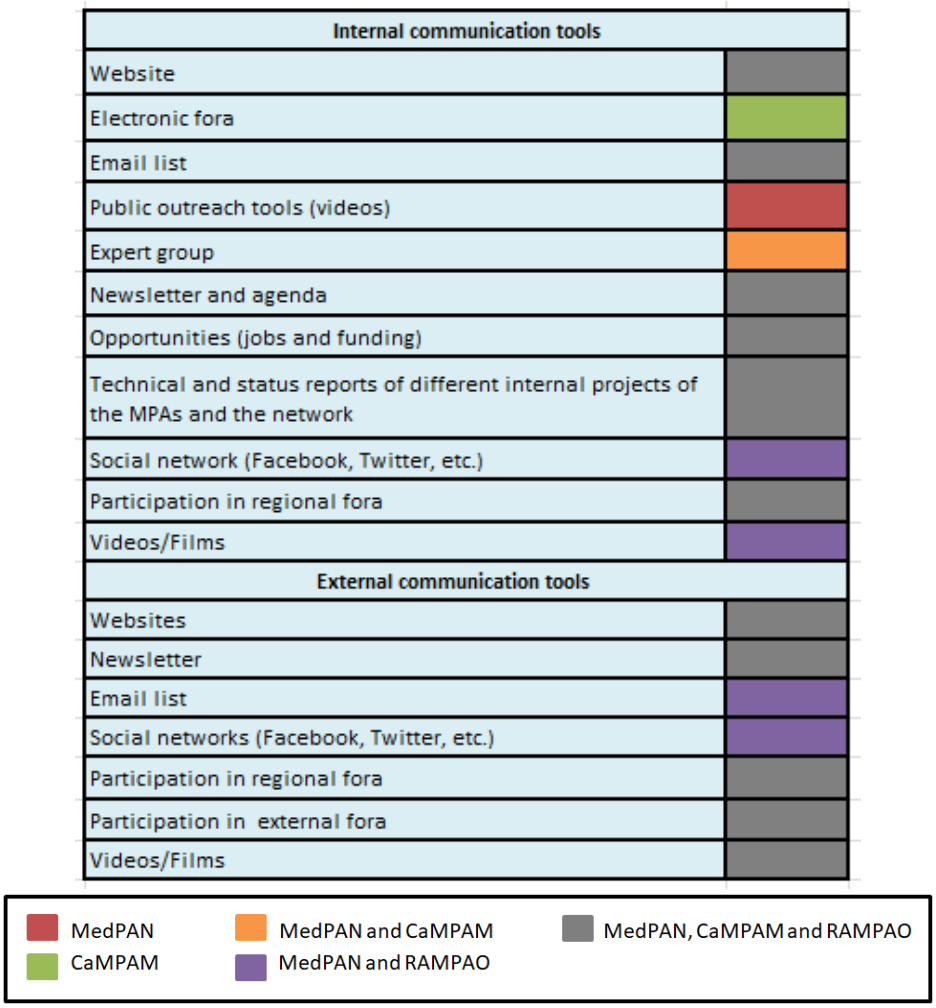
On the other hand, CaMPAM specified in its response that the only documentation facilitated to the members of its organization is the "Manual: Training of trainers on marine protected areas management in the Caribbean", and added that their organization does not produce other documentation but it publishes reports to spread knowledge through CaMPAM List and other vehicles.

This table also shows topics which none of these regional networks of MPA managers have developed management support tools to provide to their members. The topics are related to the management of specific topics, such as endangered species or the ones of interest, marine exploitation activities of oil and gas and marine cables, as well as other guidelines to design resilient MPA and to assess its ecological status though scorecards, as well as other procedures such as MSP.

Communication tools

Table 4 exposes a comparison between the different communication tools the regional networks of MPA managers use within their organizations.

Table 4: Internal and external communication tools from the regional networks of MPA managers CaMPAM, MedPAN and RAMPAO.

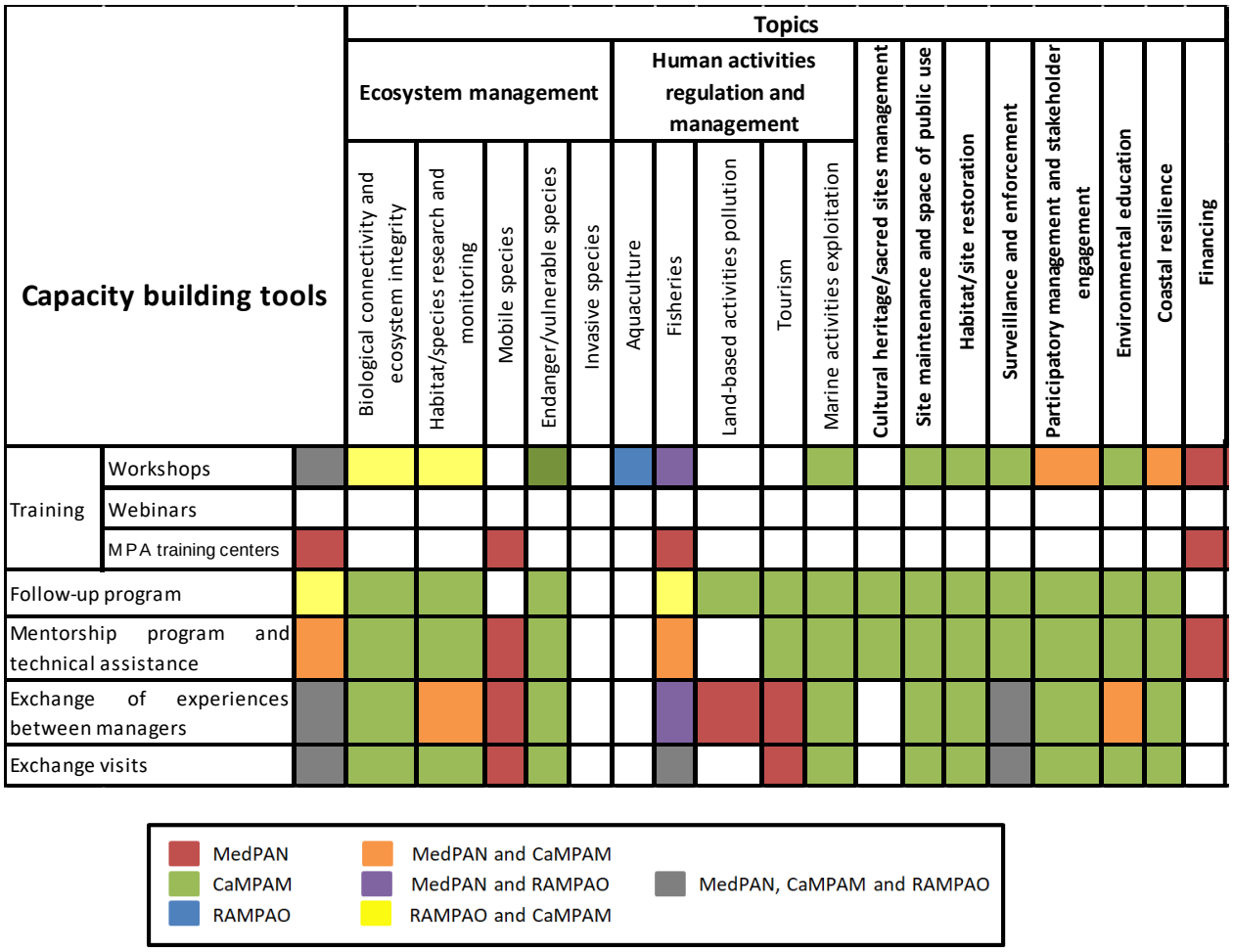


- Common in the three networks of MPA managers: In accordance with the data facilitated by the networks, the three of them apply most of the internal and external communication tools considered. In this regard, the three networks use the website, the email list, the newsletter and agenda, the opportunities section regarding job vacancies and projects funding, technical and status reports of different internal projects from the MPAs and the networks, as well as the participation in regional fora.
- Common in two networks of MPA managers: MedPAN and RAMPAO also use social network and videos or films and email list in the external communication tools, and MedPAN and CaMPAM have developed expert groups within the internal communication tools.
- Exclusive of one network of MPA managers: By their own side, CaMPAM has electronic fora, and MedPAN elaborated videos as a public outreach tools within the internal communication tools.

Capacity building

The regional networks of MPA managers apply different tools to promote capacity building among their members, which are shown in table 5.

Table 5: Capacity building tools provided to the MPA managers within the regional networks of MPA managers -MedPAN, CaMPAM and RAMPAO-.



- <u>Common in the three networks of MPA managers:</u> There are different activities which are organized by the three organizations, such as exchange of experiences between managers, exchange visits and workshops within the training activities.

  Regarding the topics of these capacity building tools, all networks organize exchange visits related to fisheries and also to surveillance and enforcement, this last topic also developed as exchange of experiences between managers.
- <u>Common in two networks of MPA managers</u>: MedPAN and CaMPAM are offering mentorships programs and technical assistance for the network's members, and

CaMPAM and RAMPAO develop follow-up programs to the projects that their support.

Specifying the topics, fishery sector is considered in workshops and exchange of experiences between managers in MedPAN and RAMPAO. Moreover, this topic is developed in mentorship programs and technical assistance in MedPAN and CaMPAM, as well as in RAMPAO and CaMPAM in their follow-up programs. CaMPAM and RAMPAO offer workshops related to biological connectivity and ecosystem integrity, as well as habitat or species research and monitoring. On the other hand, MedPAN and CaMPAM arrange workshops linked to coastal resilience as well as for participatory management and stakeholder engagement, and both also coordinate exchanges of experiences between managers related to environmental education and habitat or species research and monitoring.

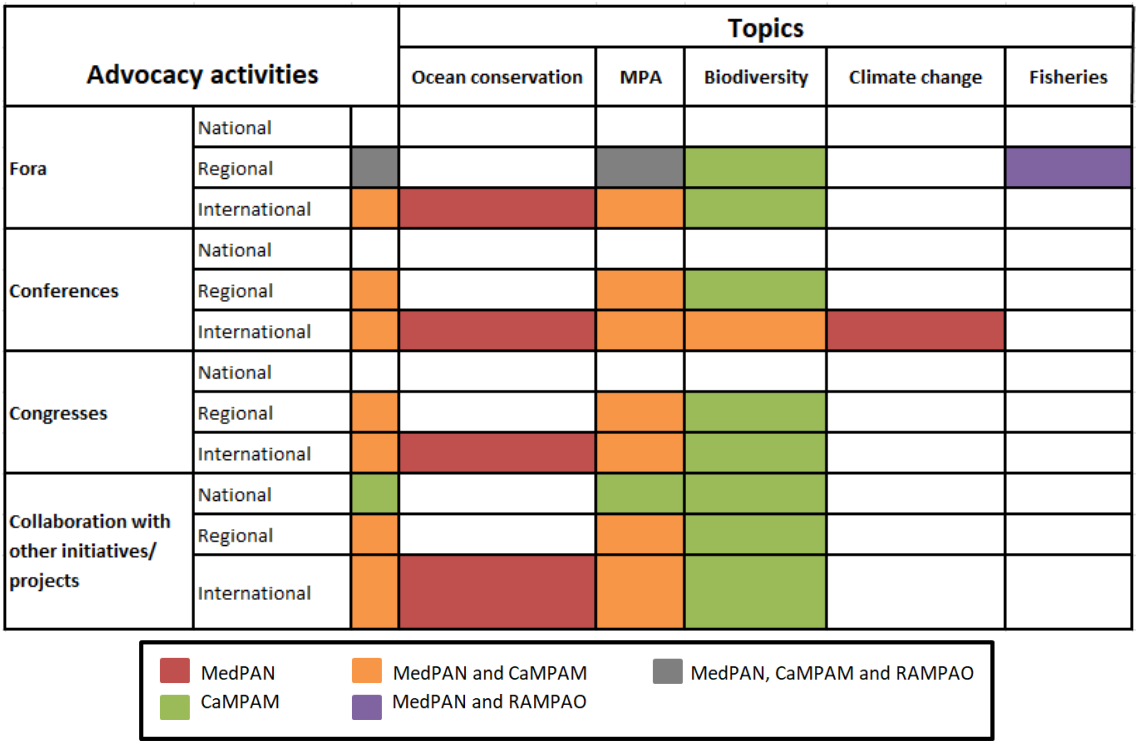
- Exclusive of one network of MPA managers: MedPAN also aims to develop MPA training centres with recurrent and operational trainings.

  Considering the topics, CaMPAM and MedPAN develop tourism and land based activities pollution but in different activities; while CaMPAM does develop follow-up programs as well as mentorship program and technical assistance related to tourism, MedPAN do otherwise exchanges of experiences and exchange visits related to that topic. CaMPAM does follow-up programs for land-based activities pollution, and on the contrary MedPAN coordinate exchanges of experiences between managers. In addition, MedPAN coordinates activities related to mobile species and financing, and on the other hand CaMPAM organizes activities linked to endangered or vulnerable species, marine activities exploitation, cultural heritage sites management, site maintenance and space of public use and habitat/site restoration.

Advocacy activities

Each regional network of MPA managers implements different advocacy activities to represent their members, which are shown in table 6.

Table 6: Advocacy activities of the regional networks of MPA managers -MedPAN, CaMPAM and RAMPAO-.



- Common in the three networks of MPA managers: The three organizations are involved in regional fora related to MPAs.
- Common in two networks of MPA managers: MedPAN and RAMPAO are linked to regional fora in fisheries. MedPAN and CaMPAM are engaged in international fora, and regional and international conferences, congresses and collaborating in projects on MPAs, as well as in biodiversity at international conferences.
- Exclusive of one network of MPA managers: MedPAN is also implicated in ocean conservation in the entire international advocacy activities considered before, and with climate change at international conferences. On the other side, CaMPAM is committed with regional and international fora, conferences, congresses and collaborates with projects linked to biodiversity.

Financial support to MPAs

Regarding the financial support offered to the members of the regional networks of MPA managers, only MedPAN and CaMPAM provide this service while RAMPAO do not. The characteristics of this tool vary between the two organizations. MedPAN has a fixed structure of the service in which it organizes two calls every three years in which it supports from ten to twenty small projects per call. Each grant provides around 20.000

euros in average, being 10.000 for projects continuation and 40.000 euros for multi-MPAs projects. The donors are from Europe including the French Facility for the Global Environment (FFEM), MAVA Foundation, EU and the Prince Albert II of Monaco Foundation.

On the other side, CaMPAM has a more opportunistic service that can range between zero and two calls (not specifying the amount of time considered), in which each call finances from four to eight projects that mainly are restricted to a certain countries because of donors' requirements. Each grant provides from 5.000 to 220.000 US dollars and the donor's institutions are mainly from Europe (Italian, German and French Cooperation Agencies and other private foundations).

Databases

MedPAN and CaMPAM have elaborated a mechanism of data collection or database within their organizations, and the ambits developed are presented in the Figure 1 exposed below.

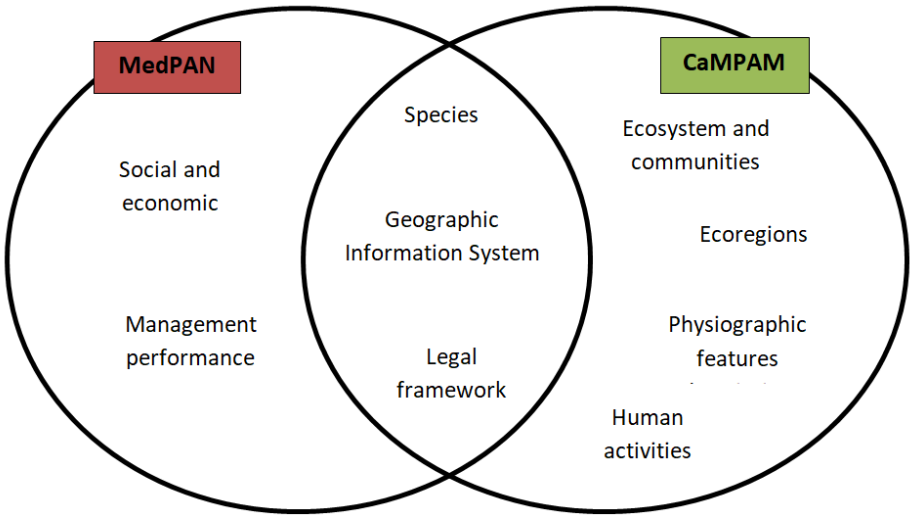


Figure 2: Diagram of the particular and commune topics developed in a database by MedPAN and CaMPAM.

- Common in two networks of MPA managers: Both regional networks develop a database with information linked to different species, legal framework and GIS.
- Exclusive of one network of MPA managers: MedPAN elaborates a database related to social and economic information as well as management effort evaluation of their MPAs.

The programs and format used to develop these databases are of a five types: Limesurvey, Excel, questionnaires, GIS layers and also a list of species. Limesurvey is used in all the databases except in GIS, and Excel and questionnaires are also used in many of the mechanisms. CaMPAM develops other databases with information related to ecosystems and communities, ecoregions, human activities and physiographic features, which the format used is not specified. RAMPAO did not provide any information regarding this topic.

Information of specific conservation purposes of MPAs

Concerning types of MPAs with specific conservation purposes, CaMPAM and MedPAN have within their networks, some sites designated to protect specific migratory species with high ecologic value; on the contrary RAMPAO does not have this type of sites. MedPAN and CaMPAM have some sites within their networks designated to protect different species of cetaceans and marine turtles. MedPAN also has MPA sites to protect the monk seal (*Monachus monachus*) with several of them in Greece and Turkey focused on its protection. The CaMPAM's sites targeting cetaceans which are specified in the questionnaire are Agoa Sanctuary in the French Antilles, Yarari marine mammal and shark sanctuary in the Dutch Caribbean islands and Natividad Bank in Dominican Republic. The measures to protect the cetaceans are mainly species-oriented and the management actions include no-take and no-touch zones. In this regard, MedPAN has Pelagos Sanctuary, a marine area stablished by agreement between France, Italy and Monaco. Concerning marine turtles, CaMPAM have five species (not being specified) which are protected by national legislation in different Caribbean countries, and they cannot be harvested (neither eggs nor adults). MedPAN has only one marine turtle which is the loggerhead turtle (*Caretta caretta*), and Zakynthos National Park in Greece is a special site to protect this species as well as the monk seal. The Mediterranean organization has a working group focused on the management and protection of this marine turtle species and also guidelines on monitoring, protocols and a cooperation charter to share data that have been developed in this regard.

None of the organizations have developed a coordinated system or actions to improve coastal resilience management at regional scale.

5.2.1.2. CHALLENGES AND STRENGHTS

This study conducted an exploration of the relevant aspects to consider while developing the common strategy of MPA Networks Twinning project. In this way, different information related to MPA management difficulties, networks' technical support to assist MPA managers, aspects of improvement and its limitations, weakness and strengths as well as areas of expertise of each regional network of MPA managers were considered. This research aimed to identify and highlight the potential of collaboration and complementation among the regional networks of MPA managers.

Identification of management difficulties

The staffs of the three regional networks of MPA managers provided information of their perception of the difficulties and challenges faced by the sites in their region regarding MPA management tasks they develop in their areas. It is important to clarify that this information has not been supported by an internal previous study regarding the management difficulties of the MPA sites, and therefore is the opinion of the coordinators of the regional networks of MPA managers. Despite the questionnaire was asking about any study or evaluation to support the information provided of this topic, none of the networks specified any background data to support it. In this way, the staff of the organizations categorized different MPA management activities according to their perception of the level of difficulty that MPA managers experience while managing their sites in their region. According to that, a set of MPA management actions were classified by high, medium, low or no existent regarding difficulty, and also considering the option of none existing data to support this information. The different MPA management activities were classified within three general types of actions considering ecosystem, human activities regulation and other management performances. This categorization was made in order to distinguish and identify the areas that have more degree of difficulty within the MPAs' management within in the different regional networks. The activities considered within the ecosystem management are related to biological connectivity and ecosystem integrity, ecological research and monitoring, endangered/vulnerable species, mobile species, invasive species and habitat/site restoration. Regarding human activities regulation and management, the activities are subdivided by aquaculture and mariculture, fisheries (small and large scale), land-based activities (emissions and inputs from agriculture, forestry, industry and urban waste), tourism and recreational activities (scuba-

diving, human trampling, boat anchoring, habitat loss for touristic facilities expansion in the coast, recreational fisheries and sustainable tourism in general), military activities, placement and operation of submarine cables and pipelines, oil and gas prospections and other resources, and maritime transport. The actions considered in other management activities are related to socio-economic evaluation, cultural heritage/archaeological/sacred sites management, site maintenance and space of public use, surveillance and enforcement (ranger profession), stakeholder engagement, environmental education, communication, climate change, coastal resilience actions, planning, Integrated Coastal Zone Management (ICZM), MSP, and financing.

In this subsection, the same information is presented in different range of detail. First it shows the overall perspective of the activities' classification considering only the different degrees of difficulty, followed by the representation of the data divided by three general types of MPA management activities, and finally detailing the classification of each activity considered.

Figure 2 shows the results in an overall perspective of the classification of the activities within the different degrees of difficulty, expressed by percentage as well as the specific number of activities considered.

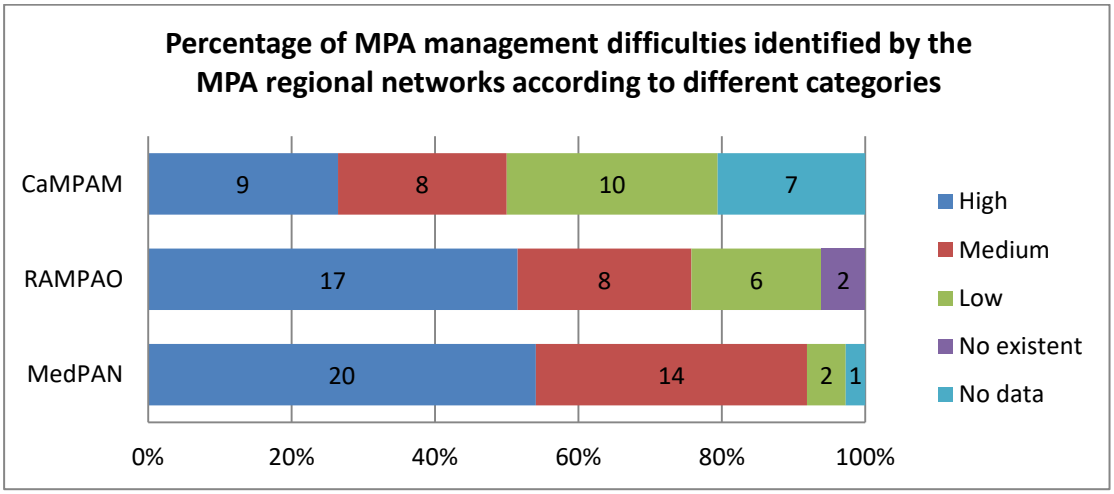


Figure 3: Percentage of the MPA management activities classified by different degree of difficulty for the regional MPA networks staff. The numbers in the columns specify the number of management activities classified within the specific category.

As shown in the previous graph, two of the MPA regional networks classified a significant number of the activities as high difficulty, MedPAN with percentage of 54.05% and RAMPAO with 51.51%, while CaMPAM considers as high difficulty a lower percentage

of these activities with a 26.47% of them. MedPAN categorized as medium 37.84% of the activities, higher than the other two networks, which have 24.24% in RAMPAO and 23.53 in CaMPAM. Regarding low difficulty, CaMPAM has the highest percentage with 29.41%, followed by RAMPAO with 18.18% and MedPAN with 5.40% of the management actions. Only RAMPAO has labelled 6.06% with none existent difficulty, and the other two organizations have no data regarding some of the information asked, with a considerable percentage in CaMPAM (20.59%), and very low in MedPAN (2.70%).

Figure 3 exposes the percentages and the specific number of activities classified within the different categories of degree of difficulty and also considering the three general types of MPA management activities.

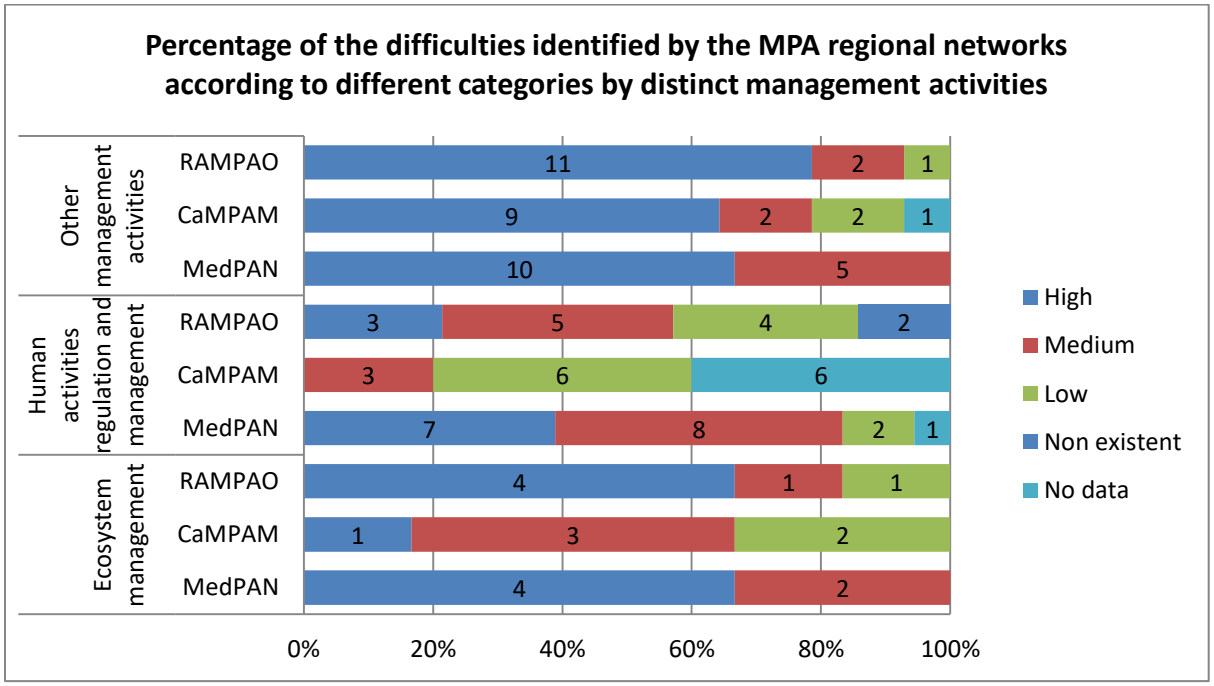


Figure 4: Percentages of MPA management activities classified in different degrees of difficulty by the regional MPA networks MedPAN, CaMPAM and RAMPAO. The numbers in the columns specify the number of management activities classified within the specific category.

According to the above figure, the staffs of the three organizations agree that many MPA management actions within the group of other management activities are considered as high difficulty, with percentages of 78.57% in RAMPAO, 66.67% in MedPAN and 64.29% in CaMPAM. MedPAN and RAMPAO also have classified in this category many of the activities within the ecosystem management group, both with a percentage of 66.67%. Regarding the human activities regulation and management group, the

percentages within this classification are much lower, with 38.89% in MedPAN, 21.43% in RAMPAO and 0% in CaMPAM. The percentages obtained within the category of medium difficulty are quite different among groups. CaMPAM has the highest percentage within this category of 50% in the ecosystem management activities, followed by MedPAN with 44.45% in human activities regulation and management, and RAMPAO with 35.71% also in this last group. MedPAN has classified as medium difficulty 33.34% of the activities within the ecosystem management as well as in the other management activities. Regarding lower difficulty, CaMPAM is the regional network which has the highest percentage within this category, with 40% within human activities regulation and management and 33.34% in ecosystem management. The rest of the percentages from the other networks are lower than 30%. CaMPAM also determined that has no data of a significant number of the activities within the human activities regulation and management, with a percentage of 40%.

The results are presented in more detail in table 7, in which the activities and the category of difficultness classified by the staff of the three regional MPA networks are specified.

Table 7: Classification of the MPA management activities according to their degree of difficulty for MPA managers of the regional networks of MPA managers -CaMPAM, MedPAN and RAMPAO-.

MPA management activities			Level of difficulty within MPAs				
			High	Medium	Low	No existent	No data
Ecosystem management	Biological connectivity and ecosystem integrity						
	Ecological research and monitoring						
	Mobile species						
	Endangered/vulnerable species						
	Invasive species						
	Habitat/site restoration						
Human activities regulation and management	Aquaculture and mariculture						
	Fisheries	Small scale					
		Large scale					
	Land-based activities (emissions and inputs from…)	Agriculture					
		Forestry					
		Industry					
		Urban waste					
	Tourism and recreational activities	Scuba-diving					
		Human trampling					
		Boat anchoring					
		Coastal habitat loss for tourist facilities expansion					
		Recreational fisheries					
		Sustainable tourism in general					
	Military activities						
	Placement and operation of…	Submarine cables					
		Pipelines					
	Oil and gas prospections and other resources						
	Maritime transport						
Other management activities	**Socio-economic evaluation**						
	Cultural heritage/archaeological/sacred sites management						
	Site maintenance and space of public use						
	Surveillance and enforcement/Ranger profession						
	Stakeholder engagement						
	Environmental education						
	Communication						
	Climate change						
	Coastal resilience actions						
	Planning						
	Integrated Coastal Zone Management (ICZM)						
	Marine Spatial Planning (MSP)						
	Financing						

MedPAN
CaMPAM
RAMPAO
MedPAN and CaMPAM
MedPAN and RAMPAO
RAMPAO and CaMPAM
MedPAN, CaMPAM and RAMPAO

The description of the results from the previous table only highlights the common activities which the three organizations classified within each difficultness categories. Additionally, the particularities of each network regarding the activities labelled as high difficulty are also specified due to its importance and prioritization to be considered while developing the recommendations for the Networks Twinning project common strategy.

- Common in the three networks of MPA managers: The three organizations classified as high difficulty management activities related to surveillance and enforcement (ranger profession), financing and MSP.
- Common in two networks of MPA managers: MedPAN and RAMPAO coincide in classifying as high difficulty actions related to biological connectivity and ecosystem integrity, biological research and monitoring, small scale fisheries, habitat loss for touristic facilities expansion in the coast, socio-economic evaluation, cultural heritage/archaeological/sacred sites management, climate change, and integrated coastal zone management. On the other hand, stakeholder engagement and communication is classified into high difficulty for CaMPAM and MedPAN; and RAMPAO and CaMPAM consider environmental education, planning and habitat/site restoration also in this category.

Regarding the activities classified as medium difficulty, MedPAN and RAMPAO categorized the management of large scale fisheries, agricultural and industrial land-based emissions, placement and operation of submarine cables, site maintenance and space of public use, which they are included in the human activities regulation and management group. CaMPAM and RAMPAO coincide classifying in this category human trampling within the tourism and recreational activities, and MedPAN and CaMPAM with coastal resilience actions. Moreover, with reference to the activities considered as low difficulty by the regional networks of MPA managers, CaMPAM and RAMPAO include aquaculture and mariculture management, as well as boat anchoring, while MedPAN and RAMPAO classified land-based emissions of forestry in this category.

- Exclusive of one network of MPA managers: MedPAN has also classified as high difficulty the ecosystem management actions related to invasive species and mobile species, as well as scuba-diving, boat anchoring, recreational fisheries, sustainable tourism and maritime transport within the human activities regulation and management. On the other hand, RAMPAO has additionally classified management of

endangered/vulnerable species, land-based emissions from urban waste and coastal resilience actions as high degree of difficultness. Similarly, CaMPAM categorized site maintenance and space of public use within the other management activities group.

Finally, CaMPAM determines that there is no data available to support the classification of the management activities related to the large scale fisheries, land-based forestry emissions, military services, cultural heritage/archaeological/sacred sites and the placement and operation of submarine cables and pipelines.

Technical support to face MPA management difficulties

The staff of the regional networks of MPA managers provided information on the technical support they offer to assist their MPA practitioners in managing their sites.

Figure 4 shows the percentage of activities which are covered by the technical support provided by the networks to their MPA managers, and they are classified into the general groups of MPA management actions previously cited in this section.

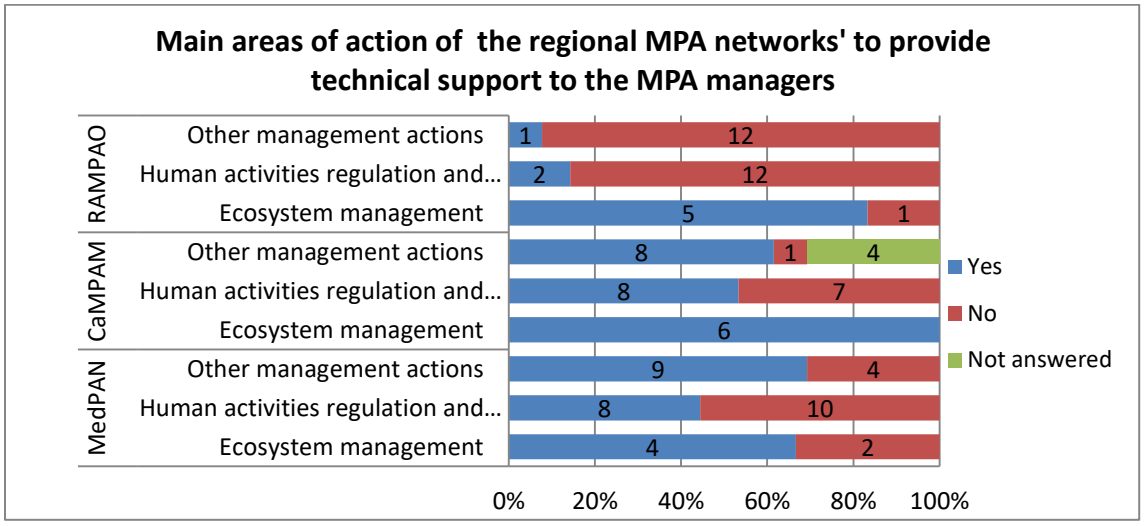


Figure 5: Technical support offered by regional networks of MPA managers -RAMPAO, CaMPAM and MedPAN- to assist MPA managers while facing the management difficulties identified. The numbers in the columns specify the number of management activities classified into the specific category.

According to the results obtained, MedPAN and CaMPAM provide technical support to the majority of the activities evaluated in this study. However, RAMPAO shows an important lack of this support especially within the groups of human activities regulation and other management actions. In an overview, the activities within the ecosystem

management group are the most supported by the networks, with percentages of 100% in CaMPAM, followed by an 83.34% in RAMPAO and a 66.67% in MedPAN. In the group of the other management activities, the percentages are slightly under the ones in the previous group, MedPAN with a percentage of 69.23%, followed by CaMPAM with 61.54% and RAMPAO with the lowest percentage of 7.69%. Regarding the human activities regulation and management group, the percentages are lower than the other groups with 53.34% in CaMPAM, 44.44% in MedPAN and 14.28% in RAMPAO.

These results are exposed more specifically in table 8, in which is shown the management activities evaluated in the study, as well as the existence or not of a technical support within each network to assist MPA managers in the referred actions.

Table 8: Availability of technical support offered by the regional networks of MPA managers -MedPAN, CaMPAM and RAMPAO- to assist MPA managers when facing the management difficulties identified.

MPA management activities			Availability of technical support offered by the MPA regional networks to assist the management difficulties
Ecosystem management	Biological connectivity and ecosystem integrity		
	Ecological research and monitoring		
	Mobile species		
	Endangered/vulnerable species		
	Invasive species		
	Habitat/site restoration		
Human activities regulation and management	Aquaculture and mariculture		
	Fisheries	Small scale	
		Large scale	
	Land-based activities (emissions and inputs from…)	Agriculture	
		Forestry	
		Industry	
		Urban waste	
	Tourism and recreational activities	Scuba-diving	
		Human trampling	
		Boat anchoring	
		Coastal habitat loss for tourist facilities expansion	
		Recreational fisheries	
		Sustainable tourism in general	
	Military activities		
	Placement and operation of…	Submarine cables	
		Pipelines	
	Oil and gas prospections and other resources		
	Maritime transport		
Other management activities	**Socio-economic evaluation**		
	Cultural heritage/archaeological/sacred sites management		
	Site maintenance and space of public use		
	Surveillance and enforcement/Ranger profession		
	Stakeholder engagement		
	Environmental education		
	Communication		
	Climate change		
	Coastal resilience actions		
	Planning		
	Integrated Coastal Zone Management (ICZM)		
	Marine Spatial Planning (MSP)		
	Financing		

MedPAN
RAMPAO
CaMPAM
MedPAN and CaMPAM
MedPAN, CaMPAM and RAMPAO
RAMPAO and CaMPAM

- Common in the three networks of MPA managers: All the organizations provide services to support most of the ecosystem management activities, such as the ones

related to biological research and monitoring, mobile species, endangered/vulnerable species and invasive species. Moreover, the three networks also facilitate services in the other two groups of management actions, those related to small scale fisheries and socio-economic evaluation within the sites.

- Common in two networks of MPA managers: MedPAN and CaMPAM have different coincidences regarding their technical support, which are surveillance and enforcement, stakeholder engagement, environmental education, ICZM, MSP and financing within the other management activities group. In addition, both networks also provide technical support in the land-based emissions of urban waste, and also in the management of touristic and recreational activities related to human trampling and boat anchoring. CaMPAM and RAMPAO have only one topic in common related to biological connectivity and ecosystem integrity within the ecosystem management group.
- Exclusive of one network of MPA managers: CaMPAM also assists with activities associated to habitat/site restoration, agriculture and industrial land-based emissions, scuba-diving, habitat loss for touristic facilities expansion in the coast, site maintenance and space of public use and planning. On the other hand, MedPAN also provides support with aquaculture and mariculture, recreational fisheries, maritime transport, communication and climate change, and RAMPAO offers only assistance with the management of large scale fisheries.

The questionnaire also gathered information regarding the specific technical support provided by the regional MPA networks to assist their managers in the management tasks previously mentioned in this section. Figure 5 exposes which specific management tools are provided in the three organizations to assist the MPA managers and it applies the same general groups of management actions previously used.

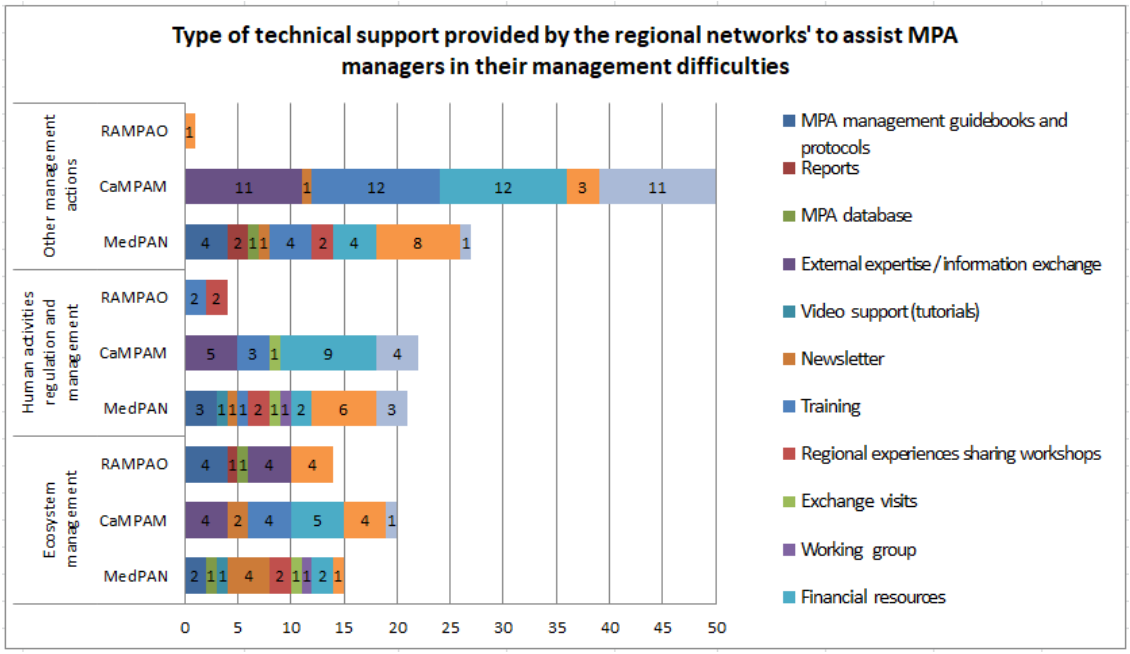


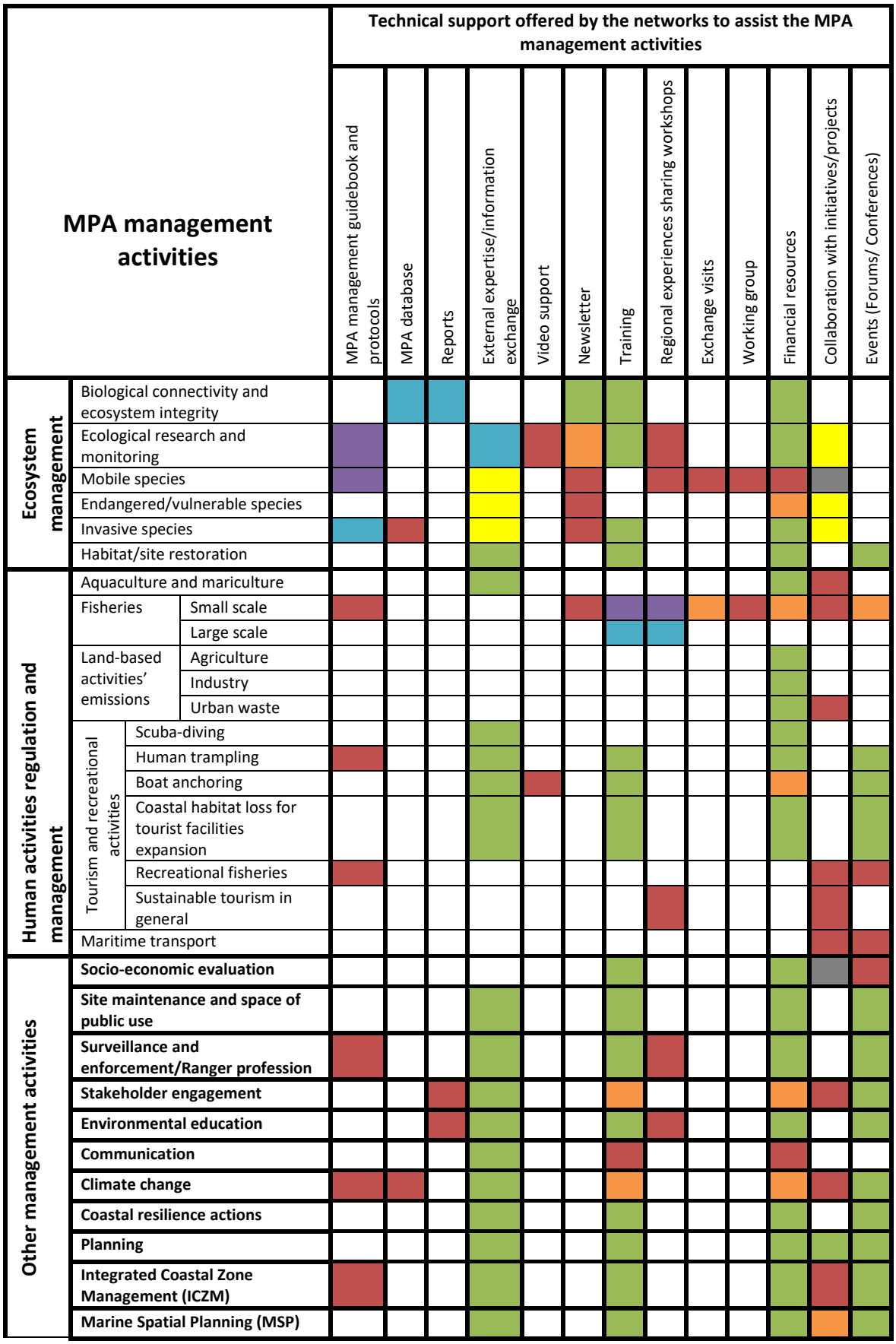
Figure 6: Number of types of technical support provided by the regional networks of MPA managers -RAMPAO, CaMPAM and MedPAN- to assist their MPA managers in different management tasks. The numbers in the columns specify the number of management activities classified within the specific category.

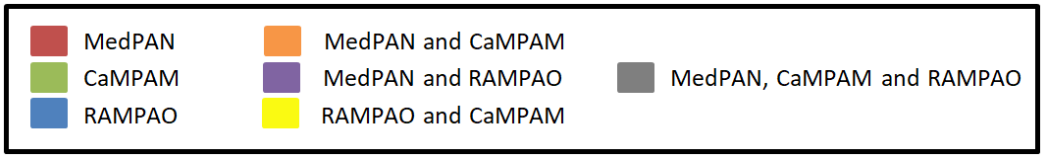
Overall, MedPAN offers the larger variety of technical support to the activities taken into account, followed by CaMPAM, and RAMPAO only offers diverse services in the tasks within the ecosystem management group. In the description of these results, only a comparison between the technical support which assists a minimum of three management activities is highlighted. The numbers of the activities assisted by the different regional networks of MPA managers are different, and therefore their percentages are difficult to compare. In order to have a more clear understanding of the importance of each technical support by its service of assisting the management issues considered, the precise number of activities assisted as well as their total will be specified next to the percentage for each concrete tool. In this way, for each organization the percentage for a particular tool it is referred as (nº of activities assisted by a specific tool/total of activities assisted by all different tools within one of the three particular groups of management activities). Accordingly, in the ecosystem management group, CaMPAM and RAMPAO have professional external expertise or a platform of information exchange with 20% (4/20) in the Caribbean network and 28.57% (4/14) for the African one, and also collaboration with initiatives or projects with the same percentages respectively. On the other hand, considering the specifications of each network, CaMPAM uses training, collaboration with

initiatives or projects and external expertise or platform for exchange information to support, each of them, 20% (4/20) of the management tasks, as well as 25% (5/20) by financial support. Newsletter assists 26.67% (4/15) of the management activities in MedPAN, and different events supports 28.57% (4/14) of them in RAMPAO. In the group of human activities regulation and management the networks are promoting events such as conferences and fora, which have a significant percentage in CaMPAM and MedPAN with 18.18% (4/22) and 14.29% (3/21) respectively. A key tool for CaMPAM is to support their members through financial resources, that it assists a notable percentage of the management activities within this group with a 40.91% (9/22). In addition, the Caribbean network also provides external expertise and platform for information exchange as well as training, which have 22.73% (5/22) and 13.64% (3/22) respectively. Other tools for MedPAN on its support to its managers are the collaboration with initiatives and/or projects as well as the provision of MPA management guidebooks and protocols, with 28.57% (6/21) and 14.28% (3/21) respectively. Regarding the group of other management activities, CaMPAM and MedPAN use training and financial resources both with 24% (12/50) and 14.81% (4/27) respectively, as well as the collaboration with initiatives and projects which represents a 29.63% (8/27) for MedPAN and 6% (3/50) for CaMPAM. On the other hand, considering separately the different networks, external expertise and the information platform as well as the events are important tools for CaMPAM which supports both of them 22% (11/50) of their activities, and MPA management guidebooks and protocols assist 14.81% of the activities in MedPAN.

Table 9 exposes the technical support offered by the regional MPA networks to their MPA managers for each of the management tasks considered in this study.

Table 9: Technical support offered by the regional networks of MPA managers -MedPAN, CaMPAM and RAMPAO- to assist their MPA managers in their management tasks.


MPA management activities
Technical support offered by the networks to assist the MPA management activities
MPA management guidebook and protocols
MPA database
Reports
External expertise/information exchange
Video support
Newsletter
Training
Regional experiences sharing workshops
Exchange visits
Working group
Financial resources
Collaboration with initiatives/projects
Events (Forums/ Conferences)
Ecosystem management
Biological connectivity and ecosystem integrity
Ecological research and monitoring
Mobile species
Endangered/vulnerable species
Invasive species
Habitat/site restoration
Human activities regulation and management
Aquaculture and mariculture
Fisheries
Small scale
Large scale
Land-based activities' emissions
Agriculture
Industry
Urban waste
Tourism and recreational activities
Scuba-diving
Human trampling
Boat anchoring
Coastal habitat loss for tourist facilities expansion
Recreational fisheries
Sustainable tourism in general
Maritime transport
Other management activities
Socio-economic evaluation
Site maintenance and space of public use
Surveillance and enforcement/Ranger profession
Stakeholder engagement
Environmental education
Communication
Climate change
Coastal resilience actions
Planning
Integrated Coastal Zone Management (ICZM)
Marine Spatial Planning (MSP)



- Common in the three networks of MPA managers: The three organizations collaborate with different initiatives or projects related to mobile species as well as in socio-economic evaluation.
- Common in two networks of MPA managers: MedPAN and CaMPAM coincide in several aspects, they use newsletter to publish the ecological research and monitoring conducted, they provided financial resources for actions to manage endanger or vulnerable species and boat anchoring, and also they collaborate with initiatives or projects related to MSP. Moreover, they offer external visits, different events and financial resources to manage small scale fisheries, and also training and funding to activities associated to stakeholder engagement, climate change and financing.

  On the other hand, CaMPAM and RAMPAO are collaborating with initiatives and projects related to ecological research and monitoring and also for mobile, invasive and endangered and/or vulnerable species; furthermore, they have external expertise assistance or a platform for information exchange for the management of the species mentioned.

  Differently, MedPAN and RAMPAO provide MPA management guidebooks and protocols for mobile species management and for ecological research and monitoring. They also offer training and regional experiences sharing workshop related to small scale fisheries.
- Exclusive of one network of MPA managers: Regarding the particularities of each networks' technical support, CaMPAM has a significant number of exclusive tools and activities, followed by MedPAN, and eventually RAMPAO with only a few. To prioritize the information obtained, only the technical support associated to four or more management tasks will be mentioned to highlight the tools more used within the services of the networks.

  CaMPAM provides financial resources, training, organizes events as well as it holds an external expertise and a platform for information exchange to a significant number of the management activities. Some of these actions are linked to biological connectivity and ecosystem integrity, habitat or site restauration, human trampling,

boat anchoring, habitat loss for touristic facilities expansion in the coast, site maintenance and space of public use, surveillance and enforcement, environmental education, coastal resilience actions, planning, integrated coastal zone management, MSP, among other topics.. Otherwise, MedPAN provides MPA management guidebooks and protocols, newsletter, regional experience sharing workshops as well it collaborates with initiatives and projects in activities such as management of mobile species, for small scale and recreational fisheries, climate change and financing among others. Moreover, one of the unique support tools in MedPAN is the working groups in different topics, currently in small scale fisheries and mobile species.

Suggestions of technical support improvements

Other information collected in this study was concerning the regional networks of MPA managers' staff opinion about possible actions of improvement for the technical support their organizations offer to the MPA managers in their region. In the description of the results below, only the concrete and specific actions suggested will be explained and highlighted in order to prioritize relevant and precise information that could be taken into consideration while developing the common strategy of the Networks Twinning project. Figure 6 presents the percentages obtained from the frequency of times which the improvement actions have been mentioned by the managers of the three organizations.

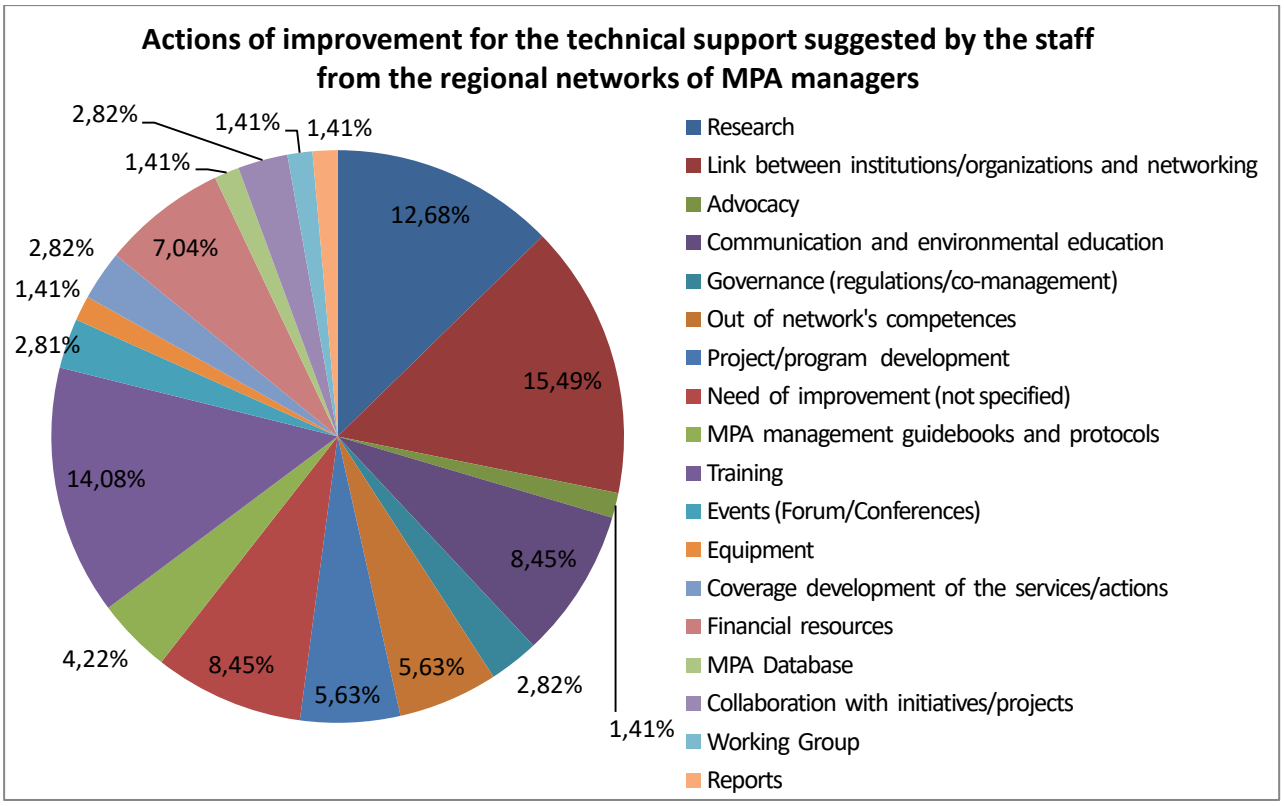


Figure 7: Actions of improvement for the technical support suggested by the regional networks of MPA managers' staff -RAMPAO, MedPAN and CaMPAM-.

The most suggested improvement actions are related to the creation of links between institutions or organizations and networking with a 15.49%, followed by strengthen MPA managers' capabilities by training activities with 14.08% and developing research with 12.68%. Other activities also demanded with less number of activities are communication and environmental education with 8.45%, as well as availability of financial resources with 7.04%.

Figure 7 shows the same results related to the improvement actions for the networks' technical support but considering the different general groups of the management activities.

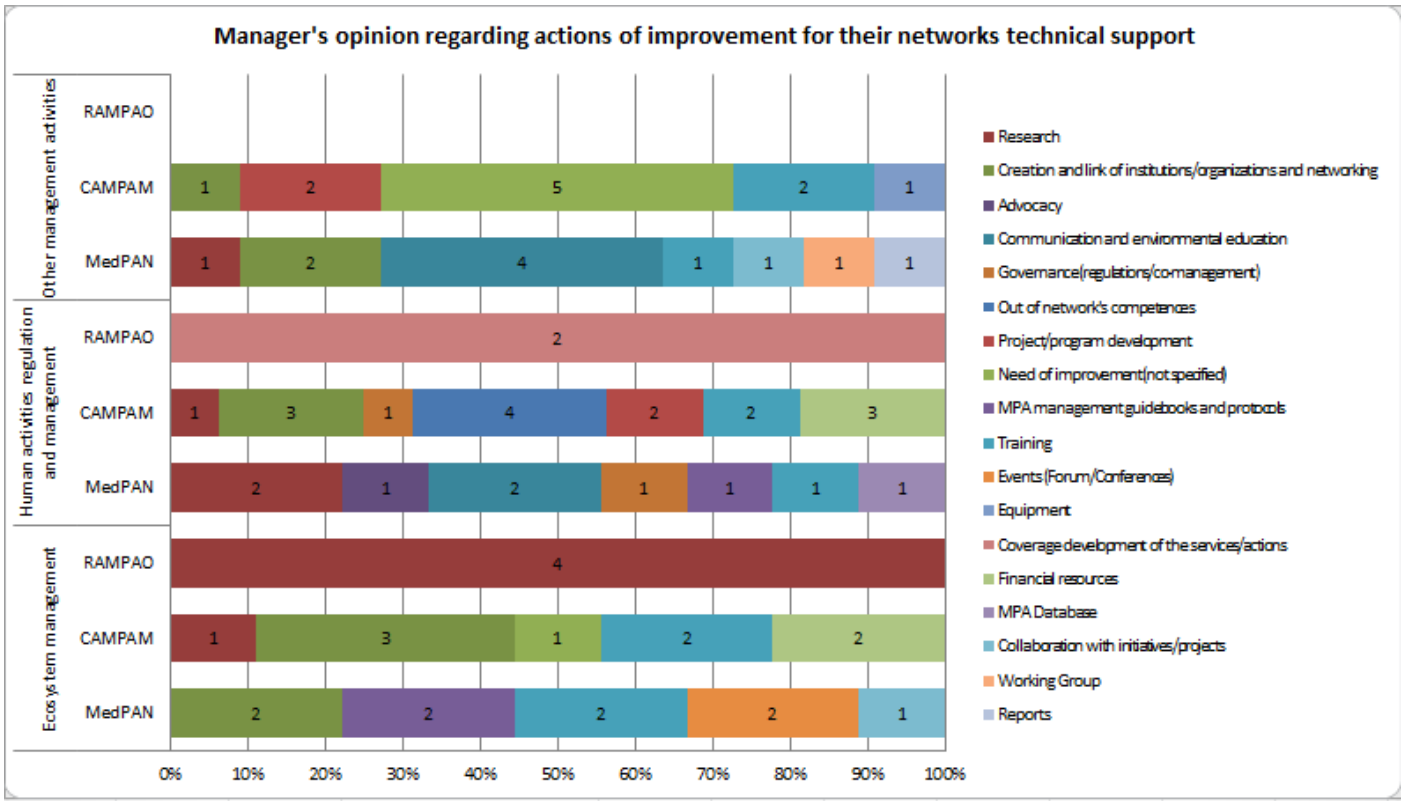


Figure 8: Actions of improvement for the regional MPA networks' technical support suggested by the regional networks of MPA managers' staff. The numbers in the columns specify the number of management activities classified within the specific category.

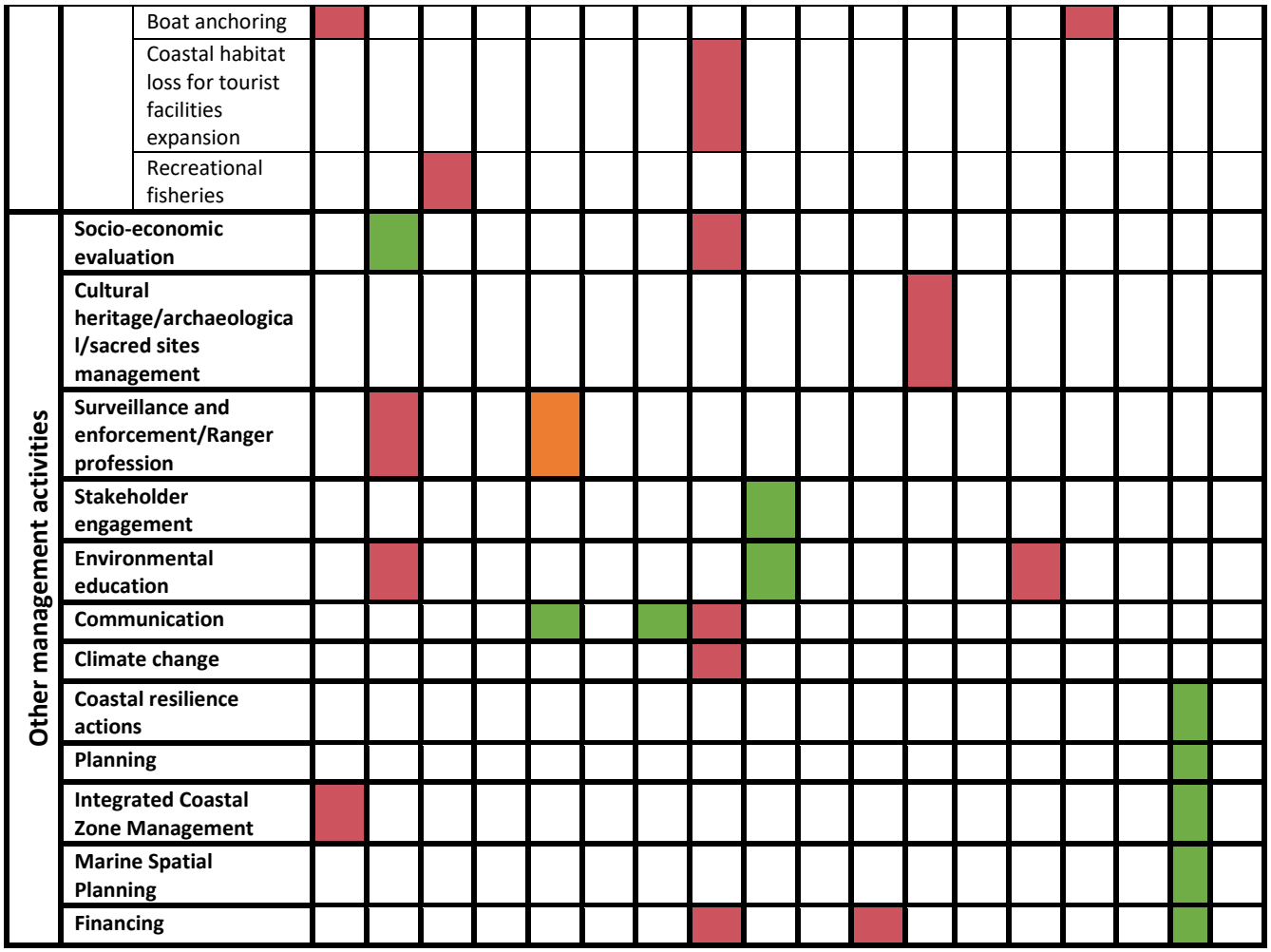
A general overview of the previous graphic shows that the staff from MedPAN and CaMPAM suggested more variety of improvements compared to RAMPAO, which was only proposing one suggestion for the two management activities groups and did not recommend any action for the group of other management activities. In the description of these results, the actions recommended by the organizations' staffs that are general and not precise will not be considered, neither commented. In the three groups of activities, creation and link between institutions/organizations and networking, as well as development of training are proposed by the staff of the networks to improve their technical support within the regional networks of MPA managers. Fomenting research and increasing availability of financial resources are suggested to improve ecosystem and human activities regulation and management. On the other hand, the groups of human activities regulation and other management activities would require enhancing in communication and environmental education. Regarding single group recommendations, MPA management guidebooks and protocols as well as events like forums and conferences would potentially improve the efficiency of the ecosystem management tasks within the

MPAs. In the human activities regulation and management group the suggestions are focused to require actions related to governance concerning regulations and co-management. Finally, projects or programmes development would enhance the MPA management tasks considered within the group of other management activities.

Table 10 presents the results in more detail, in which the suggestions of the networks' staff are specified for each management activity considered in this study.

Table 10: Improvement actions suggested by the regional networks of MPA managers' staff –MedPAN, RAMPAO and CaMPAM- to enhance the organizations' technical support.

MPA management activities			**Actions of improvement for the networks' technical support suggested by its staff**																		
			Research	Creation & link of institutions/organizations and networking	Governance	Advocacy	Training	Events (Forum/Conferences)	Equipment	Communication and environmental education	Project /program development	Financial resources	Report	Collaboration with initiatives/projects	MPA management guidebooks and protocols	Working Group	MPA Database	Coverage development of the services/actions	Need of improvement	Not considered into the competences of the network
Ecosystem	Biological connectivity and ecosystem integrity																				
	Ecological research and monitoring																				
	Mobile species																				
	Endangered/vulnerable species																				
	Invasive species																				
	Habitat/site restoration																				
Human activities	Aquaculture and mariculture																				
	Fisheries	Small scale																			
		Large scale																			
	Land-based activities' emissions	Agriculture																			
		Industry																			
		Urban waste																			
	Tourism	Scuba-diving																			



- Common in two networks of MPA managers: MedPAN and CaMPAM agree that creation and link between institutions and organizations as well as networking would be needed in the management of mobile and endangered and vulnerable species. Moreover, these two institutions propose to develop training in topics related to biological connectivity and ecosystem integrity as well as in surveillance and enforcement or ranger profession. CaMPAM and RAMPAO only coincide in highlight the necessity of strengthen and expand ecological research and monitoring.
- Exclusive of one MPA network of managers: From the particularities of each network, only the suggestions repeated more than four or more times are highlighted. Moreover,

a similar principle is applied for the management activities, in which only the actions suggested three or more times are described.

Research development is one of the suggestions that has more activities associated, which RAMPAO emphasises to develop for biological connectivity and ecosystem integrity as well as for mobile and invasive species. At the same time, MedPAN also highlights the need of this improvement addressed to aquaculture and mariculture, boat anchoring, and in ICZM.

On the other hand, training is also proposed for ecological research and monitoring and communication by CaMPAM; and MedPAN suggested the same for mobile species and scuba-diving. Creation and link of institutions or organizations and networking is also demanded by MedPAN regarding environmental education and surveillance and enforcement; and this action is also demanded by CaMPAM for invasive species and socio-economic evaluation. Moreover, MedPAN exposes the need of strengthen the communication and environmental education to improve with the management of small scale fisheries, communication, climate change, financing, coastal habitat loss for tourist facilities expansion, and socio-economic evaluation. On the other hand, CaMPAM suggest improving in the project and programming development to enhance management of small scale fisheries, scuba-diving, stakeholder engagement and environmental education.

In general, the management activities which the organizations' staff propose more improvement actions are the tasks related to the small scale fisheries, the biological connectivity and ecosystem integrity, the ecological research and monitoring, mobile and invasive species, scuba-diving, environmental education and communication.

Limitations of the improvements suggested for the technical support

In the questionnaire, the staff of the regional networks of MPA managers provided information regarding the limitations they identify in the improvement actions they suggested for the technical support of their organizations. Figure 8 shows these limitations for each regional MPA network in a general overview.

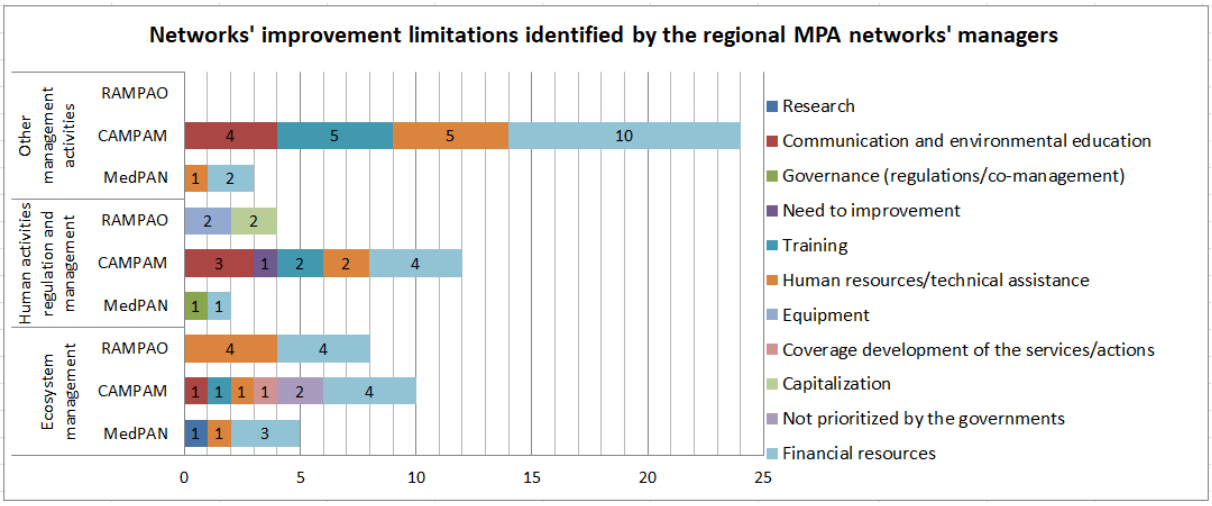


Figure 9: Limitations of the improvement actions identified by the regional networks of MPA managers' staff –MedPAN, RAMPAO and CaMPAM-. The numbers in the columns specify the number of management activities classified within the specific category.

The graphic above shows that the most common limitation mentioned for the improvement actions proposed is the lack of availability of financial resources with a 60% in MedPAN, 39.13% in CaMPAM and 33.33% in RAMPAO. Additionally, the lack of human resources appears as decisive to restrict the development of the technical support, with 33.33% in RAMPAO, 20% in MedPAN and 17.39% in CaMPAM. On the other hand, deficiencies in communication and environmental education as well as training are relevant limitations for CaMPAM with also 17.39%.

Table 11 presents the results in a more concrete manner, in which the limitations of the regional networks of MPA managers' technical support identified by the organizations' staff are linked to the management activities.

Table 11: Improvement actions of the technical support of the regional networks of MPA managers –RAMPAO, CaMPAM and MedPAN-, linked to the specific limitations identified by the organizations' staff.

MPA management activities			Improvement limitations identified by the regional networks of MPA managers										
			Research	Equipment	Training	Capitalization	Human resources/technical assistance	Coverage development of the services/actions	Financial resources	Governance	Communication and environmental education	Not prioritized by the governments	Need of improvement
Ecosystem management	Biological connectivity and ecosystem integrity												
	Ecological research and monitoring												
	Mobile species												
	Endangered/vulnerable species												
	Invasive species												
	Habitat/site restoration												
Human activities regulation and management	Aquaculture and mariculture												
	Fisheries	Small scale											
		Large scale											
	Tourism and recreational activities	Scuba-diving											
		Human trampling											
		Recreational fisheries											
Other management activities	**Socio-economic evaluation**												
	Cultural heritage/archaeological/sacred sites management												
	Site maintenance and space of public use												
	Surveillance and enforcement/Ranger profession												
	Stakeholder engagement												
	Environmental education												
	Communication												
	Coastal resilience actions												
	Planning												
	Integrated Coastal Zone Management												
	Marine Spatial Planning												
	Financing												

MedPAN
CaMPAM
RAMPAO
MedPAN and CaMPAM
MedPAN and RAMPAO
RAMPAO and CaMPAM
MedPAN, CaMPAM and RAMPAO

- Common in the three networks of MPA managers: The three organizations have only one limitation in common which it is the financial resources within the ecological research management and monitoring tasks.

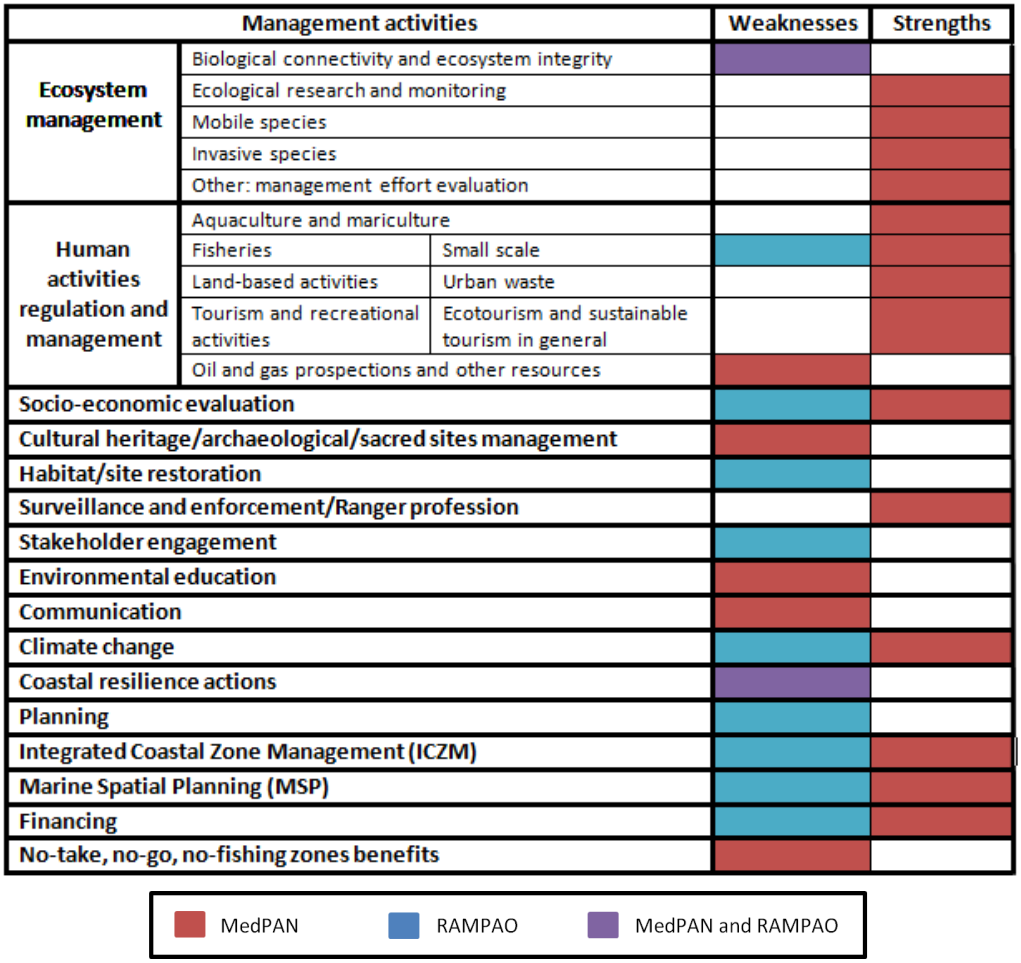
  On the other hand, the MPA management actions affected by three or more limitations that influence the three organizations are the biological connectivity, ecosystem integrity, and mobile and invasive species.
- Common in two networks of MPA managers: The limitation by the financial resources is also present in tasks related to habitat restoration and socio-economic evaluation for MedPAN and CaMPAM, also with the management of mobile species for MedPAN and RAMPAO, and to manage invasive species as well as biological connectivity and ecosystem integrity for CaMPAM and RAMPAO. Insufficient human resources and technical assistance are present in ecological research and monitoring in MedPAN and RAMPAO, and also in socio economic evaluation for MedPAN and CaMPAM.

  The management activities which are influenced by many restrictions within MedPAN and CaMPAM are habitat/site restoration and socio-economic evaluation, and small scale fisheries in CaMPAM and RAMPAO.
- Exclusive of one network of MPA managers: CaMPAM have a significant number of management activities that are affected by limitations related to training, communication and environmental education. Moreover, CaMPAM has several limitations affecting also site maintenance and space of public use, surveillance and enforcement and stakeholder engagement.

Weaknesses and strengths

This study collected data regarding weakness, strengths and skills within the management tasks from each network in order to determine potential links of compatibilities and assistance between the organizations, and therefore enhance their performance and efforts. In this sense, Table 12 exposes the strengths and weaknesses of MedPAN and RAMPAO identified by their staff. The staff of CaMPAM provided a descriptive answer, in which explained that the organization has an extended expertise because of its high number of members associated to it reaching 1000 professionals, such as scientists, managers and project coordinators, but did not specify any topics.

Table 12: Weaknesses and strengths points from RAMPAO and MedPAN identified by their staff.



- Common in two MPA networks of managers: There are only debilities shared between the two organizations, which are the management activities related to coastal resilience actions and biological connectivity and ecosystem integrity.
- Exclusive of one MPA network of managers: MedPAN identified a significant number of MPA management tasks as strengths and a few as weaknesses; on the contrary, RAMPAO only identified weaknesses. In this regard, MedPAN classifies as a strength the management activities such as ecological research and monitoring, management of mobile and invasive species, management effort evaluation, aquaculture and mariculture, small scale fisheries, urban waste emissions management, ecotourism and sustainable tourism, socio-economic evaluation, surveillance and enforcement, issues in climate change, ICZM, MSP and financing. However, it also considers as weaknesses oil and gas prospections and other resources, cultural heritage/archaeological/sacred sites management, environmental education, communication and benefits of no-go, no-take and no-fishing zones.

On the other hand, RAMPAO classifies as a weaknesses management activities such as small scale fisheries, socio-economic evaluation, habitat/site restoration, stakeholder engagement, issues related to climate change, planning, ICZM, MSP and financing.

From the three regional MPA networks, only MedPAN provided specific information about the reasons why their strengths and weakness identified exist, which they affect the development and improvement of the management activities considered in this study. RAMPAO only gave a broad explanation, in which states insufficient management coverage of the MPA within the network to identify all their weaknesses. Figure 9 explains the actions developed as well as the regional context of the different MPA management activities, which determine the strengths of MedPAN.

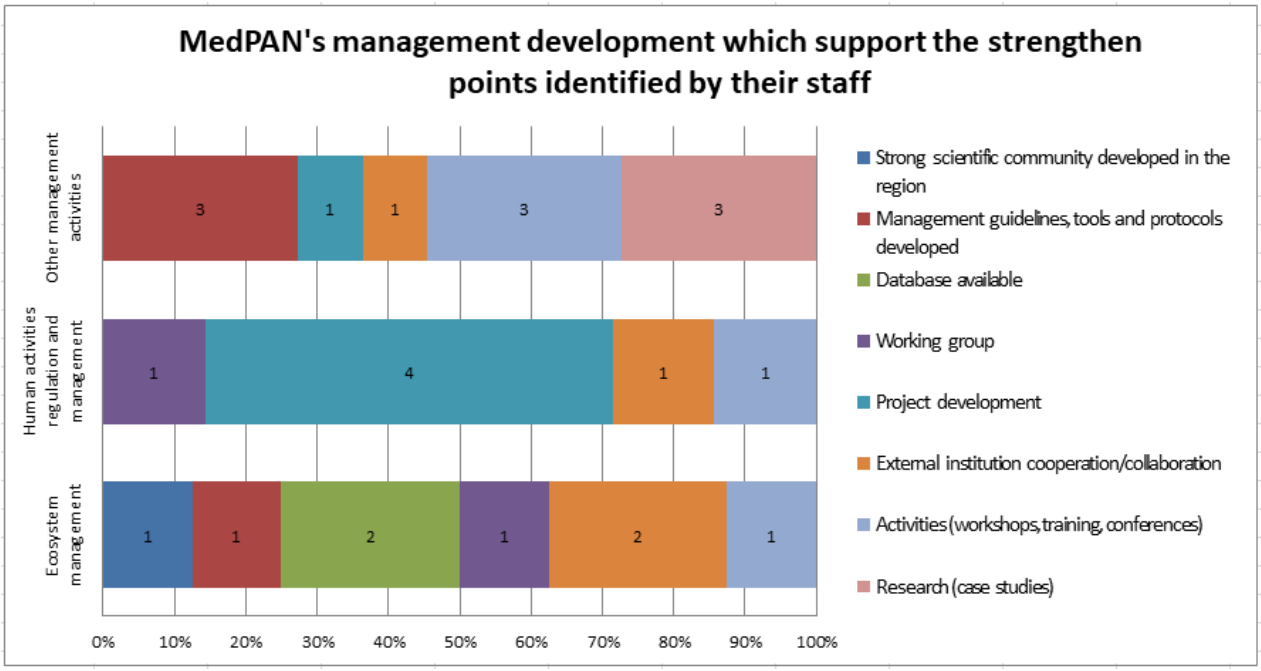


Figure 10: Aspects identified by MedPAN's staff that support the strengths of the assistance/coordination/functioning development of the organization. The numbers in the columns specify the number of management activities classified within the specific category.

As shown in figure 9, the expertise of the MPA management activities are frequently supported by project development, very important in the human activities regulation and management group, as well as for the organization of activities such as workshops, training and conferences, especially in the group of other management activities. Other relevant points to support this expertise are the availability of the management guidelines, tools and protocols, particularly in the actions under the other management activities group; and also

the cooperation and collaboration with external institutions to enhance and develop different management activities.

In table 13, the results are shown in a more specific way and the particular aspects of support are linked to MedPAN's strengths and weaknesses.

Table 13: Aspects related to the existence of the MedPAN services' strengths and weaknesses identified by the organization's staff. The boxes coloured in grey indicates the aspects existing in the strengths and weaknesses of each MPA management activity.

MPA management activities		Existence/lack of management development in MedPAN to support their												
		Strengths								**Weaknesses**				
		Strong scientific community developed in the region	Management guidelines, tools and protocols developed	Database available	Working group	Project development	External institution cooperation/ collaboration	Activities	Research (case studies)	Not existent in the region.	No data	No scientific network	No cooperation between sites and institutions	Strengthen the field management/technical support
Ecosystem management	Biological connectivity and ecosystem integrity									■				
	Ecological research and monitoring	■	■	■										
	Mobile species				■		■	■						
	Invasive species						■							
	Management effort evaluation			■										
	No-take, no-go, no-fishing zones benefits													■
Human activities regulation and management	Aquaculture and mariculture					■								
	Small scale Fisheries				■	■	■	■						
	Emissions from urban waste					■								
	Ecotourism					■								
	Oil and gas prospections and other resources										■			
Other management	**Socio-economic evaluation**							■	■					
	Cultural heritage sites management										■	■		
	Surveillance and enforcement		■					■						
	Environmental education				■								■	
	Communication													■
	Climate change		■			■								
	Coastal resilience actions										■			

	Integrated Coastal Zone Management													
	Marine Spatial Planning													
	Financing													

According to the data exposed in the above table, ecological research and monitoring, management of mobile species, small scale fisheries and financing have three or more actions linked to them, and therefore they could be considered as areas of focus and expertise within the MedPAN services. Other topics with two aspects of support are socio-economic evaluation, surveillance and enforcement, environmental education and climate change. However, a further analysis regarding the development of the different technical support for each management activity should be conducted, in order to determine the degree of expertise, as well as the actual technical support that could be potentially used in other regions. The aspects which affect the management activities considered as weaknesses are related to lack of data as well as poor scientific community, deficiency of cooperation between sites and institutions, or the need to strengthen the management and or technical support of the specific activity.

Moreover, the questionnaire aimed to explore in which management aspects each regional network of MPA managers can provide expertise or have specialization and/or extended experience. MedPAN provided explicit information regarding this topic while CaMPAM responded in an overall manner, and RAMPAO did not facilitate any data. CaMPAM explained that the network does not have any internal expertise, but rather it has the CaMPAM Expert Group with 35 members with different professional profiles and expertise, with availability to hire or consult them when needed. MedPAN states that the MPA management topics to which it can provide expertise are related to management of mobile species, small scale fisheries, surveillance and enforcement or ranger profession, and financing, topics in which they provide guidelines on monitoring and management tools. In addition, the organization has significant experience in financing, and also elaborates institutional and administrative action though cooperation charter and strategy development in mobile species and benefits of no-take, no-go and no-fishing zones. Moreover, MedPAN has also expertise in management effort evaluation, in which has developed a data base.

5.2.1.3. POTENTIAL FOR COORDINATION AT TRANSATLANTIC SCALE

This study also explored the regional MPA networks' interest, capability or their staff's opinion regarding the potential to develop a link and coordination between them in different MPA management fields at transatlantic scale.

Prioritization of MPA management issues

In this way, a set of relevant MPA management issues were prioritized by the different organizations in order to identify the topics to coordinate at transatlantic scale that could strengthen their efforts and capacity at regional and larger scale. Figure 10 shows the results obtained from the three networks, exposing the first four choices of this prioritization as well as their communalities and particularities between the organizations.

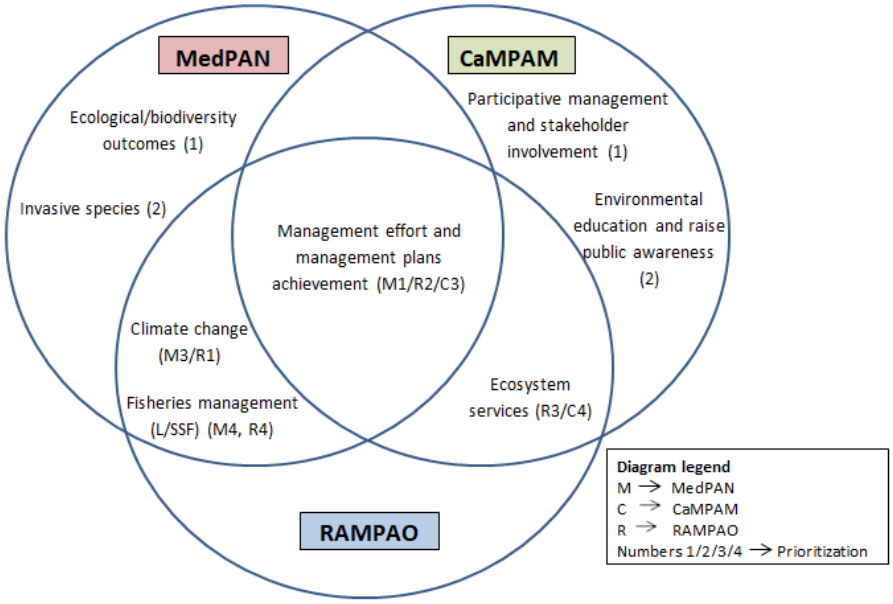


Figure 11: Diagram of the topics prioritized by the regional networks of MPA managers - MedPAN, CaMPAM and RAMPAO- to coordinate at transatlantic scale to strengthen their efforts and capacity at regional and larger scale.

- Common in the three networks of MPA managers: The only topic that the three organizations coincide to prioritize its coordination at transatlantic scale is for management effort and management plans achievement.
- Common in two networks of MPA managers: MedPAN and RAMPAO agree on prioritizing climate change issues and fisheries management, and CaMPAM and RAMPAO on ecosystem services.

- Exclusive of one MPA network of managers: MedPAN considers relevant to cooperate in the management of invasive species and also in ecological and biodiversity outcomes. On the other hand, CaMPAM highlights the importance of establish a collaboration between organizations in participative management and stakeholder engagement, as well as for environmental education and actions to raise public awareness.

Standardized tools to address common management issues

The questionnaires explored the organizations' interest to define and develop a common and standardized protocol or methodologies among networks for specific management actions and/or monitoring. In this way, this study aimed to identify which topics are more relevant to standardize among networks in order to strengthen their cooperation towards achieving and improving the MPA management effectiveness at transatlantic level, as well as to face cooperatively other global challenges. There were a variety of responses to this question, MedPAN prioritized the topics, CaMPAM gave a descriptive answer and RAMPAO did not provide any information on this regard.

MedPAN prioritized to coordinate among networks the evaluation of the management effort and management plans achievement, as well as the benefits of no-take, no-go, no fishing zones, followed by the management of mobile species, climate change issues, evaluation of ecological/biodiversity outcomes and socio-economic benefits; the topics have been organized from more to less importance in the prioritization. Additionally, specific actions were suggested for each MPA management activity in order to develop collaboration on these topics between organizations. In this regard, a communication tool between the organizations with case studies and common messages is suggested for the benefits of no-take, no-go and no-fishing zones, and for the management of mobile species, a standardization of monitoring protocols for migratory species of interest. Furthermore, communication of efficient management practices for concrete topics from successful MPAs or their networks is recommended for socio-economic benefits, ecological/biodiversity outcomes and climate change. Additionally, in this last topic, is proposed a standardization of MPA guidelines and the incorporation of this topic in the MPA management plans.

On the contrary, CaMPAM considers that no methods should be standardized among regions, and provided a list of aspects that suggests to be shared at transregional level. According to CaMPAM's staff, the different organizations should share and develop the following aspects:

- Their expertise by providing specific information of their experts to be available to coordinate, mentor or review projects.

- The schedule of activities to identify opportunities of synergy and tools for building capacity among MPA managers.

- The activities to promote knowledge sharing such as technical assistance, site visits, financial resources, among others.

- To organize different exchanges activities between the managers of the organizations, such as meetings, video chats and/or online fora.

- To have availability of resources for the networks' coordinators to organize sessions at international fora to expose regional MPA networks' accomplishments and issues.

Despite CaMPAM did not prioritize any topics; it suggested developing some actions to coordinate certain topics between organizations. In this regard, it proposed to create a grant program for projects coordinated by mentors from both sides of the Atlantic to test and apply recommendations from past evaluations for the management effort and management plans achievement. Also on this topic, it suggested to support projects to evaluate management scheme using standard methods. Moreover, for the ecosystem services for MPAs, it proposed to establish a list of mentors, institutions or expert team with relevant experience in this topic from each region to be available as project coordinator or mentor. Finally, for the participative management and stakeholder engagement, it suggested developing a transatlantic exchange of information as well as promoting discussions in fora, supporting scientists and managers to attend these events in both sides of the Atlantic.

Common data collection mechanism

The questionnaires also collected information concerning the possibility and potential of developing a standardized mechanism of coordination between the regional networks of MPA managers to enhance data collection and sharing monitoring as well as for awareness

raising issues. In this way, this study explored in which MPA management topics the different organizations were interested to establish a common MPA database at transatlantic scale. Only MedPAN provided data regarding this subject, and prioritized the topics which the organization could be interested on developing a transregional data collection and also suggested the way or format could be used. The topics will be exposed from more to less relevance in the prioritization, followed by the format proposed for it. The first topic prioritized was the evaluation of the management effort and management plans achievement, which the common databased could be based on management effort of MPAs as well as targeting a qualitative aspect of the Aichi target 11. The second was the management of mobile species, which the mechanism could collect mobile species of interest such as marine mammals. Subsequently, it prioritized the benefits of no-take, no-go, no-fishing zones and the socio-economic benefits, and the database in both could collect data on results and success between regions.

CaMPAM did not prioritize any topic but highlighted the need of technical assistance and financial support to enhance data management systems in each regional network of MPA managers.

Information and management tools exchange

Furthermore, ideas among the staff of these organizations were gathered regarding how the different regional networks of MPA managers could cooperate to share tools to facilitate information exchange, expertise advice and compare management practices among the different organizations.

Only MedPAN staff suggested establishing a web space to exchange information as well as to organize webinars related to this topic. Also it proposed to organize activities such as joint exchange visits and training workshops for MPAs to promote expert advice and compare management practices between regions. Additionally, all the regional networks of MPA mangers prioritized the topics of their interest from which are relevant sharing or collaborating among regional MPA networks regarding sharing tools, information exchange, expert advice and compare management practices. Figure 11 shows the first five prioritization topics of the different organizations, the order of the classification as well as their communalities and their particularities in this regard. Some organizations classify more than one topic for the same priority level and other only one. In the

description of the results, only the communalities and particularities of the organizations in their classification are exposed to identify the common interest and potential topics to consider for further project development, but the order of prioritization will not be specified for all the topics.

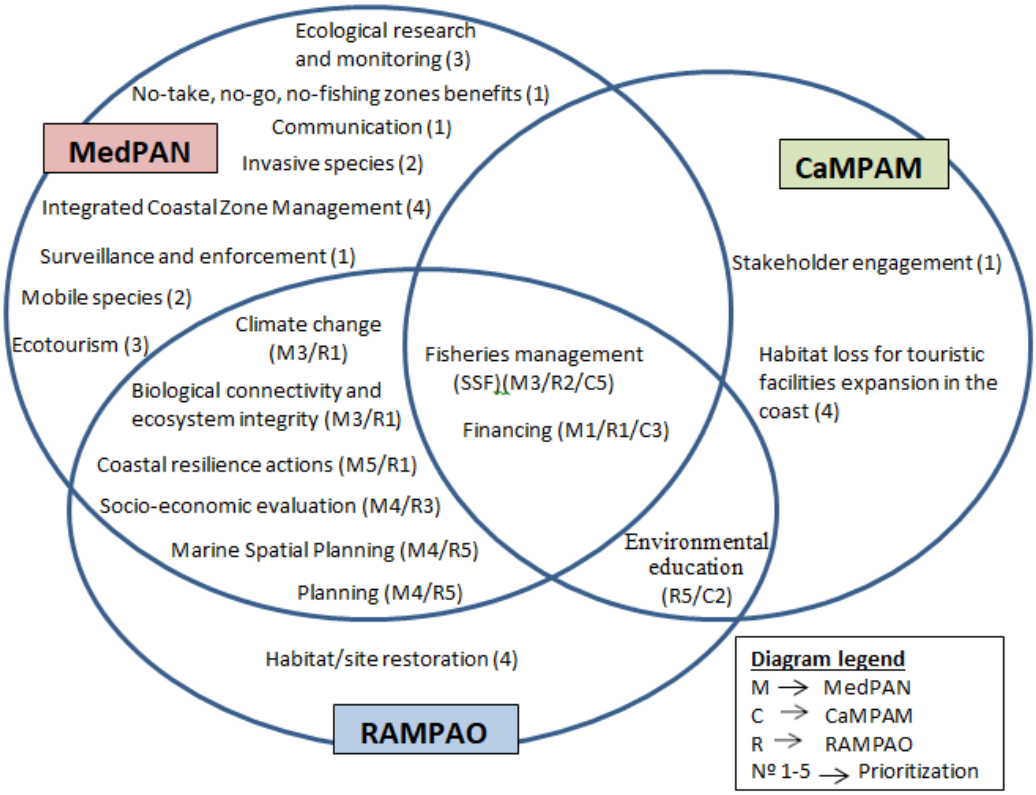


Figure 12: Regional networks of MPA managers -MedPAN, RAMPAO and CaMPAM- prioritization on coordinating MPA management topics between organizations at transatlantic scale to share tools about facilitating information exchange, expertise advice and compare management practices.

- Common in the three networks of MPA managers: Only two topics are common in their prioritization by the three networks, the fisheries management and financing.
- Common in two networks of MPA managers: MedPAN and RAMPAO coincide in many of their topics to coordinate between organizations, such as climate change, biological connectivity and ecosystem integrity, coastal resilience actions, socio-economic evaluation, MSP and planning. On the other hand, CaMPAM and RAMPAO only coincide to collaborate in environmental education actions, and no topics are shared between CaMPAM and MedPAN.
- Exclusive of one network of MPA managers: MedPAN suggested a considerable number of topics to coordinate and the first two prioritizations will be highlighted to

determine the most relevant topics. The first choices were surveillance and enforcement, communication as well as no-take, no-go and no-fishing zones benefits, and the second ones were invasive and mobile species. CaMPAM, on its side, proposed to coordinate the management tasks related to stakeholder engagement and habitat loss for touristic facilities expansion in the coast. Finally, RAMPAO suggested the topic of habitat/site restoration to be coordinated at transatlantic level among organizations.

5.2.2. Questionnaires of the national agencies related to MPAs

Regarding the national agencies with MPA management competences only the national MPA Center of NOAA provided a questionnaire, and a part of the information was used in these results. On the other hand, no questionnaires were responded by the French Biodiversity Agency, the Parks Canada and the Biodiversity Foundation of Spain. In the case of this last agency, there was a governmental bureaucracy issue which stopped its process of participation. This national agency related with MPAs responded the questionnaire, but it was derived to the General Directorate for the Sustainability of the Coast and the Sea, which is the governmental administration of Spain regarding MPAs, to be subjected to a validation process. However, this process did not finalize, and therefore the questionnaire was not received for this study.

Feedback was asked to the national agencies related to the Networks Twinning project during the elaboration of the questionnaire. In this way, comments were asked to French Biodiversity and Biodiversity Foundation of Spain, and only the last one provided inputs that were integrated to the questionnaire before sending it to be responded to the organizations.

The information obtained is divided by different subparts regarding the agency institutional framework and functionality, specific information relevant to find common or potential interests between the organization and the regional networks of MPA managers, potential collaborations with the Transatlantic MPA Network initiative, and finally points suggested by the agency.

Therefore, this section exposes the information that could be collected from the questionnaire addressed to MPA Center of NOAA:

- NOAA's institutional framework and functionality:

    - NOAA has two institutional centres which have different operational and functional responsibilities regarding the MPA sites and its networks in United States, the Office of National Marine Sanctuaries (ONMS) and the MPA Center. ONMS is the legal administrator of 14 sites and a national system of National Marine Sanctuaries, and manages the national MPA sites and national MPA network. Additionally, it is also involved in the operation of co-managed areas in a national MPA sites and with coordination and collaboration of projects in co-managed marine sanctuaries, in both working together with other administration states from the country. It also provides technical assistance with expert supervision, documentation and financial support, capacity building and networking for national MPA sites and MPA national networks. On the other hand, MPA Center offers documentation support and networking for MPA national networks.

- Specific information relevant to find common or potential interests between the MPA Center of NOAA and the regional networks of MPA managers.
    - NOAA provides management support to the MPA managers in their country. In this regard, both of the NOAA's divisions mentioned, offer protocols and guidebooks for topics such as ecological benefits, sustainable financing, tourism, and fishing, design resilient MPA as well as related to governance. On its side, ONMS also offers documentation support in issues related to management plans, management of endangered or species of interest, socio-economic benefits, guide of scorecards for MPAs, methodological worksheets of communication, community outreach and sensitization tools, environmental education, monitoring guides for species, ecosystems and socio-economic aspects, surveillance and management of sacred/cultural/natural sites. On the other hand, the MPA Center provides protocols and guidebooks related to planning MPAs in climate change, MPA vulnerability assessment tool, monitoring guides for climate change, MSP, total area and level of protection in the country and MPA inventory.

- The two institutions have a mechanism of data collection for different topics. Both of them develop database for ecosystem and communities, species, physiographic features description, human activities and environmental impacts. On its side, ONMS has also databases in management performance, social and economic activities and legal framework of the MPAs. Moreover, national MPA Center develops a data collection on geographic information system (MPA's geographic and spatial data) as well as for experts. In all the databases the program or format used is a national inventory and GIS database.
- The MPA Center of NOAA administrates MPA sites to protect specific migratory species with high ecologic value including different species of cetaceans, seals and sea birds. Some of the species were specified as well as some names of the sites, such as the humpback whale (*Megaptera novaeangliae)* in the Hawaiian Islands National Marine Sanctuary (NMS) and Stellwagen Bank NMS, this last one also with north Atlantic and Pacific right whales (*Eubalaena glacialis* and *Eubalaena japonica* respectively), and the Galápagos sea lions *(Zalophus wollebaeki)* in five NMSs sites of the west coast region.
- The MPA Center of NOAA has a mechanism to coordinate management or monitoring for climate change in some sites in its system called sentinel sites, and the results obtained are used and taken into consideration as a management tools and in decision making processes. No system to coordinate management or monitoring to improve coastal resilience in the sites of the MPA national network has been established, neither for rapid population densification in coastal areas.
- Regarding the financial support, neither ONMS nor the MPA Center provide grants, and the operations developed are budget-based. However, other division of NOAA offers grants which NMSs can apply for.
- ONMS and MPA Center develop different advocacy activities to represent the MPA managers of US in different meetings. In this way, ONMS is involved in national conferences as well as in collaboration with other national initiatives and projects related to fisheries, oil and gas exploitation, shipping, tourism as well as for tribal and other communities. On the other

hand, MPA Center is implicated in fora, conferences, congresses as well as collaborating with other initiatives and projects, all this events at national, regional and international level. The topics developed are related to MPA sector and also climate change, this last one in collaboration with initiatives and projects.

- The most frequent and important management issues and/or difficulties that MPA managers face in their performance within US, based on the experience in the NMSs, are the following:
  - Management activities classified as high difficulty in the MPA management: funding, staff (includes enforcement), research and partnerships, political support.
  - Management activities classified as medium difficulty in the MPA management: capacity building and community engagement.
- Both ONMS and MPA Center offer technical support to help the MPA managers in their tasks. However, no information was specified regarding the support offered in the case of ONMS, while MPA Center offers partnerships, provides information for the MPAs and it develops tools for MPA managers.
- The staff of MPA Center of NOAA recognizes different topics as weakness and strengths regarding MPA management support. The topics and aspects are related to staff, resources, capacity building, jurisdiction issues, the overlap of competencies with other agencies, limited vision of the big picture, highlighting the importance of international partnership to consider the management in a more holistic manner, contemplating the global MPA system. However, these topics were not specified if they are weaknesses or strengths.

- Potential collaborations with the Transatlantic MPA Network initiative:
  - The staff of MPA Center of NOAA expressed interest in establishing connection and cooperation with other national/sub-regional/regional MPA networks at transatlantic scale in different topics. In this way, from developing these links it recognizes benefits related to share management technical tools, coordinate and share management pilot/innovative projects as well as coordinate management of capacity issues with other national

MPA networks. Moreover, staff from NOAA is interested in sharing management technical support tools, as well as coordinating management activities related to pollution at sub-regional MPA networks level. Finally, at regional MPA networks level, it express interest to develop collaboration in many topics and actions, such as share management technical tools, coordinate and share management pilot/innovative projects and establish a management experience sharing platform. Moreover, MPA Center of NOAA is interested in management and monitoring coordination of climate change, mobile species, and common ecological features between sites-such as species and habitats-, as well as pollution and capacity issues.

  - The staff of MPA Center of NOAA considers fundamental the establishment of management actions to define common and standardized protocols or methodologies to improve the MPA management effectiveness at transatlantic level and/or face other global challenges. The institution highlights the necessity to focus on and equally prioritize research, monitoring, enforcement, capacity building, and transboundary species (mobile and invasive), as well as efforts to develop networks objectives and goals.
  - The staff of MPA Center of NOAA suggested coordination between its institution and the Transatlantic MPA Network initiative through establishing an interagency council/board.

- Suggestions of the staff of MPA Center of NOAA:
  - Further work on language support to reach MPA managers in non-English speaking countries.

5.2.3. Questionnaires of the international institutions

From the two questionnaires sent to HELCOM's and OSPAR's Secretariat, only the survey sent to last one was received. HELCOM did not participate because at the period of conducting the questionnaire (beginning of 2019) the Commission did not have any regional networks of MPA managers. However, recently this organization created the HELCOM Network for MPA Management (EN MPA MANET), approved in June 2019 (HELCOM, Heads of Delegation, 2019).

Thus, the information collected through the questionnaire addressed to the OSPAR Secretariat is presented below with the same subparts used to divide the previous section:

- OSPAR commissions' framework and functionality:
    - The Commission is the decision making body in OSPAR. Additionally, there is also Intersessional Correspondence Group (ICG)-MPA meetings where experts provide knowledge and experiences in different topics and their outcomes are considered and deliberated at the Biodiversity Committee (BDC) meeting which elaborates decision proposals to OSPAR Heads of Delegation and OSPAR Commission.
    - OSPAR is generally not involved in the MPA site management level. It is focused on creating a regionally coherent network of MPAs and develops approaches to be shared across the region. These actions are debated in an expert group within the BDC, the OSPAR ICG-MPA, which is the forum to coordinate and discuss the issues linked to the MPAs. In this way, the contracting parties to OSPAR, in which are involved 15 states and the EU, use the meeting as a forum of debate, exchange information and agreement.
    - The Commission has two types of MPAs within its MPA network in the OSPAR Maritime Area, the MPAs designated within the different national waters of the contracting states and managed by the corresponded state, and the MPAs designated collectively by OSPAR in the Area Beyond National Jurisdiction (ABNJ). In this last type of MPAs there are two kinds of actions, the ones which the Contracting Parties develop at national level, and the actions which OSPAR realizes in a collaboratively manner.
    - The Commission does not focus on capacity building tools; its working procedure is by regional meetings with national representation of delegates within the north Atlantic. In these meeting are also official OSPAR Observers as well as invited guests.
    - It has different communication tools regarding MPAs and their networks, which are the website as an external and internal tool, and also an expert group within the last one.
    - No financial tools are provided to the contracting parties.
- Specific information relevant to find common or potential interests between the commission and the regional networks of MPA managers.

- The support provided by OSPAR to the contracting parties is based on a regional forum, regional guidelines and it also organizes and coordinates activities to share experiences and lessons learned at national level. OSPAR has presented and shared these processes with other regions within the Atlantic and it has a specific knowledge sharing relationships with the Abidjan Convention and Cartagena Convention (CEP).
- Existence of a mechanism of data collection within the Commission, which it pronounces with the aim to update the information within the database on the MPAs in the network, which it currently remains incomplete. The Commission uses certain criteria to designate MPAs in its network, which encompasses the OSPAR List of threatened and/or declining species among others.
- The OSPAR Commission gather regional datasets on some human activities (not specified in the questionnaire), and it aspires to develop methods to assess ecological coherence of the MPA network. Moreover, it states that "such approaches can benefit national implementation by providing additional input and context for national planning of network extensions".
- The Secretariat of the Commission has interest on develop further cross-sectorial cooperation among all stakeholders concerned in MPA management.
- The Secretariat of the Commission shows interest in building a standardized mechanism of coordination between the different Atlantic MPA networks' institutions. This action promotes to enhance data collection and sharing monitoring and awareness-raising to build a common MPA database in a transatlantic scale. No particular topics were specified, neither specific format or document to develop it.
- OSPAR do not have any specific actions to improve coastal resilience within its MPA sites and network comprised within the Commission, and this topic has not been included as a point for discussion lately. Despite of that, national approaches are applied in the region. No information regarding an existence of a coordinate management or monitoring to improve coastal resilience in the MPA sites and network was provided.

- Potential collaborations with the Transatlantic MPA Network initiative:

- OSPAR develops actions and processes to enhance the management capacity of MPAs and it has interest in establishing connections and engaging with other actors within this sector.
- OSPAR was involved in the first stage of the Transatlantic MPA Network initiative and its Secretariat declares an interest to be implicated in its second phase. The role and type of involvement will depend on the scope as well as the setup of the project. The role could be minimum analogous as the one established in the past. OSPAR has improved its collaboration with CEP, which includes CaMPAM, as well as Abidjan Convention, and therefore its work could be considered as contributions in the project framework.
- OSPAR has a relevant experience related to its network of MPAs, in which includes the sites that have been collectively designated in ABNJ of the OSPAR maritime area.
- The Commission developed the OSPAR Data and Information Management Strategy (ODIMS) which considers the possibility to share its information and make it available to other databases decentralised, as well as to allow web services within their Commission to be able to add information from other sources.
- The Secretariat of OSPAR Commission shows interest in creating coordination between MPA institutions within an Atlantic scale to improve management effectiveness and/or to face other global challenges by establishing standardized protocols, methodologies and/or monitoring. No topics, fields, actions, monitoring, protocols/methodologies or target species/stakeholders to focus and develop were suggested on this regard.

6. Discussion

The outcome of this study regarding technical support offered by the regional networks of MPA managers at Transatlantic scale, and the exploration through the questionnaires suggest that exist a great potential for collaboration and coordination between the different institutions. This section describes the most relevant potentialities identified in this study, regarding collaboration and ways to link and mutually complement each network. The information is organized by subsections in a similar way than the part of the results from questionnaires to the staff of the regional networks of MPA managers.

6.1. SERVICES PROVIDED

Technical support

In a general overview, there are similarities between technical supports offered by all networks involved in the Transatlantic MPA Network initiative. However, in a closer analysis, the services provided by each of them are presented and developed with different approaches. In this way, each institution has a different approach while developing their function and services, accordingly to its environmental and socio-cultural context of its particular region. Consequently, a further exploration of the applicability of each network's technical support to the others should be conducted in more detail. Two methods were applied in this study to collect information regarding the technical support from the regional MPA networks of managers:

- The information gathering process.
- The questionnaires to the staff from the organizations.

There are differences between the data obtained through the two procedures, and therefore the discussion of the different results is presented separately, considering two subsections within each of the technical support aspects (management tools and capacity building activities). The origin of the contrast between the results obtained by the different methods may come from an array of reasons. In this sense, one of the most probable ones may be related to the temporal difference between the periods when the two data collection methodologies were conducted. Along these lines, the websites have been updated -some of them were temporary websites-, and also more documentation as technical support, in

capacity building activities, reports, and other tools have been added throughout the time between the two periods.

Management support tools

- Information gathered from the regional networks of MPA managers' websites

From the information gathering process, this study has identified, and can highlight, some technical support regarding certain topics with a potential interest for other regional networks of MPA managers, and therefore with benefits to the institutions by sharing them. Due to its general approach to a certain topics, the technical support cited below can potentially be applied to MPAs in other regions providing basic knowledge, methodologies and models to a certain management task. Furthermore, some protocols are referred to be useful to certain organizations lacking support for certain topics. The descriptions of the technical support of each organization in appendix 2 have been used to develop the suggestions described below. In this way, for each regional network of MPA manager it is specified its potentially useful technical support and the potential networks or institutions that could benefit from it:

- MedPAN: The Mediterranean network offers different guidelines which can be useful for the other organizations, such as "Snorkel surveys of the marine environment-Methodological guide", "Visitor use observation and monitoring in Mediterranean marine protected areas-A handbook for managers" and "Underwater trails handbook". None of the rest of the regional networks of MPA managers considered in this study offer guidelines specific for these topics. CaMPAM and RAMPAO could benefit from the "Guide for quick evaluation of management in Mediterranean MPAs", since they do not offer any protocol to report the MPA management status. In addition, "Surveillance and enforcement of regulations in Mediterranean MPAs-A practical guide" and "Sustainable financing of MPAs in the Med- A guide for MPA managers" could be an interesting guide for CaMPAM and NAMPAN that do not have this kind of support.
- RAMPAO: Most of the technical support provided by the West-African network is very specific to its region according to its environmental and socio-cultural characteristics. Consequently, most of the guidelines may be difficult to apply and be useful in other areas. However, there is a set of community outreach and awareness raising tools which can definitely be helpful for other MPA managers

from other regions ("Communication and public/internal information outreach tool-kit"). The "Essential guide to Socio-Economic Monitoring" can be profitable since none of the other organization offers protocols to address this topic. Moreover, the "Guide for developing simplified business plans for protected areas", and the "Practical guide for marine surveillance officers of marine protected areas" can be valuable for CaMPAM and NAMPAN because they lack these topics in their technical support.

- NAMPAN: The North American network has several technical supports which can be useful to the other organizations. The management guidelines potentially interesting to be shared are the ones to address climate change in MPAs, which are included in the set of guides within "Planning for MPAs in a changing climate"; and also "A guide to ecological scorecards for marine protected areas in North America". These management tools could be leveraged by CaMPAM and RAMPAO due to the fact they do not provide any support to manage climate change (despite RAMPAO responded that has technical support for climate change in the questionnaire, no guidebooks were find in its website regarding this topic); neither protocols to evaluate the status of their MPA sites. MedPAN offers both supports, but these guides could strengthen their assistance. Furthermore, another tool in NAMPAN that can easily be shared between organizations is the webinars, which are provided in its website to promote professional capabilities for the MPA managers.

CaMPAM only provides a unique extended guide to the mangers ("Manual: Training of trainers on marine protected areas management in the Caribbean") that includes several topics regarding the management of MPAs. Despite some parts of this guide may include interesting knowledge to other organizations regarding certain topics, the suggestion of sharing it have been not proposed in this study.

- Data from the questionnaires

According to the results obtained in the questionnaires filled by the staff of the regional networks of MPA managers, there are different management protocols and guidebooks from one organization that can potentially be used by another one. Table 14 shows the results obtained in the questionnaires regarding this information.

Table 14: Management support tools from MedPAN, RAMPAO, CaMPAM and NOAA according to the responses of the questionnaires to the organizations' staff.

Management support tools			Regional MPA Networks	NOAA
Report of the status of the MPAs and the MPA network				
Protocols guidebooks	Ecological benefits			
	Management plans			
	Socio-economic benefits			
	Sustainable financing			
	Sustainable fishing			
	Sustainable tourism			
	Planning MPA in Climate change			
	MPA Vulnerability assessment tool			
	Marine priority conservation areas			
	Methodological worksheets of communication, community outreach			
	Environmental education			
	Monitoring guides for…	Species		
		Ecosystems		
		Socio-economic		
		Climate change		
	Renewable energies			
	Business plans development for MPAs			
	Surveillance			
	Management of sacred/cultural natural sites			
	Governance			
	Aquaculture			
	Marine Spatial Planning			

From the results exposed in the above table, more complementarities between networks can be identified considering the existence or lack of assistance on different MPA management topics. According to these data, some tools addressing certain topics from one organization can be interesting to another as follows:

- Management tools with potential interest to MedPAN: Tools from RAMPAO can be interesting and useful for the MPA managers in the Mediterranean Sea. In this regard, the topics that MedPAN can be interested in are the guidebooks related to ecological benefits, renewable energies, environmental education, planning MPA for climate change, MPA vulnerability assessment tool, and marine priority conservation areas. However, it should be mentioned that no documentation was found on the last three topics in RAMPAO technical support when reviewing its website. Some of the RAMPAO's protocols are not considered here as they may be very specific of their environmental and social context.

- Management tools with potential interest to RAMPAO: The African network of MPA managers could be interested in the methodological worksheets of communication and community outreach from MedPAN. However, this is not suggested because in the first phase of this study when reviewing the networks' technical support, documentation to address this topic was found in the West-African organization ("Communication and public/internal information outreach tool-kit").

Despite NOAA is a national agency out of the Network Twinning project, it is part of NAMPAN, and therefore the same process of identifying interesting technical support for the regional networks of MPA managers is also exposed. In this regard, the management tools from NOAA can be interesting to other organizations as follow:

- MedPAN could benefit from the MPA guidebooks in ecological benefits, planning MPA for climate change, MPA vulnerability assessment tool, in environmental education, in monitoring ecosystems, in governance and in management of sacred/cultural sites.
- MedPAN and RAMPAO could be highly interested in the NOAA's protocol related to MSP.

Finally, as previously mentioned, in general CaMPAM could be highly interested to strengthen its technical support by adding or using many of the documentation of MPA management assistance from the other organizations.

Capacity building

As previously explained, the results obtained from the information gathering and the ones within the questionnaires show some differences. In this way, there are a few differences between the information found in the MedPAN and CaMPAM websites and the data responded in their questionnaires, and more significantly with RAMPAO. In the case of this last organization, no sufficient documentation was found confirming the activities related to its capacity building that the staff affirmed to have in the questionnaire. Despite of this deviation between the results, different potentialities can be highlighted from each type of outcomes obtained.

- Data obtained from the information gathering

In general, MedPAN and CaMPAM organise several capacity building activities which can be useful to the other regional networks of MPA managers which are lacking this kind of support. In this way, according to the data obtained in the information gathering, these two organizations provide trainings and exchange of experiences between managers in several topics that can be interesting to review for the interest of other regional networks of MPA managers. The capacity building from both networks with potential to benefit others and interesting to be shared are specified below, organizing the information by the type of the activity:

- Training: MedPAN and CaMPAM organize activities related to sustainable financing, as well as sustainable and efficient management planning, implementation and evaluation of MPAs and its networks. CaMPAM offers trainings on participative management and stakeholder/community involvement, sustainable tourism, alternative and sustainable livelihoods, environmental education, and on ecology. MedPAN provides training in sustainable fisheries, and in climate change and resilience.
- Exchange of experience between managers: Both regional networks of MPA managers offer these kind of activities (exchange visits and regional meetings for sharing experiences) in several topics, such as sustainable tourism, alternative and sustainable livelihoods, surveillance and enforcement, sustainable fisheries, ecology, environmental education and management of species of interest or invasive. CaMPAM also offers these activities in participative management and stakeholder/community involvement, as well as in sustainable and efficient management, planning, implementation and evaluation of MPAs and its networks. Furthermore, MedPAN organizes exchange workshops and visits on marine pollution.

- Data obtained from the questionnaires

The results obtained in the questionnaires regarding capacity building also show a great potential of complementarities and benefits in the process of sharing their activities between regional MPA networks. In this way, CaMPAM provides different activities for an important variety of different topics, MedPAN in less number, and RAMPAO just for a

few. This section focuses only on highlighting the technical support from one regional MPA network that can potentially be interesting for another that does not provide any activity to a particular management task. Only the activities with characteristics that have more probability to easily be shared -due to its general approach to certain topic- are highlighted, such as the trainings, the exchange visits and the exchange of experiences between managers. These capacity building tools can potentially complement and strengthen other regional networks of MPA managers' technical support. These suggestions are based considering the results exposed in table 4 from the section 5.2.1. The activities from each regional MPA network of managers are specified below:

- MedPAN: The exchange of experiences between managers and the exchange visits regarding mobile species, tourism, and land-based pollution can be interesting to complement CaMPAM and RAMPAO assistance in these topics. In this regard, the training workshop in financing could have the same effect.
- CaMPAM: Sharing the exchange visits, the training workshops and the exchange of experiences between managers from the Caribbean network regarding endangered/vulnerable species, marine activities exploitation, cultural heritage/sacred sites management, site maintenance and space of public use, and habitat/site restoration can be beneficial to the other organizations.

However, apart from the activities above mentioned, more capacity building tools from each network could probably strengthen the technical support of the rest of the organizations just by adding and completing their existent services.

Advocacy activities

The results of the questionnaires show a common interest of the regional networks of MPA managers in advocating. There are commonalities between organizations, especially between MedPAN and CaMPAM. However, the advocacy activities from the three regional networks can be more developed and expand it to other topics. In this way, CaMPAM could engage in fora, conferences, congresses or projects related to ocean conservation, climate change and fisheries. MedPAN could participate in more advocacy activities related to climate change, biodiversity and fisheries, in which currently only takes part in one activity in each topic. Moreover, RAMPAO could join also in events related to ocean conservation, biodiversity, climate change and also more in fisheries, since currently it does regional fora of this last topic.

Databases

From the information gathered in the questionnaires of MedPAN and CaMPAM, an exploration of coordination between organizations could be conducted in the three topics that they match, which are MPA databases on species, legal framework and GIS.

Information on specific conservation purposes of MPAs

The information gathered here regarding specific conservation purposes of MPAs suggests that the regional networks of MPA managers have a great potential to become a bridge to link different MPA managers from their organizations with similar conservational objectives. These links could be relevant for management topics related to mobile and invasive species, as well as for coastal resilience. Additionally, this point highlights the importance of the capitalization of the regional networks of MPA managers to promote and continue with the exchanges between MPAs involved in the other two twinning projects within the Transatlantic MPA Network initiative.

6.2. CHALLENGES AND STRENGHTS

Identification of management difficulties

The results obtained from the questionnaires regarding the management difficulties identified by the staff of the different regional networks of MPA managers show a great and interesting linking potential between them. In this way, the networks could unify efforts to organize and coordinate capacity building activities to address the same management difficulties faced by their MPA managers. This section puts attention only in the tasks which there is coincidence of high difficulty between two and three networks to prioritize possible collaborations. Table 15 shows the similarities between networks regarding management difficulties classified as high, and also displays the moderate category for these specific tasks. The consideration of presenting the moderate classification from the tasks categorized as high difficulty aims to promote and reinforce a trilateral link, since in many cases activities classified as high for two organizations are classified as medium for the other.

Table 15: Similarities between the regional networks of MPA managers -MedPAN, CaMPAM, and RAMPAO- in their classification of the MPA management activities, considering only the activities categorized as high and moderate difficulty.

MPA management activities		Level of difficulty within MPAs	
		High	Moderate
Ecosystem management	Biological connectivity and ecosystem integrity		
	Ecological research and monitoring		
	Habitat/site restoration		
	Small scale fisheries		
	Coastal habitat loss for tourist facilities expansion		
Other management activities	Socio-economic evaluation		
	Cultural heritage/archaeological/sacred sites management		
	Surveillance and enforcement/Ranger profession		
	Stakeholder engagement		
	Environmental education		
	Communication		
	Climate change		
	Planning		
	Integrated Coastal Zone Management (ICZM)		
	Marine Spatial Planning (MSP)		
	Financing		

MedPAN
CaMPAM
RAMPAO
MedPAN and CaMPAM
MedPAN and RAMPAO
RAMPAO and CaMPAM
MedPAN, CaMPAM and RAMPAO

As shown in the table above, there is different possible interest between regional MPA networks of managers in bilateral and trilateral coordination to create management activities and tools to address different common difficulties. The different bi and trilateral links are exposed below:

- Coordination between the three regional networks of MPA managers: The three organizations could collaborate in developing activities related to surveillance and enforcement, MSP, and financing.
- Coordination between two regional networks of MPA managers:
    - MedPAN and RAMPAO can unify efforts to create activities and tools in many topics, such as socio-economic evaluation, cultural heritage/archaeological sites management, ICZM, climate change, ecological research and monitoring, biological connectivity and ecosystem integrity, coastal habitat loss for tourist facilities expansion, and small scale

fisheries. The last five topics mentioned are classified as moderate by CaMPAM, and therefore a trilateral coordination could be also considerated.

- MedPAN and CaMPAM can coordinate to develop capacity building in stakeholder engagement and communication. The last topic is classified as moderate by RAMAPO, and therefore there is a potential of a trilateral link.
- CaMPAM and RAMPAO can collaborate in the creation of activities and tools related to habitat restoration, planning and environmental education. The last topic is classified as moderate by MedPAN, and therefore there is a potential of a trilateral connection.

Technical support to face management difficulties

Considering the management difficulties from each regional network of MPA managers and the technical support provided by the organizations to face these challenges, there is some potential to mutual complement and strengthen each other networks' assistance. Therefore, this subsection puts attention to specify one network's technical support available to potentially assist the management difficulties from the others. Thus, this exploration highlights the possibilities of complementation between organizations, with especial focus on the technical support with prospect to be more useful and applicable to other networks, such as MPA management guidebooks and protocols, training, regional experiences sharing workshops, exchange visits, working groups, video support, and external expertise or information exchange. Table 16 shows the combination of the MPA management activities classified as high difficulty by the three regional MPA networks of managers and the most relevant technical support provided by the organizations to assist the issues.

Table 16: Combination of the MPA management activities classified as high difficulty by the different regional networks of MPA managers and the technical support provided by the organizations to assist the issues.

MPA management activities			Activities classified as high difficulty by the regional networks of MPA	Technical support offered by the networks to assist the MPA management activities						
				MPA management guidebook and protocols	External expertise/ information exchange	Video support	Training	Regional experiences sharing workshops	Exchange visits	Working group
Ecosystem management	Biological connectivity and ecosystem integrity									
	Ecological research and monitoring									
	Mobile species									
	Endangered/vulnerable species									
	Invasive species									
	Habitat/site restoration									
	Small scale fisheries									
	Land-based activities' emissions: Urban waste									
	Tourism and recreational activities	Scuba-diving								
		Boat anchoring								
		Coastal habitat loss for tourist facilities expansion								
		Recreational fisheries								
		Sustainable tourism in general								
	Maritime transport									
Other management activities	**Socio-economic evaluation**									
	Site maintenance and space of public use									
	Surveillance and enforcement/Ranger profession									
	Stakeholder engagement									
	Environmental education									
	Communication									
	Climate change									
	Coastal resilience actions									
	Planning									
	Integrated Coastal Zone Management (ICZM)									
	Marine Spatial Planning (MSP)									
	Financing									

MedPAN
CaMPAM
RAMPAO
MedPAN and CaMPAM
MedPAN and RAMPAO
RAMPAO and CaMPAM
MedPAN, CaMPAM and RAMPAO

CaMPAM‘s management activities with potential to benefit other regional networks of MPA managers

In general, and on the contrary of the other organizations, CaMPAM offers a significant number of activities as trainings with possibilities to be useful to the others. In this way, and just focussing with the management tasks classified as difficult, RAMPAO and MedPAN could be interested in its trainings for several topics, such as biological connectivity and ecosystem integrity, socio-economic evaluation, ecological research and monitoring, climate change, MSP, surveillance and enforcement, ICZM, financing, and coastal habitat loss for tourist facilities. Moreover, the external expertise from the Caribbean network could be beneficial for both organizations regarding the last six management tasks previously mentioned.

Additionally, on its side, RAMPAO could benefit from the trainings and the external expertise of CaMPAM also on habitat/site restoration, environmental education, coastal resilience actions, and planning. The African network could also be interested in the exchange visits related to small scale fisheries organized by CaMPAM.

On the other hand, MedPAN could be interested in CaMPAM’s external expertise in mobile species, scuba-diving, boat anchoring, and invasive species; the last two also for training.

MedPAN‘s management activities with potential to benefit other regional networks of MPA managers

The Mediterranean network offers a variety of activities which can potentially be used by other networks to strengthen their support to their MPA managers. Accordingly, CaMPAM and RAMPAO could be interested in the MPA management guidebooks and protocols for financing, as well as in surveillance and enforcement. Moreover, for this last topic, MedPAN offers regional experience sharing workshops which can also be beneficial for both organizations, and similarly for environmental education.

Separately, RAMPAO can potentially use MedPAN’s MPA management guidebooks to foster their services related to ICZM, small scale fisheries, and climate change; this last topic also developed in the trainings. RAMPAO may be interested in the MedPAN’s exchange visits and working groups which assist aspects of small scale fisheries, as well as

its regional experience sharing workshops and video support for ecological research and monitoring.

On the other hand, CaMPAM could be interested in the training on communication organized by MedPAN to be able to face and strength its support on this difficulty.

RAMPAO's management activities with potential to benefit other regional networks of MPA managers

According to the table 16, RAMPAO does not offer an extended technical support for the management activities considered. However, there are tools which can be of interest for MedPAN. In this way, the Mediterranean organization can benefit from the external expertise from RAMPAO in ecological research and monitoring, mobile and invasive species; also this last topic in MPA management guidebooks.

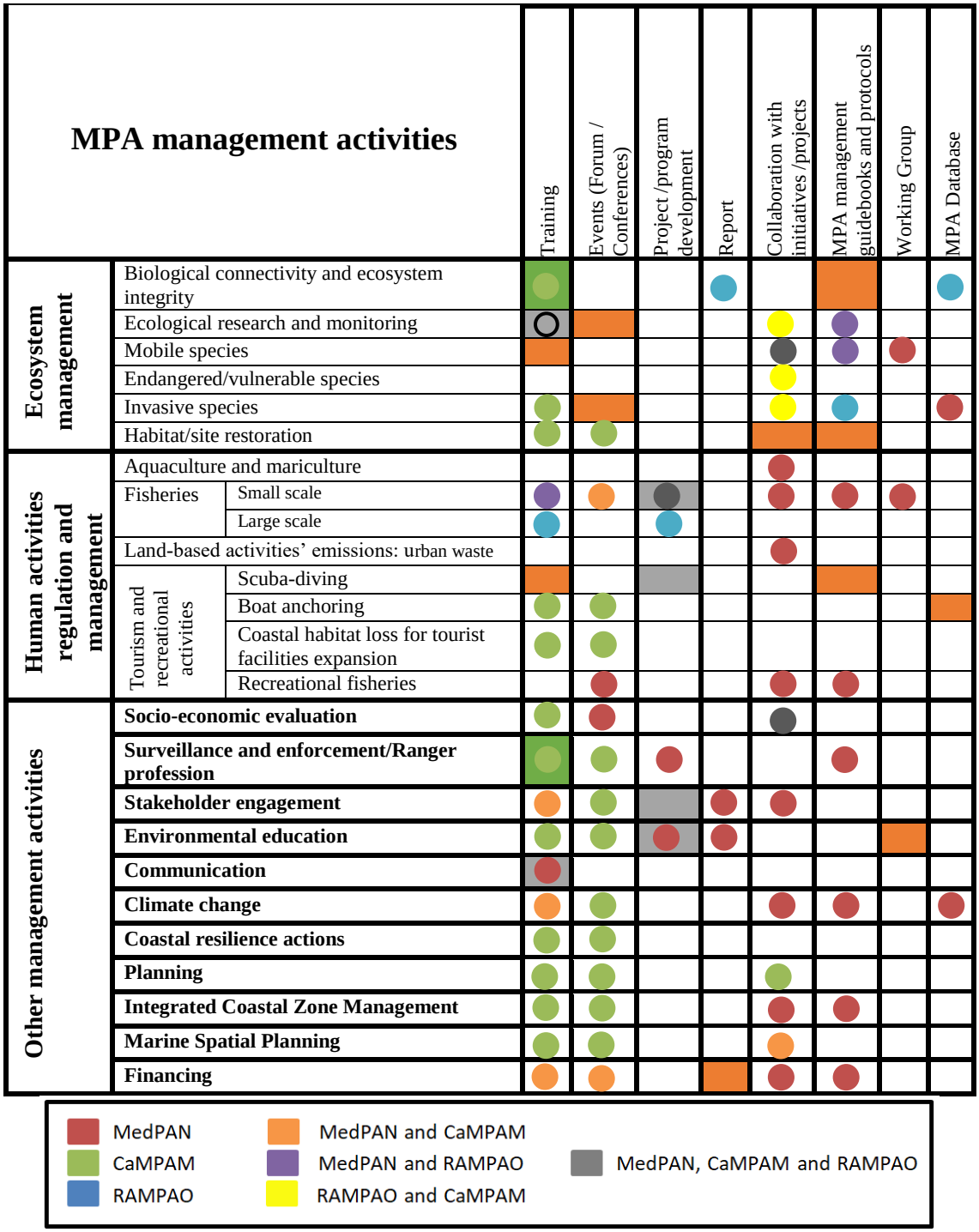
Suggestions of technical support improvements

According to the information obtained from the questionnaires regarding the opinion of the staff from the regional networks of MPA managers about the improvement actions for their technical support, the most relevant point identified was the creation of links between institutions or organizations and networking. This result confirms the necessity of expanding and developing links and collaborations between these organizations which is the aim of the Transatlantic MPA Network initiative. The second most important improvement is to strengthen MPA managers' capabilities by training activities, which potentially could be a result of developing the common strategy of this project. Implementing this strategy would increase the training availability for MPA managers in all the regions by means of different mechanisms and activities.

This subsection examines the possibilities that the technical support of the regional networks of MPA managers' potentially can offer to complement each other organizations, also considering some of the aspects of improvement suggested by their staff. Table 17 combines the results obtained regarding these two aspects in the questionnaires.

Table 17: Combination of the improvement actions for the technical support suggested by the staff from the regional MPA networks with the technical support provided by the organizations. The colour code is the same used in the previous tables as explained in the legend below. Squares are the improvement actions suggested and the circles refer to the technical support available in the different organizations. In the "project/programme

development" are included the "regional experience sharing workshops" and the "exchange visits".



According to the results in the table 17 there are just a few points that can be suggested in which technical support from an organization can possibly be useful, if applicable, to the aspects of improvement from another. In this way, the technical support from one organization which can be interesting to another is specified below:

- MedPAN could review if the training provided by CaMPAM regarding biological connectivity and ecosystem integrity, as well as surveillance and enforcement can be useful for the MPA managers in the Mediterranean.
- CaMPAM could also be interested in the projects or program development (experience sharing workshops and exchange visits) from MedPAN related to environmental education and small scale fisheries. Similarly, CaMPAM could also be involved with the training on communication from the Mediterranean organization.

RAMPAO provided general information and therefore no specific points are highlighted in this regard.

Limitations of the improvements suggested for the technical support

The outcomes obtained highlight that the most important limitations identified by the staff from the regional networks of MPA managers that they face within their organizations are related to the lack of both, financial and human resources available. However, the second aspect is directly linked and dependent of the insufficient economic resources of these organizations, and therefore more effort should be done regarding financial possibilities to expand their services.

This financial dimension has not been explored in this research since it is the target of the fourth axis of the MPA networks common strategy and is currently being developed by the networks as a specific outcome of the Transatlantic MPA networks twinning project.

Weaknesses and strengths

Related to the information extracted regarding the weakness and strengths of the different regional MPA networks of managers, only a directional benefit can be suggested since only MedPAN and RAMPAO provided specific information of this aspect. Accordingly, MedPAN have numerous topics in which has experience that can be interesting to be used by RAMPAO to strengthen their services, since this last organization only expressed weaknesses. In this way, the expertise of the Mediterranean network regarding small scale fisheries, socio-economic evaluation, climate change, ICZM, MSP, and financing can be potentially beneficial for RAMPAO.

On the other hand, MPA Center of NOAA and OSPAR have relevant experience in different subjects that could be extremely interesting to the Transatlantic MPA Network initiative. In this way, MPA Center of NOAA's mechanism to coordinate management or monitoring of climate change in their sentinel sites around US is a relevant expertise which potentially could serve as a reference system for further actions to be developed in the transatlantic initiative while addressing climate change at this scale. On the other side, OSPAR has expertise in the process to collectively design sites in ABNJ within the OSPAR maritime area, which is a mechanism that could be a future inspiration goal or approach in further actions within the transatlantic initiative scope.

6.3. POTENTIAL FOR COORDINATION AT TRANSATLANTIC SCALE

This part describes the potentialities of coordination identified between the different organizations that participate in this study. Apart of the three regional networks of MPA managers involved in the Transatlantic MPA Network initiative, the other two organizations expressed interest in establishing a link with this project. The MPA Centre of NOAA suggested coordination with the initiative through establishing an interagency council/board. On the other hand, the Secretariat of OSPAR Commission also showed interest to be involved with the project, not specifying the type of role that would develop.

Prioritization of MPA management issues

Several interesting points have been identified from the prioritization of relevant topics to coordinate between the regional networks of MPA managers at transatlantic scale. The responses in the questionnaires show common interests between the three networks, as well as between two of them. Therefore, considering this fact which brings up a different approach as well as a wider opportunity to link, a tri and bilateral coordination could be developed between them according to their common interests. In this way, the three organizations could collaborate in developing actions to enhance management effort and management plans achievement. On the other hand, RAMPAO and MedPAN could develop activities to work on topics of their common interest, such as climate change and fisheries management. Finally, CaMPAM and RAMPAO could coordinate actions and develop technical support in regard of the ecosystem services.

Standardized tools to address common management issues

No relevant points can be highlighted regarding the development of standardized protocols or methodologies among regional networks of MPA managers to address specific management actions and/or monitoring. The diverse nature of the responses from the different organizations in the questionnaires does not allow determining common topics to strengthen their collaboration and enhance MPAs management effectiveness. However, the results obtained from the MPA Center of NOAA, as part of NAMPAN, can be compared with the ones from MedPAN, since both expressed interest in coordinate topics between organizations at transatlantic scale. In this regard, two topics can be highlighted which both organizations were interested on developing cooperatively, which are the management and monitoring of mobile species and climate change.

Furthermore, the Secretariat of OSPAR Commission did not specify any topic to coordinate at transatlantic scale. However, it showed interest in improving management effectiveness by standardizing a mechanism between organizations.

Common data collection mechanism

All the organizations participating in this study, except RAMPAO, expressed interest in developing a standardized mechanism of coordination between them at transatlantic scale to enhance data collection and sharing monitoring tools. However, the responses were variable with different aspects to consider. Therefore, a further and deep exploration should be conducted identifying prioritized and common topics of interest among the regional networks of MPA managers, as well as the system to use in this regard.

Information and management tools exchange

There are no clear ideas between the regional networks of MPA managers regarding the mechanism to establish cooperation between them in order to share tools on facilitate information exchange, expertise advice, and compare management practices among the organizations. However, MedPAN suggested an idea which would beneficiate the development of the common strategy from the Transatlantic MPA Network initiative. The MPA managers' network from the Mediterranean proposed to establish a web space to exchange information and also organize webinars related to this topic. Moreover, it recommended organizing activities such as joint exchange visits, and training workshops

for MPAs to promote expert advice, as well as compare management practices between regions. On the other hand, regarding the exploration of topics of interest to be shared or collaborate between organizations, there are similarities in their prioritizations and therefore a potential to develop links. Once more, the results suggest that these connections can be developed in tri or bilateral levels, since there are similarities between the three, as well as two regional networks of MPA managers. In this way, the topics which the three organizations match with sharing tools, information exchange, expert advice, and comparing management practices are fisheries management and financing. Additionally, RAMPAO and MedPAN have several topics in common, such as climate change, biological connectivity and ecosystem integrity, coastal resilience actions, socio-economic evaluation, MSP, and planning. On the other hand, CaMPAM and RAMPAO only match in one topic which is environmental education.

Furthermore, the MPA Center of NOAA expressed interest in developing collaboration at regional MPA networks level to share management technical tools, coordinating and sharing management pilot/innovative projects, and establishing a management experience sharing platform.

On the other hand, the Secretariat of OSPAR expressed interest in establishing connections and engaging with other actors within the MPA sector to promote and improve the management capacity of the MPAs.

7. Conclusion and Recommendations

In accordance with all the outlined points suggested in the discussion, this study shows the existence of great potential among the regional networks of MPA managers to complement each other and improve their technical support, as well as to mutually benefit from unifying their existing efforts. Therefore, a common strategy that includes ways of linking, coordinating, organizing, collaborating, teaming up and sharing information and activities between the different networks will maximize their services, benefit their MPA managers and eventually improve the overall MPA management efficiency. Consequently, this study confirms the existence of a great potential to develop and implement the existing common strategy among the regional networks of MPA managers. This action will be an essential step, as well as an interesting and relevant contribution, to the process of linking the different organizations to work cooperatively. Additionally, the Transatlantic MPA Network initiative can trigger a promising impact to the MPAs, as well as for the management of different challenges in a transatlantic level. Moreover, it means an important step forward to achieve concrete results on the Atlantic Ocean conservation and other important global issues such as climate change through the MPAs. This section presents several recommendations and general remarks based on the possible coordination between organizations highlighted in the discussions. These points can be relevant to consider in the development of the common strategy of the Networks Twinning project from the Transatlantic MPA Network initiative. The suggestions are organized in subsections similar to those of the discussion, only citing those that have relevant points.

7.1. SERVICES PROVIDED

Technical support

In the process of sharing technical support between the different regional networks of MPA managers, an essential recommendation would be to develop, design and establish a virtual mechanism available for the four organizations: the Transatlantic MPA Network website. This virtual platform would serve for communication, fora for information exchange, space to link and cooperate, as well as to gather all the technical support from each organization with potential to benefit another one and the new one created. In this

way, management tools and capacity building activities shared between organizations would be available in this virtual platform. Future online knowledge exchanges could be designed based on NOAA's experience as a reference, and could be implemented and made available on the initiative's website. In addition, it would be important to promote the affiliation of other MPA organizations in the Atlantic to strengthen the initiative and enhance its benefits on a larger scale. In this way, invitations for partnership could be proposed to OSPAR, the MPA network of HELCOM, REDPARQUES, and Patagonian Forum. Moreover, promoting the involvement of more national networks would be also recommended to reach more national and local impact of the initiative, and also providing support to new MPA networks and other organizations within the sector in other areas, such as the Gulf of Mexico Network (MPAs from Cuba, USA and Mexico) and Central African network.

Management support tools

Further detailed and extended research should be carried out to confirm the applicability of the organizational management support tools that has been previously suggested in the discussions part of this study. This additional exploration would clarify the suitability of certain guidebook/protocol/report/management tools for the other regions, and also assess the benefits and the importance of sharing them among organizations.

In addition to the potential benefits of sharing these management support tools from one organization to the others, there are also issues that RAMPAO, MedPAN or CaMPAM do not currently consider. These topics may be relevant to all the organizations and their development can potentially be coordinated among them, in case of common interest. The topics would be related to the management of specific issues, such as marine oil and gas exploitation activities, marine cables and MSP. In this sense, NOAA provides MPA management support tools on this last topic, and its revision may also be of interest to the regional networks of MPA managers.

Capacity building activities

According to the aspects mentioned in the discussions, most of the capacity building activities organized by MedPAN and CaMPAM could potentially be interesting to strengthen the technical support of the other regional networks of MPA managers. However, it is crucial to develop a detailed and accurate review of the material created

under these capacity building activities to identify their applicability to other MPAs in other regions. Subsequently, if appropriate, proceed with the process of sharing them among the other regional networks of MPA managers, as well as exploring mechanisms to do so. Accordingly, the national, regional and international calendars of events regarding capacity building activities and knowledge exchange could be revised and shared between organizations in order to take advantage and maximize their benefits among MPA practitioners and institutions around the Atlantic.

Moreover, in future trainings and workshops to exchange experiences between managers, material support should be created to collect and record the outcomes of these activities and promote their availability to the organizations through the Transatlantic MPA Network website. In this way, the creation of short videos, webinars, summary reports or even live streaming systems for the activities of common interest between organizations could be organized. In addition, regional networks could cooperate to create simple protocols and guidelines for the process of creating these different materials from their capacity building activities. In this way, organizations could facilitate and promote its development involving MPA managers and other members of the regional networks. The capacity building tools which could be used in this regard are experience sharing workshops, exchange visits, trainings, projects, events, among others. In this way, these activities would be available for other networks, as well as reaching managers who did not attend these activities in the same region and in others.

On the other hand, new capacity building tools could be created cooperatively to assist issues related to invasive species, since no organization offers any activity in this area, and therefore may be of their interest. Accordingly, different levels of audience should be identified in the creation of new capacity building and knowledge exchange activities to design them according to the group addressed, which could include the partners implicated to the Transatlantic MPA Network initiative, but also expanding it to other groups that could be national and regional agencies or institutions as well as MPA managers.

Advocacy activities

All regional networks of MPA managers could participate in more advocacy activities in both national and international processes, as well as they could be involved in activities related to topics in which they are not currently involved, as specified in the discussions part. In addition, tourism, shipping, and marine oil and gas exploitation are topics that are

not developed in these activities and that may be of their interest. These actions would promote the voices of MPA managers to be heard in other sectors and at different scales.
Finally, establishing the Transatlantic MPA Network and having a common strategy and organization among all the organizations will strengthen, unify and expand their possibilities in this development, as well as enhance their influence at international level. However, this is the specific objective of the third axis of the MPA Networks common strategy, which is beyond the scope of this research.

Database mechanism

Verify if the unifying process of the existing databases that MedPAN and CaMPAM have in common -which the topics are related to different species, legal framework and GIS-, would be technically and economically feasible and also be significant to improve the effectiveness of MPA management on a larger scale. In addition, this topic could be further developed to ascertain and explore whether a common transatlantic database between all regional networks of MPA managers for certain global issues would improve monitoring the efficiency of MPA management and, at the same time, would also be feasible. Interesting topics could be related to mobile and invasive species, climate change, best MPA management practices, among other topics of interest.

Information on specific conservation purposes of MPAs for potential coordination of new management issues

Additionally, the results obtained in the questionnaire show that all regional networks of MPA managers do not develop actions for the management of coastal resilience, nor do they have a system to improve this issue at regional level. Therefore, this topic could be interesting and relevant to develop and explore for all the organizations through the creation of collaborative technical support, database or even a coordinated monitoring. The common strategy of the MPA Networks Twinning project could catalyse its establishment at regional or even transatlantic scale.

7.2. CHALLENGES AND STRENGHTS

Identification of common management difficulties for potential coordination to develop capacity building tools

This thesis conducted a first study to explore the potential coordination between regional networks of MPA managers to develop capacity building tools of common interests considering management difficulties faced by MPA managers in each region. Further consultations should be made among organizations to confirm and explore their real and possible interest in the suggested topics, as well as their willingness and ability to coordinate efforts and create technical support to address these common management difficulties. A bi or trilateral coordination could also be considered for the elaboration of these technical supports in case of different interests among all the organizations. The format of the tools created will depend on the topic and will consider the most efficient according to the environmental and social context, using new mechanisms and those already offered, such as guidebooks, protocols, exchange visits, trainings, experience sharing workshops, webinars, among others. However, a more detailed examination of this link should be developed regarding the suitability by region, the effectiveness and the viability of the material or activities created. In addition, the difficulties and interests of NAMPAN should be considered and incorporated into these suggested points of coordination between organizations.

Technical support with the potential to complement each other's assistance between regional networks of MPA managers to address their management difficulties

There is great potential to improve the assistance of each regional network of MPA managers for management difficulties at site level within each region through the use of existing technical support from the other organizations. As earlier mentioned, the topics highlighted in the discussions part should be reviewed. After confirming the applicability of these technical supports, it is important to promote the process of sharing them on a virtual platform, which could be the website of the Transatlantic MPA Network previously suggested. In this way, all the management support tools and services that can potentially bring benefits to other organizations would be available to the MPA managers of other regions.

If the existing technical support suggested for this purpose cannot be used, inter-organization consultations could be organized to identify common interests, prioritize issues, methods and other technical aspects to create new technical support.

In addition, the results obtained from the classification of the level of difficulty of the management tasks- according to the perspective of the staff of each organization- show a

significant number of activities classified as highly difficult. Common difficulties between the three regional networks of MPA managers included in this study are surveillance and enforcement, financing and MSP. Additionally, there are also a significant number of other difficulties in certain MPA management topics which are common between two organizations. According to these results, significant efforts must be made to minimize this situation by improving the technical support of the regional networks of MPA managers in the Atlantic region. The development of the common strategy of the Networks Twinning project could maximize actions to improve this problem.

Links between networks based on their weaknesses and strengths

Confirm the potential of the link to complement the function and service of the networks based on the weaknesses and strengths of these organizations identified in this study. In this way, organizations can complement each other by sharing their experience and services. Consequently, further exploration should be made as to whether the strengths identified in MedPAN could help improve RAMPAO's weaknesses in the topics suggested in the discussion section, as well as determine their interest in doing so. Additionally, a detailed examination of the weakness and strengths of CaMPAM and NAMPAN should be carried out to identify more possible collaborations and promote assistance and support among organizations according to their expertise.

7.3. POTENTIAL FOR COORDINATION AT TRANSATLANTIC SCALE

Considering the information obtained in this study on the potential link and coordination between all the regional networks of MPA managers at transatlantic scale, only common interests were identified in the prioritization of MPA management issues to coordinate between organizations. However, further consultations should be organized to explore the real interest of these regional networks of MPA managers to establish and develop mechanisms and systems to coordinate the topics suggested in the discussion. The three organizations expressed interest on coordinate the management effort and management plans achievement, which is related to MPA management efficiency and therefore a transatlantic evaluation of management effectiveness could be developed to determine the current and real state of the sites around the Atlantic Ocean. Other examples of management topics of common interest are climate change and fisheries management for

MedPAN and RAMPAO, or ecosystem services in case of CaMPAM and RAMPAO, issues that could be developed as bilateral coordination initiatives between networks. It is also interesting to contemplate the possibility of linking at different levels in bi, tri or tetra lateral collaboration between organizations according to their interests. These links and actions between organizations will strengthen their capacity at regional and larger scale. They will, as well, benefit to the development of the common strategy of the MPA Networks Twinning project. However, an additional exploration of more specific actions and the kind of mechanism that can be used to coordinate the prioritized issues should be developed, as well as identifying points of connection between networks. Moreover, the interests of NAMPAN should also be recognized and integrated into this process, and therefore additional consultations should also be organized between the regional networks of MPA managers for this purpose. However, the MPA Center of NOAA expressed interest in coordinating climate change issues in MPAs, which coincides with the interests of MedPAN and RAMPAO, and therefore could be a topic that NAMPAN might also be willing to get involved with. In this way, specific targets linked to address climate change impacts and ocean-based climate action could be explored and developed cooperatively between the regional networks of MPA managers and other institutions within the sector.

No more clear and conclusive common ideas and interests were obtained from the exploration of the potential coordination at transatlantic level regarding the establishment of standardized tools to address common management issues, nor in the development of a standardized mechanism of coordination between the regional networks of MPA managers at transatlantic scale to enhance data collection and share monitoring tools.

Despite of all the mentioned suggestions on the possibilities of coordination between the regional networks of MPA managers -as well as the potential benefits of certain links, information exchange, and sharing technical support and capacity building- explained in these last two sections of this study, it is important to highlight that these points will not necessarily be effective, appropriate, applicable and adequate in all cases. Therefore, an extended study must be developed in more precision and detail regarding the applicability of this technical support to MPAs in other regions; as well as a deeper research on the efficiency of the coordination between the organizations with the proposed connections. This study only presents a first exploration of the possibilities of collaboration and connection between the regional networks of MPA managers.

Other conclusions and recommendation points:

Other relevant points in general terms that can be highlighted from the analysis of the results of this study, and which may eventually be interesting to consider when developing the common strategy of the MPA Networks Twinning project are the following:

- The different nature of the organizational structure and functionality of the different regional networks of MPA managers. These organizational and governance models range from the project-based approach to a permanent structure as an association with permanent programs.
- A diversity of situations regarding regional networks of MPA managers in the Atlantic area. This diversity is related to different bio-geographic characteristics, as well as different social and cultural contexts and organizational models. However, the results also show great potential for cooperation based on the responses to the questionnaires.
- There is also an array of options for cooperation of the networks of MPA managers in the Atlantic with other national and international bodies. The Transatlantic MPA Network initiative already provided a context for collaboration, as in the case of NOAA as a national agency, and OSPAR as an International Commission for a Convention.
- The need to establish and strengthen the links between national and regional networks to reinforce both levels, as well as creation of other regional networks of MPA mangagers at transatlantic scale for further project development.
- Possible long-term future objective for the Transatlantic MPA Network initiative could be to prepare a status report or a joint assessment of MPAs at the transatlantic scale, or also coordinate it at the bi or trilateral level.

8. Limitations

Several limitations of different nature appeared in the course of the development of this master's thesis, within both processes of revising and recollecting data. In the first phase of this study of revising the information and documentation available of the different regional networks of MPA managers in their website, the researcher faced a language difficulty in the case of RAMPAO. The African MPA managers' network provides most of its technical support and internal reports in French, which the author of this study does not understand. However, translation programmes were used to overcome this limitation and understand the contents of the documents.

On the other hand, most of the difficulties in the development of the thesis were related to its second phase during the extraction of data by using questionnaires. In general, all the different steps of the process associated to the surveys was notably slow, from the questionnaires' design during the participatory process with the target people, to the moment that the researcher received the questionnaires answered back. Many reasons are related to this slowness, which created and promoted this lengthening during the process of the survey. One aspect could be the way of distribution via online of the questionnaires, which can delay when the questionnaire is received by the target people due to it is in the "email spam", or other aspects related to a no face-to-face survey. Another important fact could be the professional profile of the target people in the survey who are in a certain position in a relevant or even public governmental institution with large amount of responsibilities and duties to achieve within strict datelines. Therefore, the target people in the questionnaires generally have a large list of internal work priorities, and lack of time to dedicate to projects out of their institutional competences. Moreover, the extended and complex nature of the questionnaire implies to spend a relative large amount of time to be able to answer it properly. Another fact could be related to the cultural differences related to the time perception and its organization, since all the targeted people were from different continents with different sociocultural context.

Moreover, several and diverse issues occurred during the process of the surveys, which slower down the elaboration of this study significantly. One of those was lack of communication with one of the targeted people from the regional networks of MPA managers involved in the Transatlantic MPA Network initiative because of a sever sickness, which lasted for few months. Another one was for the virtual isolation of the

target person within NAMPAN due to the USA governmental shutdown of the institutions between mid-December 2018 and end of January 2019. This event made impossible the communication and consultation with this particular person in the process of the feedback of the questionnaire's design, stretching the time of waiting to proceed with further steps of this process. After few months in contact with staff from NAMPAN and several emails regarding this study, the staff from this organization considered inappropriate its participation because of its transition process related to internal and structural organizational changes. This last aspect described is connected to another limitation of this study which is the insufficient amount of data collected regarding a certain issue. The reason of this fact is because of the missing data from some of the targeted organizations because of their no participation in the survey, with special relevance in the case of the organizations linked to the Transatlantic MPA Network initiative, which includes NAMPAN, French Biodiversity Agency and Biodiversity Foundation of Spain. This lack of participation in the survey was due to different reasons, which some were specified and some others are unknown. One of the reasons is related to the aspect previously mentioned, regarding the type of target people in this study whom have heavy amount of responsibilities and lack of time for external projects. Moreover, two target organizations did not participate because of different issues, one for a governmental bureaucracy process, and the other for an institutional transition within the MPA networks sector, cases of Biodiversity Foundation of Spain and HELCOM consecutively, both explained in the results section of the questionnaires.

Additionally, other difficulty in the process of processing the data obtained in the questionnaires was related to the variability and different nature between the responses of the same question from the different organizations. Also, the insufficient or significant difference between the amounts of data provided by the organizations was a challenge while applying the statistic methodology to process and visually expose some of the data of the questionnaires. Furthermore, a relative limitation was also observed in the information provided in some of the questions, which was the result of restricted knowledge in certain topics which were difficult to support due to lack of previous research.

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Appendix 1

TOWARD A TRANSATLANTIC PARTNERSHIP OF MARINE PROTECTED AREAS

COOPERATION AND COMMON STRATEGY BETWEEN MPA NETWORKS OF MANAGERS IN THE ATLANTIC REGION TWINNING PROJECT

COMMON STRATEGY OF MPA NETWORKS OF MANAGERS

INTRODUCTION

This document summarizes the **results of several exchanges and debates** between the six partners of this twinning project plus several other networks (regional and national) and actors acting in the Atlantic for Marine Protected Areas (MPAs) management, in the context of the two years activity of the EU Transatlantic Marine Protected Areas Network Project. The main events that allow these exchanges were:

- Kick off workshop of the Transatlantic Project. Brussels (Belgium), November 2016.
- 1st workshop of the twining on MPA networks of managers. Montecarlo (Monaco), April 2017.
- UN Ocean Conference. New York (USA), June 2017.
- 2nd workshop of the twining on MPA networks. Tenerife (Spain), July 2017.
- Several events during IMPAC 4. La Serena-Coquimbo (Chile) September 2017.

The main partners of this twinning include four regional networks of MPA managers:

- UN Environment Caribbean Marine Protected Area Management Network (CaMPAM),
- Mediterranean network of Marine Protected Areas managers (MedPAN),
- North America Marine Protected Areas Networks (NAMPAN)
- West Africa Network of Marine Protected Areas (RAMPAO)

Two national institutions working with MPA networks also joined the project:

- French Biodiversity Agency
- Ministry of Agriculture, Fisheries, Food and the Environment through the Biodiversity Foundation from Spain

This twinning project was designed to **strengthen the existing MPA networks of MPA managers and supporting their common actions**; and it included both, technical and advocacy components with the aim of helping to:

a. Identify the key actions that networks are doing to support the effective management of MPAs;
b. Showcase the value of working at a transatlantic scale, raising the profile of what they do, and contribute towards resource mobilisation for future networking;
c. Draft and develop a joint action plan and/or strategy by the involved networks;
d. Connect with MPAs that are not yet linked to any existing network; and
e. Strengthen national networks of MPA managers and promote new regional MPA networks

Other regional and national networks and institutions have also been invited to participate in the different workshops and events to enrich the debates.

WHY A COMMON STRATEGY BETWEEN MPA NETWORKS IN THE ATLANTIC?

Networks of managers of MPAs are essential catalysts and facilitators for the development of well-managed ecological networks of MPAs. Over the past decade, several examples of MPA managers' networks have developed in regions within the Atlantic basin. Some of them have a project based approach and limited life and geographic coverage (MAIA, PANACHE), while others --now involved in this twinning-- are more permanent arrangements (CaMPAM, MedPAN, NAMPAN, RAMPAO).

Networks of MPA managers are recognized for their capacity to respond to MPA managers' needs and for being a platform of knowledge production and sharing. But still, their potential to channel information and to champion the new marine conservation challenges might not have been fully used…Working for the same goal, regional MPA managers' networks have a great potential for teaming up and help the MPAs' agenda moving forward[1]*.* However, despite all the benefits that networks provide, none of them is strong enough, and they face constant difficulties to guarantee their activity in the middle and long term. This vulnerability means less support to the MPA managers in their respective regions and more difficulties in reaching the CBD targets for marine and coastal biodiversity.

A common strategy allows regional MPA networks to build on their existing efforts; capitalize on their results; and increase their technical, financial and strategic capacity in order to contribute to their sustainability, as one of the key pillars to **guarantee a permanent networking mechanism in the Atlantic** at the end of this EU Transatlantic MPA project.

A common strategy of MPA networks in the Atlantic can have strong impact and also **play a leadership role at a global level** by supporting the establishment or strengthening of MPA managers' networks, **acting with the same approach in other oceans**. This twinning project has served as a ground-breaking exercise in strengthening MPA managers' networks by working together and developing common strategies.

[1] MedPAN study about Regional MPA networks. Let's Act together. 2016

MAIN AXIS OF ACTION

Many issues of interest have been raised during the workshops, but not all of them have been consider appropriate to be included at this stage in a common strategy (e.g. unification of databases) due to its complexity or economic cost. Finally, the main axes that have been identified as more relevant, priority and feasible, to be developed in a common strategy between MPA networks are:

1. Sharing information, knowledge and tools
2. Building network capacity
3. Influencing policy
4. MPA managers' networks financing

Despite this classification, most of the elements are interlinked between the four axes, since each of them have a direct impact in the others.

1. SHARING INFORMATION AND TOOLS

There is an ongoing need for information to strengthen MPA managers' capacities, as well as for immediate and responsive communication. A number of bilateral technical exchanges already exist between the involved regional networks, as well as between them and some national networks, scientific community, and other stakeholders, but these do not have a transatlantic scope or a focus on MPA networks with common goals.

The common strategy aims to establish common goals for networks regarding technical support to MPAs by:

1. **Sharing management tools** already collected by the networks, including the use of Open Channels as an online platform and newsletter, to disseminate those tools among the MPA managers' community across the Atlantic. This communication channel would include MPAs that are not currently linked to any regional network.
2. **Building information and capacity through joint webinars** on issues of common interest for networks in the Atlantic region (such as those hosted by Open Channels and NOAA's MPA Center);
3. **Updating MPA data in the Atlantic region** by working in collaboration with networks and countries to provide data to the World Database of Protected Areas (WDPA) and the WCPA-Marine Click to Connect (clicktoconnect.wcpa).
4. Launching **joint activities** to better showcase/demonstrate the value added of MPAs as sentinel sites to monitor impacts of climate change or as sites to monitor mobile species (such as marine mammals) at the Transatlantic scale
5. Supporting **information sharing** and links between MPA networks and scientific community as well as other stakeholders' platforms (fishermen…).
6. Exploring opportunities to create **new tools** (such as short video) helpful for all networks on common issues at transatlantic level (such as the benefits of no-take zones).

2. BUILDING MPA MANAGEMENT CAPACITY

Capacity building is a key activity of all regional MPA networks, including through training and learning exchanges. Networks can collaborate to:

1. Carrying out **assessments** of the needs and expertise and **gap analysis** within each network to guide the capacity building.
    - Targeting the audience (from rangers to directors of the MPAs, members of the MPA's Management Boards, other stakeholders, donors, decision-makers…)
    - Identifying specific and needed training topics (climate change, financing, ICZM and MSP, small-scale fisheries, tourism, socio economic benefits)
    - Establishing the timescales for capacity building: short/medium/long term
    - Assessing the implementation and impacts
    - Identifying MPA "expertise centres": to share expertise on specific issues
2. **Taking advantage of training/learning opportunities** of the national and regional networks by managers of other networks. Each network would inform other networks, on a regular basis, about the coming events they will organize, in order to identify expertise of MPA managers from other networks, increase knowledge, and to enhance collaboration and sharing between networks.
    - Trainings, and training of trainers / workshops organized in one region inviting MPAs from another region
    - Open some events of a regional MPA network (e.g. CaMPAM Training of trainers) to MPAs from other regional networks
    - Continuous support: webinars
    - Academic facilities and scholarships
    - Training on the job by means of continuous access to information
3. **Learning by visit exchanges** of MPA managers to share lessons in sites where can be learned
    - Creating a directory of MPA experts' contacts (or merging the existing ones) with the aim of facilitating future direct exchanges and twinning activities between MPAs
    - Different capacity building strategies: exchanges of small groups, personal contacts, e.g. one on one exchange visits between MPAs in different regions (twinning or sister sites); mentoring and soft mentoring, twinning, coaching, etc.

The capacity-building axis could be crucial to **strengthen national, sub-regional, thematic and regional networks of MPA managers**. **The transatlantic networking mechanism could have a role by** improving performance and governance of each network at different

levels: with identification of key factors for success, critical elements, sharing lessons learnt and best practices among networks. This would then serve as the foundation for establishing and/or strengthening national and regional MPA managers' networks **beyond the Atlantic Region.**

3. INFLUENCING POLICY

This is a very innovative part in the common strategy, and a great opportunity for networks to **strengthen their capacity to raise funds** for recurrent networking activities **and raise awareness** about their added value for the community of managers of MPAs in the Atlantic. It would also promote the role of effective MPAs in increasing marine ecosystems' resilience to climate change, and the restoration of important services to the coastal communities such as: sustainable fisheries, tourism and coastal protection. This level of collaboration will be accomplished by:

1. **Sharing resources, establishing partnerships, building synergies** between the networks and developing actions together to:
    - Raise awareness and influence national, regional and international policies to support effective MPAs and networks
    - Explore policy and donors (public and private) to promote joint fundraising for the sustainability of networking activities in the Atlantic and at national/regional levels as well as for direct financing support to MPAs (including through new channels such as Blue Carbon, payment for ecosystem services, etc.).
    - Communicating with policy makers and donors at different levels about socio-economic values of MPAs and spread good experiences of conservation in the broader economic context.
2. **Developing joint messages and specific strategies** to raise MPAs and MPA managers' networks voices at international fora. For example, during 2017, actions were taken to advocate for the role of regional MPA networks and their importance in improving the management effectiveness of MPAs focused on three main events of the international agenda:
    - UN Ocean Conference, on SDG 14 (June 5-9, New York, USA)
    - International Marine Protected Areas Congress (IMPAC4) (Sept 4-8, La Serena, Chile)
    - Our Ocean Conference (Oct 5-6, 2017, Malta)

    In 2018, a joint campaign could be developed related to CBD COP14 (10 - 22 November, Sharm El-Sheikh, Egypt)
3. **Promoting** the signature of countries and institutions joining the **Call for Joint Action by MPA networks** that was launched during IMPAC 4.

4. MPA NETWORKS FINANCING

During the Tenerife workshop (July 2017), participants explored the role of existing networks (national, regional) as well as the potential role that a transatlantic networking mechanism (or the result of a transatlantic common strategy between networks), could play in terms of contributing to mobilise resources for MPA networking in the Atlantic. Depending of the different kind of sources of funding or donors, different actions could be implemented jointly or individually by the networks.

TRADITIONAL FUNDS

RESOURCE PROVIDER	ACTIONS
National public funds / bilateral cooperation	• Continue/increase for both regional and transatlantic networks • Add USAID, CIDA, FFEM, German, UK and Netherlands cooperation and other bilateral donors • Propose the new Blue Action Fund (KFW) to target networks
Multilateral donors	• GEF→ can target regional projects (e.g. Large Marine Ecosystems) • Green Climate Fund • EU → transatlantic project • *A mechanism such as the ENI Med and Eastern Europe could be an interesting model for the Caribbean* • *The GEF's Caribbean LME project should be explored for complementary funding*
Members of networks	• Develop new membership fee • Increase existing membership fee • Develop mechanism to receive cash or in-kind donation
Private Foundations	• Oak Foundation, Oceans 5 etc.…
Regional seas conventions, Regional fisheries management organisations (RFMOs) and others partners	• Maintain/ increase support • *BIOPAMA programme as a source of funds for capacity-building* • *Coordination/communication with UNEP Regional Seas to identify potential funding opportunities*
Conservation Trust funds	• Regional • National (lobby needed)

NEW FUNDS

There is a potential for mobilizing new funds for networks in the Atlantic through a supra-regional project/approach presented (at least) by the four regional networks involved on this twinning, together (including the institutional strengthening of each network).

RESOURCE PROVIDER	TYPE OF SUPPORT
Resilience / infrastructures development sector	• Investment companies • Regional development banks • Insurance companies • Green Climate Fund • Blue Carbon market • Payment for ecosystem services • EU, bilateral cooperation
Tourism sector	In-kind support. e.g.: • Hotel giving meeting rooms for free for example: • Cruise/airplane companies – a network can present a portfolio of actions in local MPAs and take overhead • Label given to hotels with a counterpart for the network
Other opportunities	• Expertise/provision of service • Pro bono • Impact investment • Sponsorship (private company to present products during events organized by network, or within the newsletter of the network)
Crowdsourcing	Campaigning at regional or transatlantic levels: • Around one emblematic species or around several local MPA projects (portfolio) • Including overhead taken by the network to lead the campaign
Funding from fisheries and extractive industry (oil and gas; mineral and mining…)	• Fisheries agreement of EU (% of sectorial support for network) • Corporate social responsibility -> % for network

ADDITIONAL CROSS-CUTTING ELEMENTS/RECOMMENDATIONS FOR THE FUTURE ON FINANCING

- Set-up a task force of countries at transatlantic level to work on model legislation or policies that could be supported in multiple countries (related to offset, oil spill, taxes, etc.) and promote regional activities (to be then financed by these new national mechanisms).
- Need to identify: What is the best legal status for a network to fundraise?

- Need to adopt common language between conservationists/MPA networks and private sector/finance sector (e.g. the project from Vertigo Lab Blue Seeds to offer an interface between conservation and private sector worlds).
- Need to have specific skills/expertise to target such private funds.
- Need to develop messages/communication related to: Ecosystem services valuation, MPAs as “natural infrastructure” / socio-economic benefits of MPAs, added value of networks, MPA value in addressing climate change issues
- Strategy: we have to distinguish:
    - Short-term
    - Mid-term
    - Long-term
- Benefit from international conferences to contact with new donors and partners

Appendix 2

Summary of the technical support from MedPAN, CaMPAM, RAMPAO and NAMPAN

This part exposes a bibliographic revision of the information available in the respective websites online from the different MPA Managers' Networks.

This appendix presents a summary of the technical support offered to assist the MPA practitioners' members of each MPA Managers' Network, as well as the main areas which are considered within their services. The technical support will be classified between "information and communication support" and "activities" to distinguish electronic documentation and services that are provided permanently through the network's website, and temporal events and services which are related to a person to person experience, financing resources, external links and collaborations with other institutions.

CaMPAM

The technical support that CaMPAM offers to the managers associated within their region is cited below and all the information has been extracted from the initiative's website (http://campam.gcfi.org).

a) Information and communication support:

a. MPA Management Guidance Reports:

i. "Management capacity assessment of selected coral reef marine protected areas in the Caribbean": Study which evaluates and identify the necessities regarding capacity building to enhance marine protected areas management in the Caribbean (Gombos, et al., 2011).

ii. Documentation with collaboration with other institutions: "Manual: Training of trainers on marine protected areas management in the Caribbean": Manual used for a training organized by the CaMPAM network and has different modules which exposes key issues relative to the management of MPAs. The information provided there is related to adult education, training and communication abilities, knowledge on the marine environment of the Caribbean and their uses and threats, a general outlook of MPAs in the region, guidance in participatory planning as well as MPAs planning, MPAs management and finally monitoring and research within the sites (UNEPCAR-RCU, 2007).

iii. Reports of activities: Reports of the different activities that CaMPAM organizes are available on their website. Accordingly, reports on the "Training of Trainers" events can be found and they describe different details such as the course implementation, the venue and dates, instructors, participants, program evaluation, course agenda among other information (Seatone Consulting, 2012). Moreover, there are other meeting reports on the project of UNEP-CEP "Regional support for the Caribbean Challenge Initiative" and other documents from the "Mentorship Program Project" ("CaMPAM/Caribbean Challenge - Gulf and Caribbean Fisheries Institute-CaMAPM", n.d).

b. Electronic forum or email list: It provides a virtual platform where important information is listed for MPA managers, scientists and other interested practitioners. In this way, research information, books and other tools within the field, conference announcements, new web sites, webinars, scientific articles and reports, job opportunities and grants are posted and available for the members of the network. It also offers a virtual link to request information, ask advice from peers and experts, discussions and disseminate messages from other Internet Lists. CaMPAM-L is also available as a list for interested people in MPA management, policy, science and governance within the Caribbean and it is promoted by the Gulf and Caribbean Fisheries Institute. It serves for circulation mail list that distributes personal and institutional messages on a variety of subjects related to marine conservation and area management. Contacts of professionals linked to CaMPAM and other external institutions related to MPA are offered in "CaMPAM Executive team" and "CaMPAM Leadership and Resource Team (CLRT)" ("CaMPAM/Caribbean Challenge - Gulf and Caribbean Fisheries Institute-CaMAPM", n.d).

c. MPA Database: Digitalized and electronic resource which presents information and characteristics of numerous MPAs located within the Caribbean. It cites different variables including 77 fields which comprehend legal, biophysical, identity and management parameters. These data are available to elaborate periodic reports and regional analyses. However, this tool is currently not available in the website due to CaMPAM is developing and populating the database with completed and up-to-date information ("CaMPAM/Caribbean Challenge - Gulf and Caribbean Fisheries Institute-CaMAPM", n.d).

d. Factsheet: Electronic documents with basic and general information of nine MPAs within the Caribbean region. The information presented are divided in different sections which are the "Identification" that specify the country, marine ecoregion, boundaries, total area and shoreline length; "Biophysical features" where geological features, terrestrial flora and fauna species, marine habitats, marine flora, invertebrates, fishes, turtles and endangered species are cited; "Management" aspects are exposed such as primary management institution and other institutions involved, management objectives, date of establishment of management framework, management programmes, funding sources, fisheries resources and regulations, coastal development, issues or threats for accomplishing management objectives, role of site in network; as well as their "legal framework" detailing year established, legal citation, website, primary responsible institution, address, phone and fax number and email. However, the information provided varies depending on the MPA site ("CaMPAM/Caribbean Challenge - Gulf and Caribbean Fisheries Institute-CaMAPM", n.d).

e. GCFI / CaMPAM Library: Online section where research papers, technical reports, pamphlets, brochures and other web sites are available related to marine protected areas management and fields related ("CaMPAM/Caribbean Challenge - Gulf and Caribbean Fisheries Institute-CaMAPM", n.d).

f. Public Outreach Tools: List of videos of MPAs and other initiatives and projects related to marine conservation and management ("CaMPAM/Caribbean Challenge - Gulf and Caribbean Fisheries Institute-CaMAPM", n.d).

b) Activities:

a. Trainings: These activities are offered to build capacity of the MPA managers though educational workshops and simultaneously promote networking among participants as well as with the experts.

   i. "Training of Trainers (ToT)": These workshops are regional courses that occur each two-three years which provide instruction to the MPA managers to foster professional capabilities for better performance while managing the protected areas. They are linked to a "follow up local trainings" by the trainees in whom knowledge acquired in the ToT by the managers is used to implement different activities (consultation meetings, trainings, etc.). UNEP-CEP is partially financing by grants the "follow-up" activities. The training provided by this activity is based on the knowledge offered by the "Manual: Training of trainers on marine protected areas management in the Caribbean" cited previously in the section of "MPA management guidance reports". Therefore, the topics instructed are in tropical coastal and marine environment ecology, their ecosystem services as well as the uses and impacts associated, research and monitoring to evaluate MPAs' effectiveness functionality, MPA management operations, participative management and stakeholder and community involvement, and sustainable financing strategies , tourism and livelihoods (Prada T.M.C., 2016).

   ii. "Mentorship Program Project": This program pretends to enhance professional competences and efficiency of the managers' performance in their MPAs though mentoring programs leaded by senior marine resource professionals from the Caribbean. The group of experts serve as mentors to the network's members by providing individual technical assistance, modelling and offering the chance to apply new skills and approaches to a certain management issue within the MPAs ("CaMPAM/Caribbean Challenge - Gulf and Caribbean Fisheries Institute-CaMAPM", n.d).

b. Exchange of experiences between managers: Activities which knowledge, practical experience and expertise are transferred between managers of the network.

   i. "Sharing of lessons-learnt and networking": Yearly face-to-face meetings hosted by the Gulf and Caribbean Fisheries Institute (GCFI) Annual Meetings/Conference during the MPA session. This event gives an opportunity to the members of CaMPAM to meet personally and debate important marine scientific findings as well as the chance to share their experiences, fails and success in their different management performance such as implementation of strategies for regional conservation and management of fisheries and marine resources, scientific monitoring, among other topics. These gatherings foster the collaboration among MPAs and provide the space for creation of cooperative projects between different sites and countries. ("Small Grants Funds - CaMPAM - Gulf and Caribbean Fisheries Institute" n.d.).

   ii. "Learning exchange": Exchange visits of the staff from one MPA to another which share similar management challenges but with more successful results while solving the issue. This activity pretends to foster networking and share expertise and lessons learned from one site to the other, and therefore serve as an inspiration experience to MPA managers and/or other stakeholders such as

fishermen, teachers, policy makers, students, general public and boat crews. The topics considered in this exchange learning visits have been related to effective MPA management thought enforcement, monitoring technics and community involvement, stakeholder environmental education on MPAs function and role while supporting alternative and sustainable livelihoods by promoting ecotourism initiatives, action plan for manage invasive species and environmental education to different public sectors (lionfish), sustainable fishing practices and aquaculture, fishing cooperatives, stakeholder economic alternatives within MPAs, sea turtle conservation, monitoring and management ("Small Grants Funds - CaMPAM - Gulf and Caribbean Fisheries Institute" n.d.).

c. Financial resources: Programs that serve as an economic support for projects development.

   i. "Small grants fund": This service provides financial support as well as technical assistance and expertise to projects which foster sustainable MPA and fisheries practices while promoting alternative livelihoods for local communities. It is also related to CEP/SPAW initiative which pursuit to develop appropriate management plans and programs for priority species of regional concern. This program creates the space and time for exchanges between countries, MPAs sites and different communities within the region, so lessons learned from each part can be shared ("CaMPAM/Caribbean Challenge - Gulf and Caribbean Fisheries Institute-CaMAPM", n.d). This programme has supported projects in six countries of the Caribbean (Dominica, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, Antigua and Barbuda, and Grenada). The projects also aimed to foster the implementation marina managed areas (MMAs) as well as strengthen the ones that already exist and establish sustainable mechanisms and financing to create MMA networks. Moreover, it pretended to apply and make available tools for decision making processes while including data from different key areas linked to ecology, socioeconomic aspects and climate change (CaMPAM and SPAW-RAC, n.d.).

d. Collaboration with other initiatives/projects: This organization collaborates with different institutions such as the Nature Conservancy, Gulf and Caribbean Fisheries Institute, the UNEP-CEP, National Oceanic and Atmospheric Administration (NOAA), the Italian Ministry of Foreign Affairs among others. CaMPAM and these organizations contributes to the following projects:

   i. "Caribbean Challenge initiative": This collaborative action aims to reach the 20 percent of the Caribbean marine and coastal environment protected and efficiently managed by 2020 as well as to establish sustainable financial mechanisms to sustainably support the conservation and management of the marine resources in the region ("Goals of CCI-Caribbean Challenge Initiative", n.d.). The countries involved with this challenge are Jamaica, Saint Lucia, Saint Kitts and Nevis, Bahamas, Saint Vincent and the Grenadines, the Dominican Republic, Grenada as well as Antigua and Barbuda ("CaMPAM/Caribbean Challenge – Gulf and Caribbean Fisheries Institute and CaMAPM", n.d.).

   ii. "Regional support for the Caribbean Challenge initiative: Networking, consolidation and regional coordination of MPA management": This project seeks to support the "Caribbean Challenge initiative" and help the countries associated

to reach its objectives, as well as to develop a MPA network which is ecologically representative. It also seeks to strengthen resilience of the countries involved to adapt to climate change issues based on the SPAW Protocol objectives ("CaMPAM/Caribbean Challenge – Gulf and Caribbean Fisheries Institute and CaMAPM", n.d.).

iii. "Marine Protected Area Management Capacity Assessment Project": The objective of this project was to identify and notify actions to be executed by NOAA and CaMPAM to enhance MPA management capacity gaps and needs within the Caribbean. In this regard, information of key gaps in MPA management capacity was facilitated though the assessment to guide the institutions to develop and plan services to fulfil MPA management capacity needs by funding, training and other technical support (Gombos M., et al, 2011).

This organization contributes to national and international MPA initiatives. It collaborate with different projects such as Biodiversity and Protected Areas Management (BIOPAMA) programme in the Caribbean, Eastern Caribbean Marine Managed Areas Network (ECMMAN) programme, Regional support for the Caribbean Challenge initiative: Networking, consolidation and regional coordination of MPA management, Global Island Partnership programme, and Transatlantic MPA initiative object of this thesis; and linked to different institutions including Gulf and Caribbean Fisheries (GCFI), The Nature Conservancy (TNC) and National Oceanic and Atmospheric Administration (NOAA) and others.

MedPAN

The technical support that MedPAN offers to the managers associated within their region are cited below and all the information has been extracted from the organization's website (http://medpan.org).

a) Information and Communication Support

a. MPA Management Guidance Reports: Documentation that supports management performance in MPA as well as evaluation status of the protected areas within the Mediterranean.

i. MedPAN Collection: Guidebooks published by the organization as management tools to support MPA managers in their performance. These documents are developed by MedPAN but also in collaboration with other organizations such as World Wildlife Fund (WWF), International Union for Conservation of Nature (IUCN), Regional Activity Centre for Specially Protected Areas (RAC/SPA), as well as other national park institutions from different Mediterranean countries. This documentation is cited below:

1. "Sustainable financing of MPAs in the Med- A guide for MPA managers": Guide to develop and implement financial strategies to the MPA management documents as well as creating a business plan. It also provides advice and methods to reduce costs, create and maximize new and existed revenues. This document is addressed to MPA managers and national authorities (Binet, et al., 2015).

2. “Surveillance and enforcement of regulations in Mediterranean MPAs-A practical guide”: Practical guide for MPA managers to enhance efficiency of MPA surveillance and enforcement within their sites. It offers methods to optimize their actions by identifying their needs, considering different institution’s characteristics, especially in situations of deficient human and financial resources (López Ornat A. and Vignes P., 2015).

3. “Visitor use observation and monitoring in Mediterranean marine protected areas-A handbook for managers”: Document that serves as guidance to MPA managers to develop a visitor use monitoring project. This guide is suitable for sites with different characteristics due to the consideration of specific features, management issues and accessible resources in the MPA. The methodology used is based on three parts which are first a previous analysis that will establish the baseline to design the monitoring project, the consideration of certain indicators depending on the project to be used as operational datasheets and finally how to process the visitor use data and reporting protocol (Le Berre, et al. 2013).

4. “Snorkel surveys of the marine environment-Methodological guide”: Guide for the MPA managers with a compilation of different monitoring methods using snorkelling. It explains the relevant function of natural monitoring in the management plan of the MPAs as well as specifics of snorkelling such as free-diving methods, safety guidelines and equipment, as well as methodological notes to develop field protocols and data use (Imbert and Bonhomme, 2014).

5. “Underwater trails handbook”: Guide for MPA managers and other stakeholders collaborating with coastline management or environmental education which provides technical and metrological guidance to design and manage underwater trails. This document proffers an underwater trail definition types and characteristics, its use as a management tool, regulations, educational use and methods, underwater trail design and economic benefits thought business models (Baude, et al., 2012).

6. “Mediterranean marine protected areas and climate change-A guide to regional monitoring and adaptation opportunities”: This document is a guidance to measure climate change impacts on marine biodiversity of MPAs as well as enhance mitigation plans for future issues. This guide explains relevant threats and effects on marine biodiversity in the Mediterranean and discusses undetermined ecological consequences due to global warming. It offers monitoring plans and indicators to be used for MPA managers to deal with their site’s circumstances and better achieve their management objectives considering this global phenomenon (Otero, Farrabou and Vargas, 2013).

7. “Guide for quick evaluation of management in Mediterranean MPAs”: Guidebook to assess management effectiveness of MPAs by recognizing a set of indicators which considers all management procedures related to conservation of biodiversity, governance, socio-economic issues and the participation of stakeholders. It provides a methodology to evaluate the management of the site with and determine if it achieve its conservation goals. This valuable tool it serves to determine improvements of the actions done by

the managers and it can be used to report trends in a regional level (Tempesta M., and Otero M., 2013).

8. "Recreational fishing within the marine protected areas in the Mediterranean": This study exposes the impacts of the recreational fishing at biological and socioeconomic level identified within the MPA within the Mediterranean. Based on the analysis of the findings from different studies related to this topic and conducted within the region, it proposes different suggestions regarding MPA management and research, as well as environmental education to address and improve the impacts of this activity (Font T., 2012).

ii. External documentation provided: A set of protocols, guidebooks and informative documents for MPA managers done by other institutions. These documents expose knowledge and information related to different topics such as marine turtles, socio-economic benefits, sustainable tourism, evaluation of management plans, sustainable financing, sustainable fishing and ecological benefits ("Themes – MedPAN" n.d.).

iii. Mediterranean MPA status: Assessment report which defines the overall status of marine protected areas and Other Effective area-based Conservation Measures (OECMs) within the Mediterranean. Its findings are based on the data available in MAPAMED, a database of MPAs located in the region. This document presents figures of MPA number and area coverage in the Mediterranean as well as their conservation designation (national, regional, sub-regional, international and no-go, no-take and no-fishing zones). It also considers geographic location (coastal or offshore areas), sensitive habitats and Ecologically or Biologically Significant Marine Areas (EBSAs) coverage and ponders on MPAs characteristics such as size and age of the sites reflecting on their conservation effectiveness (MedPAN et. al. 2016).

b. MAPAMED (Marine Protected Areas in the Mediterranean): Technical tool developed in collaboration with RAC/SPA, which is a GIS database that collect and structure information of the marine protected areas and other sites of interest for marine conservation located in the Mediterranean. This tool serves as a platform to promote data sharing and access of MPAs in the region, it can be used to develop assessments and analysis of the status and tendency of the MPA network and has relevant value as a tool to determine problems in management and ecologic ambits in a MPA systematic level within the Mediterranean ("MAPAMED – MedPAN", n.d.).

c. "Scientific watch": Numerous list of scientific articles related and relevant to marine protected areas and marine conservation in the Mediterranean and worldwide ("Scientific Watch – MedPAN, n.d.).

d. "Newsletter and agenda": Section that announces and publishes news and events from MedPAN network ("News from the MedPAN network – MedPAN", n.d.).

b) Activities

a. Training: Activity offered to build capacity of the MPA managers though educational workshops and simultaneously promote networking among participants as well as with the experts. MedPAN organizes annual trainings which are offered yearly in a

regional scale to the MPA managers members of the regional network. Different subjects relevant to marine protected areas management in the region are presented, until now four had been organized instructing on "Climate changes in Mediterranean MPAs" (Spain, 2014), "Sustainable financing of Mediterranean MPAs" (France, 2015), "Towards more effective communication of Mediterranean MPAs" (Tunisia, 2017) and "Improving the governance of Small Scale Fisheries in MPAs" (Croatia 2018). ("Annual Trainings – MedPAN", n.d.).

b. Exchange of Experiences between Managers: Activities which knowledge, practical experience and expertise are transferred between managers of the network and serve to foster networking between the members.

   i. "Regional experience sharing workshops": Meetings at a regional scale for MPA managers in the Mediterranean that foster information, experience and expertise exchange between the MPA managers and other organizations. It brings a great opportunity of interaction between members and other professionals in the sector, catalysing dynamism within the network though disseminate initiatives and projects existed and serve to create professional links, as a source of inspiration and collaboration. It is organized presenting a given topic important to MPAs in the region, up to date the workshops have been "How to support the development of alternative livelihoods and/or income-generating activities in the Mediterranean MPAs?" (Tunisia, 2010), "Environmental education and awareness-raising in Mediterranean" (Croatia, 2011), "Surveillance and enforcement of regulations in MPAs: how to maximize the efficiency and sustainability of actions" (France, 2013), "Monitoring for managing Mediterranean Marine Protected Areas" (Albania, 2014), "Towards sustainable tourism in Mediterranean Marine Protected Areas" (Italy, 2015), "MPAs facing pollution in the Mediterranean: thinking beyond boundaries" (Slovenia 2017) and "Mediterranean challenges for Marine Protected Areas and Small Scale Fisheries" (Spain, 2018) ("Workshops – MedPAN". n.d).

   ii. "Exchange visits": Gatherings between MPA managers and other stakeholders where management experiences that have been prosperous are shared as well as recommendations and advices learn from them. In this way, mangers can be inspired to apply analogous strategies or actions to solve issues with similar characteristics in their sites. These gatherings have a relevant value to develop capacity building within the network's users. Four "visit exchanges" have been organized so far, "Surveillance and enforcement" (Turkey, 2014), "The fundamentals of the ranger profession" (France, 2015), "Sea turtles" (Greece, 2017) and "Small Scale Fisheries" (Italy, Croatia and Spain, 2018) ("Exchange Visits – MedPAN", n.d.).

c. Financial Resources: Programs that serve as an economic support for projects development.

   i. "Call for Small Projects": This service pretends to strengthen and improve the MPA management though supporting economically the managers to implement particular projects to their sites. In this effect, these actions will test mechanisms, methods, pilot schemes and other tools potentially beneficial to other sites and therefore enhance management effectiveness of MPAs in the Mediterranean. This call is addressed to all the MPA institutions and other organizations (private,

companies, scientific institutions, NGOs, etc.) with management responsibilities associated with this MPAs' authorities ("Small Projects – MedPAN", n.d.). There are two types of calls:

1. "Regular Call for Small Projects" which supports projects in line with the objectives of "improving the management effectiveness of MPAs from an integrated coastal zone management perspective (ICZM)", "capacity building and/or strengthening the management of MPAs in the Mediterranean, taking into account climate change", "supporting the development of business plans and sustainable financing mechanisms for MPAs" and "increasing MPAs' contribution to their territory by supporting the sustainable development of socio-economic activities, particularly fisheries" (Regular Call for Small Projects-Rules, 2018).

2. "Thematic Call for Small Projects on habitat mapping": Open only to projects of habitat mapping in MPAs within the four sub-regions of Central Aegean Sea/Cyprus Basin, South of the Adriatic Sea/North of the Ionian Sea, and Alboran Sea, Straight of Sicily/Tunisia (MedPAN-Thematic Call for Small Projects on Habitat mapping-Rules, 2018).

d. Collaboration with other Initiatives/Projects:

i. "Mediterranean programme of the MAVA Foundation": Initiative which pretends to works towards more sustainable fishing within Mediterranean and reduces impacts on priority habitats and species, decrease fishing pressure on high trophic level fish species and simultaneously enhance priority species status. This programme has three action plans:

1. "Reconciling fishing and biodiversity" and "Preserving living marine resources" which their main objective is to bring profit to fisheries and biodiversity by conserving and protecting critical habitats and healthy ecosystems. Their promote ways to enhance biodiversity and fishing knowledge, increase fishers and other stakeholder awareness, promote sustainable fishing practices to all social levels and institutions and promote to sustain alternative livelihoods ("MAVA Project – MedPAN" n.d).

2. "Conservation of marine turtles in the Mediterranean Region": Project which different partners unify their efforts to minimize or eradicate anthropogenic mortality of marine turtles in the Mediterranean. This initiative pretends to promote monitoring and research, improve coordination, capacity building, enhance protection/management of nesting areas, apply adaptive management in nesting, feeding and wintering sites and decrease illegal trade ("MAVA Project – MedPAN" n.d).

ii. "FishMPABlue2 Project": This initiative established a "regional-based governance toolkit" to improve management of small scale fishery in MPAs located in the Mediterranean. The objective is to evaluate ecological and social benefits to determinate the effectiveness of this toolkit by testing it in different MPAs in the region ("FishMPABlue2 Project – MedPAN", n.d.).

iii. "DesiMED Project": This project pretends to establish the pre-conditions for a Mediterranean destination management organization (DMO) which will foster a brand in ecotourism with appealing offers in the region. It will create a monitoring system to evaluate how sustainable are the touristic activities promoted within the parks, it will integrate and cooperate with stakeholders in a transversal manner it will create "DestiMED Ecotourism products" to support them, and also it will determine a guidelines for the implementation of tan eco-tourism management plans in MPAs of the Mediterranean. This ecotourism framework (standards, offers and monitoring tools) are being tested in different MPAs around the Mediterranean and will be the quality scheme of the DMO ("DESTIMED project – MedPAN", n.d.).

iv. "ACT4LITTER Project": Project which is focus to combat marine litter issues in the Mediterranean though different measures with an ecosystem-based approach. It pretends to establish a framework of measures to address marine litter and concurrently empowering networking between MPAs in the Mediterranean, enhance MPAs management by designating MPA-specific action plans to improve marine environmental status as well as put in to effect important policy frameworks (EU Marine Strategy Framework Directive, the Barcelona Conventional Regional Plan for Marine Litter Management in the Mediterranean, the Specially Protected Areas and Biological Diversity Protocol, etc.) ("ACT4LITTER Project – MedPAN", n.d.).

v. "PHAROS4MPAs Project": This initiative seeks to define an integrated framework serving as a guidance for cooperation of MPAs within the Mediterranean and eight maritime sectors (small scale fisheries, leisure boating, aquaculture, cruise and super yachts, offshore windfarms, scuba diving, maritime traffic and ports and recreational fisheries). In this effect, this project aims to improve effectiveness of MPAs' management while incorporating in the national maritime spatial plans that European Union (EU) Mediterranean States are establishing by 2021, the impacts of these sectors in a sustainable manner, as well as in the Integrated Coastal Zone Management (ICZM) plans and the strategies of the marine sectors considered ("PHAROS4MPAs Project – MedPAN", n.d.).

vi. "Supporting Implementation of Maritime Spatial Planning in the Western Mediterranean region (SIMWESTMED) project": Initiative which seeks to support the process of putting in force the Directive on Maritime Spatial Planning in four Member States (Malta, Italy, France and Spain) in their marine waters. At the same time, it supports the implementation of the mentioned Directive in the Member states by fostering cross-border coordination between them ("SIMWESTMED Project – MedPAN", n.d).

vii. "MedMPA network project": This project aims to contribute to create and build an efficient and ecologically representative network of MPAs which are effectively managed, connected and monitored. In this regard, pretends to foster activities in a national and regional level to enhance and ensure conservation in the future of essential and relevant marine biodiversity, and at the same time promote sustainable development in the Mediterranean ("MedMPA network project – MedPAN", n.d).

viii. "COGITO project": The objective of this project is to foster integrated management as well as improve resilience in island, coastal and marine areas. It pretends to incorporate co-management in these areas, improve institutional and MPA managers' capabilities, promote scientific knowledge for policy and management operations, and support interconnections and coordination between different partners for projects development ("COGITO Project – MedPAN", n.d).

e. Events:

i. "Forum of Marine Protected Areas in the Mediterranean": International gathering where managers, socio-economic actors, policymakers, scientific community and civil society assist to discuss the challenges that MPAs are dealing in the Mediterranean. This meeting is every four years and evaluate the current state of the progress of the "MPA Roadmap", which was established in the 2012 Forum and today adopted by the Barcelona Convention. The assessment was reported in the "Tangier Declaration" which contemplates different topics within the policy to improve effectiveness MPAs management and also regarding other topics such as sustainable development, climate change and ecosystem approach issues within the protected areas ("Mediterranean MPA Forum – MedPAN", n.d.).

ii. Network representation in European, Mediterranean and international conferences, congress and other relevant events.

NAMPAN

NAMPAN does not have any technical support done by the organization itself, but it does provide different management tools, reports and maps to the MPA managers of their region. This documentation was published by the Commission for the Environment Cooperation (CEC), which is an institution where Mexico, US and Canada cooperates to protect the environment of North America, and which it also created NAMPAN. The key technical support provided by this network is cited below and all the information has been extracted from the organization's website (https://nampan.openchannels.org/) ("About-NAMPAN", n.d).

a) Information and communication support

a. MPA Management Guidance Reports: Documentation serving as guidance to strengthen manager's capacities while managing their sites.

i. Planning for MPAs in a Changing Climate:

1. "North American MPA rapid vulnerability assessment tool": Guide to assist MPA managers for the identification and evaluation of climate change impacts that affect the habitats and species of their sites. At the same time, this methodology helps them to incorporate adaptation strategies in their management performance to minimize vulnerable features identified in the process. It is composed by three different documents to help managers to apply this tool to their MPAs: the "User guide", "Worksheets" and "Example of completed worksheets" (Hansen L., and Mielbrecht E.; CEC, 2017).

2. "Guide for Planners and Managers to Design Resilient MPA Networks in a Changing Climate": Guidance to facilitate MPA managers, network and

program planners to define strategies to face climate change impacts and challenges. This document presents four guides which offer action plans and methods to the MPA practitioners to reach different conservation objectives. These different protocols give step by step processes to protect relevant ecological systems and elements for more resilient and healthier marine ecosystems to combat climate change present and future effects. The guides include processes to protect "species and habitats with crucial ecosystem roles or those of special conservation concern", "potential carbon sinks", "ecological linkages and connectivity pathways for the wide range of species" and to preserve "the full range of biodiversity present in the target biogeographic area" (Barr, J., CEC, 2012).

3. "Scientific Guidance for Designing Resilient MPA Networks in a Changing Climate": This guidance serve as a complementary tool for the document above presented ("Guide for Planners and Managers to Design Resilient MPA Networks in a Changing Climate"). It is addressed to managers, scientists and planners to assist climate change's impacts while achieving the objectives presented in the previous guidebook. The steps provided in the four guidelines of this document, intent to help to design suitable strategies and actions to resolve, mitigate or approach different challenges related to global warming though scientific reports which serve as a base to develop appropriate responses. It also offers in different annexes a general outlook of the atmospheric and oceanic system changes predicted with their degree of uncertainty as well as an overview of the impacts on marine ecosystems due to climate change (Brock R.J., Kenchington E., and Martínez-Arroyo A.; CEC, 2012).

ii. "A guide to ecological scorecards for marine protected areas in North America": This document provides a standardized marine ecological scorecard and standardized condition report to guide MPA managers in the evaluation of the ecological status of their sites. The condition of the MPA is obtained through an evaluation of the actual state and tendency of their resources, considering habitat, water and living resources which are encompassed within the protected areas. Thereafter, the information obtained in this process is summarized in the condition report. This protocol it serves to MPA practitioners to comprehend and react to alterations at their sites. It is a tool addressed to MPA or resource managers as well as for researchers and it has a relevant value to channel this information to other stakeholders, such as policy makers, outreach officers and educators (Hyde D. et al., CEC, 2011).

iii. "Marine Priority Conservation Areas - Baja California to the Bering Sea": Report addressed to MPA managers, authorities and institutions in charge of ocean conservation, which presents the process to identify priority conservation areas (PCAs). The PCAs are oceanic zones which have relevant ecological significance, have ecosystems or species threatened or have an interesting potential for conservation. Therefore, these PCAs are important for different nations and the international cooperation is needed to manage them for accomplish desirable conservation goals towards healthier marine ecosystems. The identification of the PCAs will help to prioritize and distinguish where conservations actions are needed and they can also be used as nodes around which a MPAs network can be

coherently and efficiently designed. This project considers a specific marine region, which comprehends Baja California to Bering Sea (B2B) and pretends to promote international alliances to improve conservation at this scale (Morgan L., et al., CEC, 2005).

b. Database: Mapping Marine Ecoregions:

i. "Marine Ecoregions of North America": Report that presents the different ocean ecoregions comprehended around North America. From each ecoregion it provides general information covering a "regional overview", "physical and oceanographic settings", "biological setting", "human activities and impacts" and a "fact sheet". It seeks to define a framework to be used as a base to include the information available on ecosystems in the ocean in promote knowledge on marine research and communication, foster appropriate actions to face the challenges in manager's or decision makers' level and consider other sector's interests. In this regard, this document has an important value as a support to develop, implement and lead policies, conventions, acts and other events and agreements in a national and international level, integrate different stakeholders' interests, and offer information to different institutions, organizations, corporations, authorities as well as to the general public. It can also supports management cooperation and efforts by serving as a source as a starting point to implement continuous assessments of the ecosystems, habitats, species or other ocean features. Finally, marine ecoregions can help to identify areas of special interest for their conservation and design coherent and efficient MPAs networks (Wilkinson T., et al., CEC, 2009).

ii. Maps: Marine Ecoregions are defined as areas with analogous oceanographic, physiographic and biological features, which are included within the Exclusive Economic Zones of the different countries of North America. To establish a spatial framework of these ecoregions, the data pretends to be scalable, ecosystem-oriented and interconnected with other data series from the ocean and terrestrial. Their purpose is to serve as a geographic exhibition and survey for a regional and continental scale (Marine Ecoregions of North America, 2009).

1. Level I: The "Marine ecoregions level I" exhibits 24 different marine ecoregions with differences in their main overall ecosystem characteristics. Thus, these areas are gathered by enclosed seas, large water masses and currents, and regions of coherent sea surface temperature or ice cover (Marine Ecoregions of North America, 2009).
2. Level II: This map presents 86 marine ecoregions which reflects the bathymetry to determine the limits between different oceanic features (continental shelf, rise and slope, submarine canyons, sea mounts, etc.) to distinguish and relate relevant ocean current dynamics and upwelling and the geography (Marine Ecoregions of North America, 2009).
3. Level III: This map catalogues 86 marine ecoregions which fall within the continental shelf and in which it presents a classification of areas with different mass water properties in a local scale, types of biological communities and regional physiographic characteristics (Marine Ecoregions of North America, 2009).

c. Public outreach:

i. Videos: A series of films about North America MPAs and its relevant function to maintain marine resources which large number of communities rely on, conserve species and habitats, re-establish fisheries, improving scientific knowledge and providing other ecosystem services. It is also explored and discussed the management practices or tools to face the challenges emerging from the climate change ("Videos-NAMPAN", n.d.).

ii. News: Articles and news from the virtual platforms for ocean conservation of MPA news, Open Channel and Marine Ecosystem and Management (MEAM) ("Openchannels News-NAMPAN", n.d.).

d. Other information support:

i. Literature library: Extended list of journal articles and manuscripts relevant to ocean conservation and MPAs management from different websites that provide large database of scientific research and knowledge. Some articles are available for free and other the user has to pay some fee to accede to the document. The websites are ScienceDirect, Wiley Online Library, The Royal Society Publshing, SpringerLink, Sage Journals, MarXiv Papers and among others ("Literature Library-NAMPAN", n.d).

ii. Webinars: A series of webinars related to important topics for marine conservation and MPAs management which are available online on the network's website. This webinars are form different institutions such as Universities, non-profit organizations, research institutes, administration authorities and centres related to the marine preservation and research, such as National Oceanic Atmospheric Administration (NOAA), MPA News, EBM Tools Network, University of California, WWF, NatureServe, Conservation International, Mason University, among others ("Webinar Archives-NAMPAN", n.d.).

1. Upcoming events: This part announces the near coming events, mostly webinars which will be posted in the website ("Upcoming Events List-NAMPAN", n.d.).

iii. Conferences: List of national and international conferences, congress, forums, summit and other events from North America and worldwide related to marine conservation and MPAs. This section provides general information of the events such as the title, dates, location, link and an overall description ("Conferences-NAMPAN", n.d.).

iv. Jobs and funding: List of different international and national professional opportunities within the marine research, conservation and management as job vacancies listed in the section of "job listing", and list of calls for grants for projects, programmes and initiatives "grants listings" ("Grant and RFP Listings-NAMPAN", n.d.).

v. Contact: In this section is cited different contacts from the different professionals related with the NAMPAN of the three countries which are involved to the network ("Contact-NAMPAN", n.d.).

RAMPAO

RAMPAO offers range of different documentation which has developed in collaboration with other institutions. The technical support the network offers to the MPA managers associated within their region are cited below and all the information has been extracted from the organization's website (http://www.rampao.org/?lang=en).

a) Information and technical support

a. MPA Management Guidance documents and other reports: Documentation serving as guidance and support to strengthen manager's capacities while managing their sites.

i. Environmental Education: Documents addressed to raise awareness and knowledge of environmental heritage and its issues related within the region to the MPA managers and practitioners as well as for the general public. These documents are developed by the institutions of Regional Environmental Education Program (PREE), Regional Conservation Program for Coastal and Marine Area in West Africa (PRCM) and International Union for Conservation of Nature (IUCN). There are four documents; one of those presents academically an overall report of the coastal and marine environment of West Africa. The other three are addressed to the general public or children and they are stories with drawings to expose issues related to specific species such as marine turtles, manatees and gazelles ("Environmental Education-RAMPAO", n.d.).

ii. Methodological guides: Guidebooks and protocols to support the MPA managers to apply different methodologies to the management and conservation of marine and coastal resources in their sites.

1. "Guide for participatory monitoring of waterbirds in mangroves": Guidebook addressed to MPA managers that provides counting method and analysis tools to carry out waterbird monitoring in a mangrove area. It also offers information needed to process and exploit the data recollected, advices of how to solve the problems related to the task as well as recommendations for the participants who are responsible to conduct the counting operations (Laffargue C., and Sydo, 2016).

2. "Participatory monitoring guide for shellfish harvested in West Africa": Guide addressed to the MPA managers and practitioners, as well as local communities who are performing data collection to monitor and manage shellfish farming in West Africa. It aims to evaluate ecological state and renewal capacity of the populations of the species exploited, measure the impacts of the activity, implementation of sustainable management measures and post evaluation of its impacts. The monitoring methods provided are scientifically valid and feasible by local stakeholders in a participatory framework with limited resources. Moreover, the methodology is based on standardized scientific works which incorporates local techniques and empirical knowledge. (Diouf M., et all., 2013).

3. "Practical guide of follow-ups socio-economic changes": Guide to assist MPA managers to develop a socio-economic monitoring program for their sites. It

explains methods and indicators to conduct a socio-economic monitoring and apply its results to enhance MPA management and minimize its impacts. It fosters the use of participatory collection methods and expense diffusion of the results to involve local community in the process (Malleret K.D., n.d.).

4. "Essential guide to Socio-Economic Monitoring": Booklet to guide MPA managers to implement participatory monitoring of socio-economic changes on their sites. It provides socio-economic monitoring methods as well as follow-up and practical tips for collecting important data on communities that life in and nearby the MPA. The methodology detailed in this document is inspired by the monitoring process called "Global Socioeconomic Monitoring Initiative for coastal management" ("SocMon"), which is used in a worldwide scale due to its efficiency on integrating the human dimension into management of marine and coastal resources (Malleret K.D. and Brenier A., 2015).

5. "Guide for the recognition of artisanal fishing gear and nets used in the Marine Protected Areas of West Africa": This document is addressed to the MPA managers and other practitioners to help them to identify and recognize the fishing gear used for the small-scale fisheries in the MPAs of the West African countries. It provides technical definitions of the main gear. It aims to enhance and strengthen manager's and their team capabilities in the recognition and identification of the different types of the gear by providing their technical definitions. It also seeks to foster and promote responsible fisheries and sustainable resource management in West Africa (Douguet L. 2009).

6. "Women and shellfish. Guide for participatory monitoring of shellfish harvested in West Africa": This document reports the project "Women and shellfish" that developed a co-management system involving local communities from Saloum and Fadiouth islands. It aimed to increase valorisation of marine resources within the community, empowering and involving women in the governance process and management of the seashells and support local development. The project established management actions addressed to exploited shellfish populations, incorporating scientific and local knowledge while involving the fisherwoman in the process. The participatory management was set up by institutions (Banc d'Arguin International Fund and NGO ENDAGRAF) and fisherwoman whom established local management practices to protect shellfish as a response of the resource depletion as well as the diminution of the activity's sustainability. This report has the objective to transfer the experience, the lessons learned obtained and recommendations to be considered to achieve the continuation and expansion of the project around the region. (Brenier A., Henriques A., and Le Douguet L., 2009).

7. "Bioecological monitoring guide of shellfish exploited in the Islands of Niodior, Dionewar, Falia and Fadiouth": This document exposes the scientific follow-up of the "Woman and shellfish" project done on the seashells exploitation in some villages of Saloum and Fadiouth islands. This guide has the objective to make available the scientific follow-up of the local management practices, to the women and therefore enhance their effectiveness. It exposes general bio-ecology information of the seashells harvested in the

region, the local practices their management implemented on the project and the follow-up protocol (Diouf M. and Sarr A., 2009).

8. “In shared governance. A practical guide for marine protected areas in West Africa”: Practical guide to assist MPA managers and practitioners to develop a shared governance process in the MPAs of West Africa and consequently enhance the sites’ management. This tool serves as a reference to implement co-management and it exposes the concept and the different steps and stages of the establishment of this mechanism in an effective and equitably manner, targeting the different public and institutional sectors to be involved (Borrini-Feyerabend G., Chatelain C. and Hosch G., 2010).

9. “Methodological guide for the preparation of management plans for marine protected areas in West Africa”: Guide to help MPA managers of West Africa to elaborate management plans in their sites. This document was based on the workshop on management plans for MPAs in West Africa conducted in Senegal in 2008, where participants from different countries of the region shared and formed the process of this management documents. It aims to offer support to the managers on methodologies and foster the standardization of the management plans within the region. It seeks to be specific and suitable to the environmental and social context of the MPAs in West Africa, enhancing the marine and coastal environment features approach and also considering relevant social aspects presents in the region, such as the participatory approaches and issues lined to the fisheries (Rizk C., Semelin J. and Karibuhoye C., n.d.).

10. “Guide for developing simplified business plans for protected areas”: This guide aims to serve as a tool to help MPA managers in the West Africa to develop simple business plans to financially support the activities performed in their MPAs. It presents different models of business plans and it exposes the steps to be considered to elaborate them, such as the financial necessities and priorities, comparative evaluations of the plan and stakeholder communication. It also provides spreadsheets to facilitate managers the process' organization while developing the business plan (Landreau B., 2012).

11. “Practical guide for marine surveillance officers of marine protected areas”: The guide is addressed to officers from MPAs working with water craft engine for the nautical surveillance of marine, river or protected lakes. It seeks to provide support in their duties and guide in the different phases of their function and activities. It offers information regarding preparation tasks for the nautical missions, safety on board, navigation and piloting skills, use of electronic equipment, documents needed on board, maritime surveillance operations, mechanics knowledge, knots and seamanship (D’Escrienne L.G. and Araújo A., 2013).

12. “Identification guide for the main species of sharks and rays in the eastern tropical Atlantic, dedicated to fishery investigators and biologists”: This guide is a reference tool for biologist and fisheries investigators to be used for a quick identification and recognition of the main shark species in the West Africa. Its design is simplified to facilitate field work and at the same time, be useful for fishermen while recording their captures on the logbooks. In this regard, the

control of catches can be done by species, enhancing the fisheries statistics' quality and therefore improving the sharks and rays populations' management in the region (Séret B., 2006).

13. "Training guide for PNBA Village Cooperative managers": This document is a training guide for managers of cooperatives and tracking agents within the Banc d'Arguin National Park (PNBA), which assists them on management training and cooperatives as well as in the administration of Micro-projects. Its objective is to fortify their capabilities on enhance management state of their cooperatives and micro-projects developed with the resident population within the park. The guide provides information about management principles and cooperatives operation, exposing management documents related to their administration and accounting. Moreover, it also offers management and monitoring of micro-projects (Sidaty O. A., 2008).

14. "Environmental management of Petroleum Exploitation": This report provides a range of tools to establish a legal framework regarding oil and gas extraction in the West Africa. It aims to foster, guide and recommend the decision-makers and other actors to initiate a legal process to protect the ocean while conducting oil exploitation. It exposes an overview of the oil and gas exploitation in a global scale and in the context of West Africa, the national plans for its sustainable development, the national policies and the energy markets within the region. It describes the environmental impacts associated to the offshore oil exploitation as well as the maritime oil transport and its international, regional and national legal framework which regulates the activities (Kloff S. and Wicks C., n.d.).

15. "Gender and Equity in marine protected areas in West Africa": Reference and educational guide for MPA managers and general public which describes the gender equity situation in protected areas in West African countries. This document is based on the results of the workshop "Reflecting on capacity building for women in the processes of concertation and management of Protected Areas in West Africa" done in Senegal 2007, which aimed to expose the concept, comprehend the issue and offer tools and mechanisms to include the principle of gender equity in the West African protected areas programs and projects. This guide provides reflexions on the issue of gender equity in West Africa and in their protected areas, it proposes ideas and premises to foster equity-based approach in the region and it suggests queries on equality between sexes using case studies (Anoko J.N., n.d.).

iii. Management tools: Technical documentation and reports of studies from different topics linked to marine protected areas, useful for MPA managers as a resource of information and recommendations to manage certain issues.

1. "The sacred natural sites of the West African coast and marine ecoregion: Exploration and Institutional Recognition Options": Report that collect information of case studies of sacred natural sites in Gambia, Guinea, Guinea Bissau and Senegal. The objectives of this document are to explore the potential functionality of sacred natural sites to preserve biodiversity, and also the possibility to apply the strategic knowledge gathered in this study to define different institutional approaches to legally recognize its value. Based on the

information collected and its analysis, this study provides recommendations to policy makers and experts to develop different legal frameworks and actions to recognize and manage the sacred natural sites from in an out of the protected areas (Oyono P.R., et al., 2012).

2. "Coastal sacred natural sites in Guinea: Overview, potential, threats and perspectives" and "Coastal Sacred Natural Sites in Senegal. Overview, Potential, Threats and Perspectives": Little reports (factsheets) as a partial summary of the results and recommendations of the study "The sacred natural sites of the ecoregion coast and marine West Africa: Exploration and Institutional Recognition Options", which are focus on the coastal and marine sacred natural sites in Guinea and Senegal. They are a tool dedicated to local decision-makers that aims to provide knowledge of these sites in the different countries for their recognition and valuation. They seek to support managers on adapting the formal management frame of the sites by incorporating traditional management of the resources. They expose an overview of the state of these sites in the countries, their legal and statutory boundaries and they also identify the stakeholder involved in the site, highlighting the importance of their participation to their conservation process. These documents also expose the threats and detrimental factors affecting the sacred natural sites, the local conservation, management and valorisation of the places. Finally, they describe the strategic options and prospects in terms of management and protection of the sites depending on the national context (Coastal sacred natural sites in Guinea: Overview, potential, threats and perspectives, 2012; and Coastal Sacred Natural Sites in Senegal. Overview, Potential, Threats and Perspectives, 2012).

3. "Routes of creation of Marine Protected Areas in West Africa: Experiences & lessons learned": Report of a study and analysis of the history of twelve marine protected areas in West Africa. It explains the origins and the processes of their creation to record the experiences of different actors involved in the implementation of MPAs and expose the main lessons to develop recommendations and define the best practices to the MPA practitioners of the region (Renard Y. and Touré O., 2012).

4. "Identification and characterization of coastal and marine sacred natural sites in West Africa: Report of Guinea-Bissau": Document that describes the study of sacred natural sites in Sao Domingos and Tabanca Bijan Bubaque in Guinea-Bissau belonging to Baiote and Bijagos ethincs. (Said A.R., Cardoso L., Indjai B. and Nhaga H.S., 2011). It explains the social value, rules, and traditional cultural activities, the use of resources and environmental conservation state as well as their importance in ecological functions for the communities of these sites. It also exposes the threats and the lack of sectorial laws to protect the SNS. It declares the importance of a legal framework to protect and manage SNS and it presents several recommendations to developing this legal mechanism (Said A.R., et al., 2011).

5. "Identification and characterization of coastal and marine sacred natural sites in West Africa. Case study of Senegal": Study done in two sacred natural sites in Senegal and it seeks to gather information of these sites to foster their legal

recognition and valorisation of the traditional knowledge. It also highlights the relevant role of these sites to the sustainable conservation of the coastal and marine resources. The report provides an inventory of elements in the sites and their characterization. It also defines cultural, social and symbolic or religious value and functions, their ecosystem services and it identifies the stakeholders involved in the conservation and management of the site. It exposes the land tenure system and the disputes linked to it, other uses of the area, the traditional management systems in place and the local institutional framework for the preservation and management of the sites (Fall S.M., Diouf M. and Badiane S.D., 2011).

iv. Tool kit: Set of worksheets developed as a result of the gathering process of the identification and analysis of the communication and sensitization tools used in MPAs by different organizations, institutions and associations in West Africa. These methodological worksheets are tools useful to address different communication and sensitization aspects while managing protected areas. They serve as a reference for information on methodologies and research to support MPA managers, conservationists and other experts to develop their performance, assisting and evaluating their management practices. Moreover, these documents have the potential to guide and foster inspiration among MPA practitioners in the region ("Presentation-RAMPAO", n.d.).

1. Communication tools: Worksheets with theoretical and practical guidance to counsel and support MPA managers in their activities related to communication, sensitization and outreach. They offer varies options depending on the information to transmit and the different public targeted. Below they are exposed the different worksheets classified by different types of tool depending on the communication channel used or aspect addressed: ("Communication Tools-RAMPAO", n.d).

    a. Publishing: Banner, brochure, diary/calendar, book/comic book, kakemono (a roll-up, hanging banner), flyer/leaflet, newsletter, postcard, poster/billboard and report.

    b. Interpersonal communication and public speaking: Educational workshop, theatre/live performance, public meeting, film-discussion and exhibition/display stand.

    c. Audio-visual: Audio CD, film/video, radio programme and radio spot.

    d. Web application: Story telling (story map) and website.

    e. Promotional products.

2. Communication advice: Worksheets that provide advice on good practices, creation of communication products and instruments and methodologies to apply communication strategies. The worksheets available are: (Communication Advice-RAMPAO, n.d.).

    a. "Communication strategy: Fundamental steps for developing a communication strategy".

b. “Communication glossary: Common communication terms”.

c. “Media relations: Key points for management of good media relations”.

d. “Press relations”: Three worksheets are offered: “The press release and press kit”; “the press conference” and “the interview”.

e. “Newsletter/information bulletin: Creating an information periodical”.

f. “Website: Website creation/redesign”.

g. “Internet strategy: Online strategy basics”.

b. Other information support:

i. Reports: Evaluation, technical and status reports of different projects, studies and activities related to MPAs in the West Africa developed by RAMPAO and other organizations. In this section there is also an institutional meeting report “6th General Assembly “, and a study of the institutional and financial sustainability of the network. The evaluation reports presented are from projects related to the creation and implementation of MPAs and Conservation Sites, the effective strengthening of the MPA management in the region, the strengthening of RAMPAO and its work plan implementation, and assessment of the MPA effective management of WAMER ecoregion using RAPPAM tool (Report-RAMAPO, n.d.).

ii. Information of the countries and MPAs involved: Section with general information of the countries which are members of the RAMPAO network, which are Gambia, Cape Verde, Guinea, Guinea Bissau, Mauritania, Senegal and Sierra Leone. It presents also information of the MPAs within these countries that are linked to RAMPAO, as well as internal and legal documentation from the sites. The facts that are exposed in the countries overview are the regime, geographical data, surface area, language, capital and main cities and demography. From the MPAs the information presented are general characteristics such as year of implementation, location, area, main and important species, objectives, representative habitats and ecosystems, cultural values and economic activities (Members-RAMPAO n.d.).

iii. Dissertations: This part of the technical support offers the results of different studies to improve the understanding of the complex features within the MPAs. Managers of protected areas can also find scientific and technical data, case studies and examples of diverse approaches used to address different aspects related to MPA management. The studies presented were developed within the region of the network and are related to ornithology, small-scale fisheries management, participatory management in protected areas, heterozoan carbonate sedimentation and eutrophic process in tropical shelf, ecological operation and socioeconomic evolution, deficiencies of MPA in the region. This section also exposes a study of elasmobranches fishery and an assessment of a modernization reform in a public administration (Dissertations-RAMPAO, n.d)

iv. Scientific Articles-Data: Section with scientific articles to transfer technical and scientific information and case studies relevant to consider while managing different issues and topics within the MPAs. The documents available are biological and ecological studies of different species and group of species in a regional scale. The

species considered are flamingo, croaker, skate, sharks, and also other studies with more generic target species considering selacian and mobulidae. These studies provide information related to population trends and composition, diet composition, fisheries landings data, recordings of new populations, status and conservation issues, anthropogenic pressures, sustainable management, and legal framework of the species mentioned above in specific locations. It exposes other studies related to the evaluation of the biodiversity and fishery resources impacts from oil and gas activities, and fishing activities spatialization of an area (Scientific Articles-Data-RAMPAO, n.d.).

v. External document database:

1. Fisheries: Studies, scientific articles, guides and reports of fisheries in the West Africa. The documents are related to fisheries management tools, MPA as a tool for fisheries management, and evolution of the migrations' artisanal fisheries. It has also a report of the institutional meeting of the MPA-Fisheries Task Force, a collaborative initiative from RAMPAO and other institutions (Peche-RAMPAO, n.d.).

2. Scientific publications: Scientific articles of interest and studies in the West Africa. The worldwide scientific articles presented are related to decision support system to sustainable lowland planning and management, spatial decision support system for zoning in MPAs, and master geospatial technology. The reports from the West Africa are related to coastal planning, vegetation and land cover monitoring and studies, and agricultural land use drivers (Publications Scientifiques-RAMPAO, n.d.).

3. "Resolutions droit": Scientific articles, reports, and other documentation of environmental governance in a global scale related to Aichi Target 11, Objective 7 which seeks to ensure environmental sustainability within the Millennium Development Goals and Biological Diversity Convention (Resolutions Droit-RAMPAO, n.d.).

vi. News: This section exposes regional and worldwide news, announcements and call for conservation projects, and it publishes national, regional and international conferences, congress and events. It also announces internal activities and events of RAMPAO, job vacancies in the region, external activities from other institutions and organizations. All the information published is related and relevant to conservation and MPAs (News-RAMPAO, n.d.).

vii. Citation of virtual platforms from other institutions: Two platforms are facilitated. A bibliographic platform named "Marine Areas" which provide and different studies and research related to MPA located in the West African region and also in general. The other platform is the "PRCM Platform" which pretends to support communication between the members and partners of PRCM that serves as a virtual space to interact, create, organize meetings, contact with messages as well as share and post documents and information (Exchange, Discuss, Share-RAMPAO, n.d.).

viii. Multimedia:

1. Videos: Set of videos of different topics related to MPA and marine conservation in Africa. The themes exhibited are related to fisheries, local NGO, equity in conservation, specific MPAs in the region and participatory management (Videos-RAMAPO, n.d.).

2. Photos: Collection of photos of MPAs and marine environment from the different countries associated with RAMPAO (Photos-RAMPAO, n.d.).

ix. Agenda: This part announces the internal and external events and activities (meetings, forums, assemblies, conferences, congress, formations/workshops/trainings, international colloquiums, etc.), related to MPA and conservation from the RAMPAO, other organizations within the region as well as in a worldwide scale (Agenda-RAMPAO, n.d.).

x. Contact: Address, email and telephone number of RAMPAO office in Senegal (Contact-RAMPAO, n.d.).

b) **Activities:** The activities developed by RAMPAO to support MPA managers in their management tasks in the West African region are not specified clearly in the website. The only document found in the site which provides some information regarding the network's activity it is the "Work Plan 2015". However, the activities specified there is no evidence if certain actions have been initiated, completed, and/or if they continue on time. This document exposes that the network purposes are to promote and implement capacity building by organizing training programs for managers, exchange of experience workshops between MPA managers and other stakeholders which by 2015 two have been organized related to governance and create groups of expertise on MPA management key areas in a regional scale. Other actions in the work plan are to foster mechanisms within the MPAs network that supports participatory management and to organize programs for small grants and crowdfunding projects. According to information provided in the RAMPAO's website, the activities mentioned above will be developed in the future as well as with the implementation of other services such as coaching system (Exchange, Discuss, Share-RAMPAO, n.d.).

a. Collaboration with other initiatives/projects: Different projects have been developed and implemented by different institutions in collaboration with RAMPAO network. The organizations and corporations are MAVA Foundation, PRCM, FIBA, Oréade-Brèche, Aquatic Consult, UNDP and WWF WAMPO.

i. "Sustainable exploitation of small pelagic fish in MPAs and other protected areas in West Africa (PPAMP)": Project funded by MAVA foundation which aims to improve the regulation of the small pelagic fish exploitation in different countries of West Africa (Senegal, Gambia, Guinea Bissau and Mauritania). In this regard, the project seeks to enhance scientific knowledge on critical sites in MPAs and at the same time improve management efficiency of these sites by fostering capacity building among the actors implicated. Moreover, another objective of this project is to support the establishment of a transparent enforcement which controls these fisheries (RAMPAO Secretariat, 2018).

ii. “Support for the creation of Marine Protected Areas and conservation sites”: Project which contributed to the identification of critical sites for conservation, and supported though consultation and supervision initiatives related to the process of creation and establishment of new MPAs in different countries of West Africa. This project seeks to enhance conservation status of areas with marine and coastal ecosystems which have significant ecological, socioeconomic and heritage values within the region (FIBA and PRCM, 2012).

iii. “Support to strengthen the management efficiency of MPAs”: This project aimed to develop and implement different actions to improve MPA governance in a subregion of West Africa by supporting and applying adequate management tools. The activities developed were related to support the formulation and implementation of management plans in MPAs, support participatory management and develop and enhance other operations such as surveillance, monitoring, promote the creation of projects shared between different MPAs and raise environmental and community knowledge. Other objectives to achieve were to enhance management effectiveness by RAPPAM tool and FFEM model. This project also had the purpose to improve managers’ skills and capabilities in different relevant topics related to MPA management as well as to promote knowledge and experiences exchange among MPA practitioners by organizing different activities, trainings and establishing regional group of expertise on key MPA management topics. Moreover, this initiative pursued to develop methodological tools and guides in key subjects to support MPA management and foster their effectiveness, as well as transfer and capitalize the knowledge gathered of best practices and lessons learned among the practitioners within the subregion (Oréade-Brèche and Aquatic Consult, 2012).

iv. “Support for strengthening the RAMPAO and the implementation of its work plan”: Project which has the objectives to strengthen and consolidate RAMPAO in an institutional and ecological level as well as fortify its sustainability by enhancing network’s integrity and functionality. The actions developed in the project were to apply and include recommendations from a previous effectiveness assessment study to RAMPAO’s management measures, review the network’s compromise on achieving the objectives set up in its work plan, improve and expand knowledge on environmental state of the marine and coastal resources and biodiversity within the region to increase and promote its sustainable management and exploitation (Oréade-Brèche and Aquatic Consult, 2012).

v. “Assessment of the management effectiveness of the Marine Protected Areas of the WAMER eco-region by the RAPPAM tool”: Project which seeks to evaluate management effectiveness of MPAs within West Africa region by applying RAPPAM tool. Its purpose is to define recommendations and support its implementation in the different MPAs around the region (PNUD, UE and WWF, 2014).

Appendix 3

Classification of the technical support from CaMPAM, MedPAN, RAMPAO and NAMPAN

The general areas used to classify the different documentation, activities and projects are presented below organized by network and with the title of their reports/projects or activity associated.

vi. Classification of the documentation provided for the management practices, tools and planning (guidebooks/protocols/methodologies/reports). Some of the documentation is present in several areas of classification due to their multifunctional approach:
    1. Evaluation of conservation status of MPAs and its networks, their management plans, monitoring methodologies and identification of priority conservation areas:
        a. CaMPAM: "Management capacity assessment of selected coral reefs marine protected areas in the Caribbean" and "Manual: Training of trainers on marine protected areas management in the Caribbean".
        b. MedPAN: "Visitor use observation and monitoring in Mediterranean marine protected areas-A handbook for managers", "Snorkel surveys of the marine environment-Methodological guide", "Underwater trails handbook", "Guide for quick evaluation of management in Mediterranean MPAs" and "The 2016 status of marine protected areas in the Mediterranean. Main findings".
        c. NAMPAN: "A guide to ecological scorecards for marine protected areas in North America" and "Marine Priority Conservation Areas - Baja California to the Bering Sea".
        d. RAMPAO: "Guide for participatory monitoring of waterbirds in mangroves", "Participatory monitoring guide for shellfish harvested in West Africa", "Practical guide of follow-ups socio-economic changes", "Essential guide to Socio-Economic Monitoring", "Women and shellfish. Guide for participatory monitoring of shellfish harvested in West Africa", "Bioecological monitoring guide of shellfish exploited in the Islands of Niodior, Dionewar, Falia and Fadiouth", "Methodological guide for the preparation of management plans for marine protected areas in West Africa" and "Routes of creation of Marine Protected Areas in West Africa: Experiences & lessons learned".
    2. Environmental education:
        a. MedPAN: "Underwater trails handbook".
        b. RAMPAO: "Knowledge handbook on the West African coast", "Learn more about the West African manatee: Trichechus senegalensis", "Ndébane, the little turtle", and "Where are the gazelles? The adventures of a little jackal in the Banc d'Arguin National Park".
    3. Governance:
        a. RAMPAO: "In shared governance. A practical guide for marine protected areas in West Africa".
    4. Surveillance and enforcement:
        a. MedPAN: "Surveillance and enforcement of regulations in Mediterranean MPAs-A practical guide".
        b. RAMPAO: "Practical guide for marine surveillance officers of marine protected areas".

5. Sustainable fisheries:
    a. RAMPAO: “Guide for the recognition of artisanal fishing gear and nets used in the Marine Protected Areas of West Africa”.
6. Sustainable financing and business plans:
    a. MedPAN: “Sustainable financing of MPAs in the Med- A guide for MPA managers”.
    b. RAMPAO: “Guide for developing simplified business plans for protected areas”.
7. Climate change and resilience of coastal and marine areas:
    a. MedPAN: “Mediterranean marine protected areas and climate change-A guide to regional monitoring and adaptation opportunities”.
    b. NAMPAN: “North American MPA rapid vulnerability assessment tool”, “Guide for Planners and Managers to Design Resilient MPA Networks in a Changing Climate”, and “Scientific Guidance for Designing Resilient MPA Networks in a Changing Climate”.
8. Ecology (ecosystems and biodiversity, ecosystem services, impacts, research and monitoring):
    a. RAMPAO: “Identification guide for the main species of sharks and rays in the eastern tropical Atlantic, dedicated to fishery investigators and biologists”.
    b. CAMPAM: “Manual: Training of trainers on marine protected areas management in the Caribbean”.
9. Communication and public/internal information outreach tool-kit:
    a. RAMPAO: “Communication and Reference Tools Kit”.
10. Sustainable tourism:
    a. MedPAN: “Underwater trails handbook”.
11. Participatory management:
    a. RAMPAO: “Guide for participatory monitoring of waterbirds in mangroves”, “Participatory monitoring guide for shellfish harvested in West Africa”, “Women and shellfish. Guide for participatory monitoring of shellfish harvested in West Africa”, and “Training guide for PNBA Village Cooperative managers”.
    b. CAMPAM: “Manual: Training of trainers on marine protected areas management in the Caribbean”.
12. Management of sacred/cultural natural sites:
    a. RAMAPO: “The sacred natural sites of the West African coast and marine ecoregion: Exploration and Institutional Recognition Options”, “Coastal sacred natural sites in Guinea: Overview, potential, threats and perspectives”, “Coastal Sacred Natural Sites in Senegal. Overview, Potential, Threats and Perspectives”, “Identification and characterization of coastal and marine sacred natural sites in West Africa: Report of Guinea-Bissau”, and “Identification and characterization of coastal and marine sacred natural sites in West Africa. Case study of Senegal”.
13. Management offshore oil exploitation:
    a. RAMPAO: “Environmental management of Petroleum Exploitation”.
14. Gender equity in MPAs:
    a. RAMPAO: “Gender and Equity in marine protected areas in West Africa”.

This classification does not consider the external documentation which the networks have not been directly involved in their edition but they provide in their website to complement and complete their services. This is the case of MedPAN which offers information related

to marine turtles, socio-economic benefits, sustainable tourism, evaluation of management plans, sustainable financing, sustainable fishing and ecological benefits. Similarly, RAMPAO offers large amount of scientific studies from the region related to ecology and certain species from West Africa, as well as documents of international environmental governance and policy.

vii. Classification of the capacity building activities developed by the networks, not taking into account the projects which they collaborate with other institutions. Several activities are present in different areas of classification due to their multifunctional approach:
    1. Sustainable and efficient management, planning, implementation and evaluation of MPAs and its networks:
        a. CaMPAM: Training of Trainers, Sharing of lessons-learnt and networking and Small grants fund.
        b. MedPAN: Annual trainings and Regular Call for Small Projects.
    2. Sustainable financing:
        a. CaMPAM: Training of Trainers and Small grants fund.
        b. MedPAN: Annual trainings and Regular Call for Small Projects.
    3. Participative management and involvement and communication of stakeholders and/or community:
        a. CaMPAM: Training of Trainers and Learning exchange.
    4. Sustainable tourism:
        a. CaMPAM: Training of Trainers and Learning exchange.
        b. MedPAN: Exchange of experiences between managers.
    5. Alternative and sustainable livelihoods:
        a. CaMPAM: Training of Trainers, Learning exchange and Small grants fund.
        b. MedPAN: Exchange of experiences between managers.
    6. Surveillance and enforcement:
        a. CaMPAM: Learning exchange.
        b. MedPAN: Exchange of experiences between managers and Exchange visits.
    7. Sustainable fisheries:
        a. CaMPAM: Sharing of lessons-learnt and networking, Learning exchange and Small grants fund.
        b. MedPAN: Annual trainings, Exchange of experiences between managers, Exchange visits and Regular Call for Small Projects.
    8. Ecology (ecosystems and biodiversity, ecosystem services, impacts, research and monitoring):
        a. CaMPAM: Training of Trainers, Sharing of lessons-learnt and networking and learning exchange.
        b. MedPAN: Exchange of experiences between managers.
    9. Climate change and resilience of coastal and marine areas:
        a. CaMPAM: Small grants fund.
        b. MedPAN: Annual trainings and Regular Call for Small Projects.
    10. Environmental education:
        a. CaMPAM: Training of Trainers and Learning exchange.
        b. MedPAN: Exchange of experiences between managers.
    11. Management of species of interest or invasive:
        a. CaMPAM: Learning exchange and Small grants fund (lionfish).
        b. MedPAN: Exchange visits (sea turtles).

12. Marine pollution:
    a. MedPAN: Exchange of experiences between managers.

Despite RAMPAO's "Work plan 2015" exposes different activities done by the organization and other which pretends to develop, in this comparison have not been considered them due to the lack of documentation to prove their successful execution.

viii. Classification of the network's collaborative projects associated with other institutions:
    1. Networking and information exchange:
        a. MedPAN: "COGITO project".
    2. Promoting conservation and MPA/MMAs:
        a. CaMPAM: "Caribbean Challenge initiative", "Regional support for the Caribbean Challenge initiative: Networking, consolidation and regional coordination of MPA management".
        b. RAMPAO: "Support for the creation of Marine Protected Areas and conservation sites".
    3. Marine litter:
        a. MedPAN: "ACT4LITTER Project".
    4. Sustainable tourism:
        a. MedPAN: "DesiMED Project".
    5. Sustainable fisheries:
        a. MedPAN: "Mediterranean programme of the MAVA Foundation", "FishMPABlue2 Project".
        b. RAMPAO: "Sustainable exploitation of small pelagic fish in MPAs and other protected areas in West Africa (PPAMP)".
    6. Sustainable and alternative livelihoods:
        a. MedPAN: "Mediterranean programme of the MAVA Foundation".
    7. Sustainable financing:
        a. CaMPAM: "Caribbean Challenge initiative".
    8. Management of other maritime sectors (Marine Spatial Planning):
        a. MedPAN: "PHAROS4MPAs Project", "Supporting Implementation of Maritime Spatial Planning in the Western Mediterranean region (SIMWESTMED) project".
    9. Meetings/Forum:
        a. MedPAN: "Forum of Marine Protected Areas in the Mediterranean".
    10. Strengthen, evaluate and improve management operation and effectiveness of MPAs and its networks:
        a. CaMPAM: "Caribbean Challenge initiative", "Regional support for the Caribbean Challenge initiative: Networking, consolidation and regional coordination of MPA management", "Marine Protected Area Management Capacity Assessment Project".
        b. MedPAN: "MedMPA network project", "COGITO project".
        c. RAMPAO: "Support to strengthen the management efficiency of MPAs", "Assessment of the management effectiveness of the Marine Protected Areas of the WAMER eco-region by the RAPPAM tool".
    11. Protection of species or habitats of interest:
        a. MedPAN: "Mediterranean programme of the MAVA Foundation" (marine turtles).
    12. Strengthening regional network's operation:

a. RAMPAO: “Support for strengthening the RAMPAO and the implementation of its work plan”.

13. Co-management and involvement and communication of stakeholders and/or community:
    a. MedPAN: “COGITO project”.
14. Resilience of coastal and marine areas climate change:
    a. CaMPAM: “Regional support for the Caribbean Challenge initiative: Networking, consolidation and regional coordination of MPA management”.
    b. MedPAN: “COGITO project”.

Appendix 4

Objective of the questionnaires

The purpose of these questionnaires was to collect specific information from the different types of organizations to:

- Explore the institutional functioning, services and actions from each regional MPA networks, national partners and the other organizations by:

    - Investigating whether these institutions provide management support/capacity-building to the MPA managers/contracting parties in their country/region and if so, which kind of assistance they offer regarding management tools on topics considered.

    - Determining the existence of a mechanism of data collection (database) for MPAs within the institution and if so, identify which fields are considered as well as the program, format or system used to digitalize the information.

    - Exploring the existence of MPAs targeting specifically migratory species protection/management with high ecologic value within the national/regional network associated to the institution. In case of having them, extracting information related to the name of the site, the target species being protected, as well as the existence of mechanisms to manage and monitor these species at national/regional scale, the name of the sites involved in this coordinated management and the actions performed for their conservation.

    - Examining the existence of a system to coordinate management or monitoring to address and improve coastal and marine resilience in the sites within the MPA national/regional network. And if so, identify the topics they consider, the mechanism used and the actions developed for this aim.

    - Researching the existence or nonexistence of financial support provided by the institution to its associated MPA sites, and if so, determining the different characteristics of grants, projects and calls. Also knowing the source of the funding (donor) and the success of this tool.

    - Identifying advocacy activities of the institutions and how they do represent the MPA managers of their country/region in the decision maker's meetings, as well as the types of meetings they attend at national, regional and international scale.

- Explore relevant aspects to be considered while developing the common strategy between the different organizations by:

    - Examine staff's perception regarding the most relevant and frequent management issues which MPAs are facing within the country/region where the institution is operating, and reveal if reliable knowledge/data is available on this regard.

- Determining the kind of technical support/capacity-building offered by the institutions to improve the MPA management on the difficulties that MPAs are facing in their region, and the way the support offered assist those issues.

- Exploring institutions' staff opinion on the potential improvement of the technical support/capacity-building offered regarding management of MPAs in their country/region, as well as the limitations which can or cannot make them feasible.

- Identifying weakness and strengths of each MPA institution, as well as determining their causes if possible.

- Identifying fields/topics/themes of expertise regarding MPA management within each MPA institution.

- Explore the institutions' interests or capability on developing collaboration between other MPA organizations in different topics of common interest by:

    - Identifying and prioritizing potential MPA management actions at which their methodology, monitoring protocol could potentially be standardized among national/regional MPA institutions of different countries to improve MPAs management effectiveness in a transatlantic scale. Identifying and prioritizing the topics of the institutions' interest and exploring suggestions of specific actions and/or monitoring, protocols/methodologies or target species/stakeholders of their concern.

    - Determining institutions' interest to establish a shared database by coordinating a mechanism of data collection, sharing monitoring and awareness-raising between different MPA organizations in a transatlantic scale. Exploring the topics of their common interest to develop the database as well as preference of format or system if any.

Moreover, the different questionnaires aim to collect information from each specific type of MPA institution considered to investigate on the following aspects:

- **From the national MPA agencies:**

    - To know the agencies' operation, functionality and responsibilities regarding MPAs and their national networks within their respective countries, as well as be informed about the existence of other institutions involved in MPA management. In addition, it aims to extract information regarding MPA management coordination, project collaboration, as well as its resources and technical support to MPAs.

    - To distinguish national agencies' priorities to coordinate efforts with other MPA institutions at regional and transatlantic scale to manage and support different topics and issues regarding MPA management, and thus strengthen MPA networks capabilities at national, regional and larger levels.

- To investigate national agency staff's interest to establish connection and cooperation with other national/sub-national/regional MPA institutions or networks at transatlantic scale, and explore the fields or actions of common interest to be developed in this matter.

- To explore national MPA agencies' interests to link with the transatlantic MPA Networks Twinning project and the coordination or mechanism they would suggest to do for develop this connection.

- **From the regional networks of MPA managers:**

  - To differenciate the internal and external communication tools of each regional MPA network.

  - To identify the organization's tools used to technically support and build capacities among members within the networks.

  - To investigate network's priorities on coordinating MPA management actions support and tasks between them in different fields and topics at transatlantic level.

  - To explore the networks coordinators' and other responsible people's interest to coordinate efforts between networks to share tools to facilitate information sharing, technical expertise and compare MPA management practices, as well as determine which topics could be potentially jointly developed.

- **From the other international institutions working with MPAs:**

  - To obtain information about the structure within the institutional framework regarding the efforts and actions implemented in the sector of MPAs, and differentiate the existence of specific institutional areas responsible of MPA management activities and actions.

  - To identify the institutions' challenges and difficulties on the establishment and application of MPA policies and/or management actions within their MPA network/s.

  - To extract information about the institutions' internal and external communication tools regarding MPAs and their networks.

  - To identify institutions' tools to promote capacity building which they offer to the contracting parties, as well as the fields they develop.

  - To determine past or present collaborations of the institution with other international or regional organizations within the MPA sector and its networks and if so, identify the name of the organization, the mechanism and period of collaboration as well as the benefits from both institutions due to this connection.

- To explore the institutions' interest on developing more efforts within the MPA management scope of action or responsibilities and if so, identify the way or fields which they would like to expand it.

- To investigate the institutions' interest on establishing a connection with other organizations or projects developing conservation efforts on MPAs and their network at Atlantic scale and if so, investigate the interest on developing a link or coordination between their institution and the MPA Networks Twinning project from the Transatlantic MPA Network initiative. And which role or coordination would they suggest.

- To know the institutions' interest on establishing a mechanism of data exchange with other MPAs and its networks in the Atlantic and also with the MPA Network Twinning project, and explore the priorities in the fields they would be interested to coordinate and collaborate to strengthen capabilities in a transatlantic scale.

Appendix 5

QUESTIONAIRE TO THE ATLANTIC NETWORKS OF MPA MANAGERS

Please, read carefully the following questions and answer them as much precise and detailed as possible using the tables facilitated for each group of questions. Feel free to add any more information or comments to a specific question.

1. Which are the most frequent and important management issues and/or difficulties that face MPA managers within your region? (Answer H/M/L/N depending of the percentage, or approximate estimation, of MPAs of your region that have difficulties in the management of the set of topics presented in the table below: H (high): 70-100%; M (medium): 40-60%; L (low): 10-40% or N (no existent): 0-10%). Please, specify if your answer is based on percentage of current studies/survey or if it is an approximation due to non-existing data.

2. Which technical support do you offer as a network to help managers in the mentioned issues above? Please mention and name the technical support you provide and the way it assists the issue.

3. How do you think that your network support could be improved and completed in the main relevant management issues? Please, name specific actions you will suggest to enhance your support. Which limitations do you identify on offering this service? Please, specify the limitations).

QUESTIONS			1	2		3	
				Technical support	How it supports?	Improvement and completed	Limitations
Ecosystem management	Biological connectivity and ecosystem integrity						
	Ecological research and monitoring						
	Mobile species						
	Endangered/vulnerable species						
	Invasive species						
	Other (specify)						
	Aquaculture and mariculture						
	Fisheries	Small scale					

Anthropogenic activities regulation and management		Large scale					
	Land-based activities (emissions and inputs from…)	Agriculture					
		Forestry					
		Industry					
		Urban waste					
		Other (specify)					
	Tourism and recreational activities	Scuba-diving					
		Human trampling					
		Boat anchoring					
		Habitat loss for touristic facilities expansion in the coast					
		Other (specify)					
	Military activities						
	Placement and operation of…	Submarine cables					
		Pipelines					
	Oil and gas prospections and other resources						
	Others (specify)						
Socio-economic evaluation							
Cultural heritage/archaeological/sacred sites management							
Site maintenance and space of public use							
Habitat/site restoration							
Surveillance and enforcement/Ranger profession							
Stakeholder engagement							
Environmental education							

Communication					
Climate change					
Coastal resilience actions					
Planning					
Integrated Coastal Zone Management (ICZM)					
Marine Spatial Planning (MSP)					
Financing					
Other topics (specify)					

4. Prioritise the topics in the table below which you think are relevant to coordinate in a transatlantic scale among networks to strengthen their capabilities in a regional and larger scale. Specify their importance or priority by number them from 1 to 14, more (if other topics are suggested) or less (if a topic is considered not important in this regard).

5. In which management actions and/or monitoring would you propose to define a common and standardized protocol or methodology among networks to strengthen their cooperation towards achieving and improve the MPAs management effectiveness in a transatlantic level and/or to face other global challenges? Please, prioritize the topics by number them using the same system than the question four in the "cooperation actions" section. Please specify the actions and/or monitoring, the protocol/methodology or target species/stakeholders to focus if you have a suggestion in the "suggestion" part.

6. Would you propose a standardized mechanism of coordination between the different Atlantic MPA managers' networks' to enhance data collection and sharing monitoring and awareness-raising to build a common MPA database in a transatlantic scale? Please, write the specific document or format if you have a recommendation in the "suggestions" section of this question.

QUESTIONS		4	5		6	
			Cooperation actions	Suggestion	Coordinated data collection	Suggestions
Climate change						
Ecological management	Mobile species					
	Invasive species					
	Endangered/vulnerable species					
	Ecosystem/species monitoring protocols					
Coastal resilience						
Evaluation of management effectiveness of MPAs	Management effort and management plans achievement					
	Ecological/biodiversity outcomes					
	Ecosystem services					
Participative management and stakeholder involvement						
Fisheries management (L/SSF)						
Environmental education and raise public awareness						
Other (specify)						

7. How the MPA managers' networks could cooperate to share tools on facilitate information exchange, expert advice and compare management practices? (Please write the answer in the space below). Which topics could they share or collaborate between them? (Please, use the table below to prioritise the topics by number them from 1 to 40 or more (if you have suggested other topics) or less (no need to number or consider a topic if you consider that is not important to this regard).

8. Which weaknesses and strengthen points do you recognize in your MPA managers' network? Please mark them on the table using an "X" (no need to mark all the topics). Why do they exist (expose the potentialities and limitations of the topics if they are known)?

9. In which topics are you more specialized or can you provide expertise regarding MPA management performance? Please, specify the topic, the experience and the management performance you use in more detail in the "explanation" section of this question.

QUESTIONS			7	8			9	
				Weaknesses	Strengthen	Why?	Expertise	Explanation
Ecosystem management	Biological connectivity and ecosystem integrity							
	Ecological research and monitoring							
	Mobile species							
	Endangered/vulnerable species							
	Invasive species							
	Other (specify)							
Anthropogenic activities regulation and management	Aquaculture and mariculture							
	Fisheries	Small scale						
		Large scale						
	Land-based activities (emissions and inputs from…)	Agriculture						
		Forestry						
		Industry						
		Urban waste						
		Other (specify)						
	Tourism and recreational activities	Scuba-diving						
		Human trampling						
		Boat anchoring						
		Habitat loss						

		for touristic facilities expansion in the coast						
		Other (specify)						
	Military activities							
	Placement and operation of…	Submarine cables						
		Pipelines						
	Oil and gas prospections and other resources							
	Others (specify)							
Socio-economic evaluation								
Cultural heritage/archaeological/sacred sites management								
Site maintenance and space of public use								
Habitat/site restoration								
Surveillance and enforcement/Ranger profession								
Stakeholder engagement								
Environmental education								
Communication								
Climate change								
Coastal resilience actions								
Planning								
Integrated Coastal Zone Management (ICZM)								
Marine Spatial Planning (MSP)								
Financing								
Other topics (specify)								

10. Which management support tools does your MPA managers' network provide to the members? Please, mark the table below the topics with an "X".

Management support tools			
Library			
Report of the status of the MPAs and the MPA network			
Protocols and guidebooks	Ecological benefits		
	Management plans		
	Management of endangered or species of interest		
	Socio-economic benefits		
	Sustainable financing		
	Sustainable fishing		
	Sustainable tourism		
	Planning MPA in Climate change		
	MPA Vulnerability assessment tool		
	Design resilient MPA		
	Marine priority conservation areas		
	Guide of scorecards for MPAs		
	Methodological worksheets of communication, community outreach and sensitization tools		
	Environmental education		
	Monitoring guides for…	Species	
		Ecosystems	
		Socio-economic	
		Climate change	
	Governance		
	Business plans development for MPAs		
	Surveillance		
	Gender Equity		
	Management of sacred/cultural natural sites		
		Oil and gas	

	Marine exploitation activities management	Marine cables	
		Renewable energies	
		Aquaculture	
	Marine Spatial Planning		
	Others (specify)		
Others (specify)			

11. Have you elaborated a mechanism of data collection (data base) of your MPAs within your organization? Yes ☐ No ☐

If you do, in which ambits do you collect information? Which program or format do you use to digitalize the information? Please specify the program/format in the table below.

Topics	Information included in the database	Program/format used
Ecosystem and communities		
Species		
Physiographic features description		
Management performance		
Social and economic		
Anthropogenic activities		
Environmental impacts		
Legal framework		
Ecoregions		
Climate change		
Geographic Information System (MPA's geographic and spatial data)		
Experts database		
Others (specify)		

12. Which internal and external communication tools do you use in your manager MPA network? Please, mark the topics with an "X" in the table below.

Internal communication tools	
Website	
Electronic fora	
Email list	
Public outreach tools (videos)	
Expert group	
Newsletter and agenda	
Opportunities (jobs and funding)	
Technical and status reports of different internal projects of the MPAs and the network	
Social network (Facebook, Twitter,..)	
Participation in regional fora	
Videos/Films	
Others (specify)	
External communication tools	
Websites	
Newsletter	
Email list	
Social networks (Facebook, Twitter,…)	
Participation in regional fora	
Participation in external fora	
Videos/Films	
Others (specify)	

13. Which tools do you offer in your organization to promote capacity building among the members? Please specify which ones in the orange section and after from each tool mark the topics offered in the green part from the table below.

Capacity building tools			Topics																		
			Ecosystem management					Anthropogenic activities regulation and management					Cultural heritage/sacred sites management	Site maintenance and space of public use	Habitat/site restoration	Surveillance and enforcement	Participation management and stakeholder involvement	Environmental education	Coastal resilience	Other topics (specify)
			Biological connectivity and ecosystem integrity	Habitat/species research and monitoring	Mobile species	Endanger/vulnerable species	Invasive species	Aquaculture	Fisheries	Land-based activities pollution	Tourism	Exploitation marine activities								
Training	Workshops																				
	Webinars																				
	Others (specify)																				
Follow-up program																					
Mentorship program and technical assistance																					
Exchange of experiences between managers																					
Exchange visits																					
Others (specify)																					

14. Do you provide any financial tools for the MPA managers members of your network? ☐ Yes ☐ No

Please specify number of grants and number of project funded per call as well as the frequency of the calls, the amount of money facilitated per grant and the source of the funding (donor). Has this tool being successful last 5 years? (Please explain the characteristics of the grants if appropriated after the table provided for this question.)

Financial tools (grants)				
Number of grants/call	**Number of projects financed/call**	**Frequency of the calls**	**Amount of money facilitated per grant**	**Source of the funding (donor)**

15. Which advocacy activities does your MPA managers' network perform and in which way do you represent the members of your organization in the decision makers' meetings? Please specify by marking with an "X" the type of meetings in the orange section and the topics considered in this meetings in the green part from the table above. Please determine the mode you represent the members of your organization writing the answer below the table.

Advocacy activities			**Topics**								
			Ocean conservation	**MPA**	**Biodiversity**	**Climate change**	**Other sectors of marine exploitation activities and uses**				
							Fisheries	Oil and gas exploitation	Shipping	Tourism	Others (specify)
Fora	National										
	Regional										
	International										
Conferences	National										
	Regional										
	International										
Congresses	National										
	Regional										
	International										
Collaboration with other initiatives/ projects	National										
	Regional										
	International										
Others (specify)											

16. Any other recommendations on key areas or actions needed and which should be prioritized to improve the achievement towards your network's goals?

17. Any other suggestions or ideas which could be important to develop or explore to strengthen cooperation between the different MPA managers networks within the Atlantic?

It would be much appreciated if you could facilitate any internal reports/documents on the assessment of your network's performance (effectiveness assessment of the technical support of the regional network or other studies related to the MPA managers opinions of evaluation of the networks services), or any other report you may suggest that could be relevant to this study.

Thank you very much for your time and to collaborate with the data collection to develop this thesis linked to the Transatlantic MPA Networks project.

Appendix 6

QUESTIONAIRE TO THE NATIONAL MPA AGENCIES

Please, do read carefully the following questions and answer them as much precised and detailed as possible using the tables facilitated for each group of questions. Feel free to add any more information or comments to a specific question.

1. Which responsibilities or how does your agency contribute in terms of the functionality and operation of the MPA sites and/or MPA network within your country? Please, do specify them in the table facilitated below by marking with an "X" or writing the answer in the "Partner/s institution/s"

Functionality and operation responsibilities		Partner/s institution/s	National MPA sites	MPA National Network
Management performance	Full administration			
	Administration shared with an/other institution/s (specify the institution/s and if possible specify the scope of action and responsibilities of each one including yours)			
Project collaboration or coordination	Full design and manage			
	Manage performance shared with an/other institution/s (specify the institution/s and if possible specify the scope of action and responsibilities of each one, including yours)			
Resources and technical support	Financial support			
	Technical assistance (expert supervision)			
	Documentation support			
	Capacity building			
	Networking			

2. Do you provide management support to the MPA managers in your country? Yes ☐ No ☐
   If you do, which management support tools does your agency provide to the MPA managers? Please, do mark the table below the topics with an "X".

Management support tools			
Report of the status of the MPAs and the MPA network			
Protocols and guidebooks	Ecological benefits		
	Management plans		
	Management of endangered or species of interest		
	Socio-economic benefits		
	Sustainable financing		
	Sustainable fishing		
	Sustainable tourism		
	Planning MPA in Climate change		
	MPA Vulnerability assessment tool		
	Design resilient MPA		
	Marine priority conservation areas		
	Guide of scorecards for MPAs		
	Methodological worksheets of communication, community outreach and sensitization tools		
	Environmental education		
	Monitoring guides for…	Species	
		Ecosystems	
		Socio-economic	
		Climate change	
	Governance		
	Business plans development for MPAs		
	Surveillance		
	Gender Equity		
	Management of sacred/cultural natural sites		
	Marine exploitation activities management	Oil and gas	
		Marine cables	
		Renewable energies	
		Aquaculture	
	Marine Spatial Planning		
	Others (specify)		

Others (specify)	

3. Have you elaborated a mechanism of data collection (data base) of your MPAs within your organization? Yes ☐ No ☐
   If you do, in which fields do you collect information? Which program or format do you use to digitalize the information? Please, do specify the program/format in the table below.

Topics	Information included in the database	Program/format used
Ecosystem and communities		
Species		
Physiographic features description		
Management performance		
Social and economic		
Anthropogenic activities		
Environmental impacts		
Legal framework		
Ecoregions		
Climate change		
Geographic Information System (MPA's geographic and spatial data)		
Experts database		
Others (specify)		

4. Do you have MPA sites to protect specific migratory species with high ecologic value (e.g. Sanctuaries)? Yes ☐ No ☐
   a. If you do, please do write the species name and the sites established for their conservation in the table provided below.
   b. Do you have a mechanism to manage or monitor these sites in coordination within the MPA Nacional Network? Yes ☐ No ☐
   c. If you do, please do mention the species which you are coordinating management between sites, the sites involved and the actions you perform for their conservation in the table facilitated below.

QUESTION	a		c		
	Name of the species	Name of the MPA/s	Species which have a coordinated management	MPAs involved in the coordination management	Management actions
Cetaceans					
Seals					
Marine Turtles					
Sea birds					
Others (Specify)					

5. Do you have a system to coordinate management or monitoring to improve coastal resilience in the sites of the MPA Nacional Network?
   Yes ☐ No ☐

If you do, please do write which topics you manage, the mechanism used and which actions you develop for this aim.

Ambits	Coordinated management (yes/no)	Management mechanism (specify)	Management actions (specify)
Climate change			
Rapid population densification in coastal areas			
Others (Specify)			

6. If you do provide financial support to the MPA sites: Please, do specify number of grants and number of project funded per call as well as the frequency of the calls, the amount of money facilitated per grant and the source of the funding (donor). Has this tool been successful last 5 years? (Please, do explain the characteristics of the grants if appropriated after the table provided for this question.)

Financial tools (grants)				
Number of grants/call	**Number of projects financed/call**	**Frequency of the calls**	**Amount of money facilitated per grant**	**Source of the funding (donor)**

7. Which advocacy activities does your agency perform and in which way do you represent the MPA managers of your country in the decision makers' meetings? Please do specify by marking with an "X" the type of meetings in the orange section and the topics considered in this meetings in the green part from the table above. Please determine the mode you represent the members of your organization writing the answer below the table.

Advocacy activities			Topics								
			Ocean conservation	MPA	Biodiversity	Climate change	Other sectors of marine exploitation activities and uses				
							Fisheries	Oil and gas exploitation	Shipping	Tourism	Others (specify)
Fora	National										
	Regional										
	International										
Conferences	National										
	Regional										
	International										
Congresses	National										
	Regional										
	International										
Collaboration with other initiatives/ projects	National										
	Regional										
	International										
Others (specify)											

8. Which are the most frequent and important management issues and/or difficulties that face MPA managers within your country? (Answer H/M/L/N depending of the percentage, or approximate estimation, of MPAs of your region that have difficulties in the management of the set of topics presented in the table below: H (high): 70-100%; M (medium): 40-60%; L (low): 10-40% or N (no existent): 0-10%). Please, specify if your answer is based on percentage of current studies/survey or if it is an approximation due to non-existing data.

9. Which technical support do you offer as an institution to help managers in the mentioned issues above? Please mention and name the technical support you provide and the way it assists the issue if applicable.

10. How do you think the support offered in your agency could be improved and completed in the main relevant MPA management issues? Please, do name specific actions you will suggest to enhance your support. Which limitations do you identify on offering this service? Please, specify the limitations).

QUESTIONS			8	9		10	
				Technical support	How it supports?	Improvement and completed	Limitations
Ecosystem management	Biological connectivity and ecosystem integrity						
	Ecological research and monitoring						
	Mobile species						
	Endangered/vulnerable species						
	Invasive species						
	Other (specify)						
Anthropogenic activities regulation and management	Aquaculture and mariculture						
	Fisheries	Small scale					
		Large scale					
	Land-based activities (emissions and inputs from…)	Agriculture					
		Forestry					
		Industry					
		Urban waste					
		Other (specify)					
	Tourism and recreational activities	Scuba-diving					
		Human trampling					
		Boat anchoring					
		Habitat loss for touristic facilities expansion in the coast					
		Other (specify)					
	Military activities						
	Placement and operation of…	Submarine cables					
		Pipelines					
	Oil and gas prospections and other						

	resources					
	Others (specify)					
Socio-economic evaluation						
Cultural heritage/archaeological/sacred sites management						
Site maintenance and space of public use						
Habitat/site restoration						
Surveillance and enforcement / Ranger profession						
Stakeholder engagement						
Environmental education						
Communication						
Climate change						
Coastal resilience actions						
Planning						
Integrated Coastal Zone Management (ICZM)						
Marine Spatial Planning (MSP)						
Financing						
Other topics (specify)						

11. Would it be of your interest to establish connection and cooperation with other national/sub-regional/regional MPA networks in a transatlantic scale? Specify which potential benefits of the connection between institutions you would be interested to develop. Please, do mark with an "X" in the set of topics within the table above.

	National MPA networks	**Sub-regional MPA networks**	**Regional MPA networks**
Interest (Yes/No answer)			
Specify potential benefits			
Management technical tools sharing			
Management pilot/innovative projects sharing and coordination			

Coordinate database for data exchange				
Coordinate management of common issues	Climate Change			
	Common ecological features between sites (species and habitats)			
	Mobile species			
	Pollution			
	Others (specify)			
Coordinate monitoring in common issues	Climate Change			
	Common ecological features between sites (species and habitats)			
	Mobile species			
	Pollution			
	Others (specify)			
Management experience sharing platform				
Others (Specify)				

12. Prioritise the topics in the table below which you would have interest to coordinate among MPA networks to strengthen their capabilities in a regional and larger scale. Do specify their importance or priority by number them from 1 to 14, more (if other topics are suggested) or less (if a topic is considered not important in this regard).

13. In which management actions and/or monitoring would you be interested on defining a common and standardized protocol or methodology among national MPAs to strengthen the cooperation towards achieving and improve the MPAs management effectiveness in a transatlantic level and/or to face other global challenges? Please, prioritize the topics by number them using the same system than the question four in the "cooperation actions" section. Please, do specify the actions and/or monitoring, the protocol/methodology or target species/stakeholders to focus if you have a suggestion in the "suggestion" part.

14. Which topics would you consider as relevant or you would be interested to exchange between other MPA national networks in a transatlantic scale to enhance data collection and sharing monitoring and awareness-raising coordinating a common MPA database in a transatlantic scale? Please, do use the table below to mark the topics, and also to write the specific document or format if you have a recommendation in the "suggestions" section of this question.

QUESTIONS		12	13		14	
			Cooperation actions	Suggestion	Coordinated data collection	Suggestions
Climate change						
Ecological management	Mobile species					
	Invasive species					
	Endangered/vulnerable species					
	Ecosystem/species monitoring protocols					
Coastal resilience						
Evaluation of management effectiveness of MPAs	Management effort and management plans achievement					
	Ecological/biodiversity outcomes					
	Ecosystem services					
Participative management and stakeholder involvement						
Fisheries management (L/SSF)						
Environmental education and raise public awareness						
Other (specify)						

15. Which weaknesses and strengthen points do you recognize in your agency regarding MPA management administration or support? Please mark them on the table using an "X" (no need to mark all the topics). Why do they exist (expose the potentialities and limitations of the topics if they are known)?

16. In which topics are you more specialized, innovative or can you provide expertise regarding MPA management performance? Please, do specify the topic, the experience and the management performance you use in more detail in the "explanation" section of this question.

QUESTIONS			12			13	
			Weaknesses	Strengthen	Why?	Expertise	Explanation
Ecosystem management	Biological connectivity and ecosystem integrity						
	Ecological research and monitoring						
	Mobile species						
	Endangered/vulnerable species						
	Invasive species						
	Other (specify)						
Anthropogenic activities regulation and management	Aquaculture and mariculture						
	Fisheries	Small scale					
		Large scale					
	Land-based activities (emissions and inputs from…)	Agriculture					
		Forestry					
		Industry					
		Urban waste					
		Other (specify)					
	Tourism and recreational activities	Scuba-diving					
		Human trampling					
		Boat anchoring					
		Habitat loss for touristic facilities expansion in the coast					
		Other (specify)					
	Military activities						
	Placement and operation	Submarine cables					

	of…	Pipelines					
	Oil and gas prospections and other resources						
	Others (specify)						
Socio-economic evaluation							
Cultural heritage/archaeological/sacred sites management							
Site maintenance and space of public use							
Habitat/site restoration							
Surveillance and enforcement/Ranger profession							
Stakeholder engagement							
Environmental education							
Communication							
Climate change							
Coastal resilience actions							
Planning							
Integrated Coastal Zone Management (ICZM)							
Marine Spatial Planning (MSP)							
Financing							
Other topics (specify)							

17. Which coordination would you suggest between your institution and Transatlantic MPA Networks project? Please, do write the answer and specify the way or mechanism if you do have any suggestion.

18. Any other recommendations on key areas or actions needed and which should be prioritized to improve the achievement towards your agency goals regarding MPA management?

19. Any other suggestions or ideas which could be important to develop or explore to strengthen cooperation between the different MPA managers networks organizations within the Atlantic?

It would be much appreciated if you could facilitate any internal reports/documents on the assessment of your network's performance (effectiveness assessment of the technical support of the regional network or other studies related to the MPA managers opinions of evaluation of the networks services), or any other report you may suggest that could be relevant to this study.

Thank you very much for your time and to collaborate with the data collection to develop this thesis linked to the Transatlantic MPA Networks project.

Appendix 7

QUESTIONAIRE TO THE INTERNATIONAL INSTITUTIONS

Please, read carefully the following questions and answer them as much precised and detailed as possible using the tables facilitated for each group of questions when applicable. Feel free to add any more information or comments to a specific question.

1. How the efforts and actions regarding MPAs are structured within your institutional framework? Please, do write the question in the space below.

    a. Do you have specific institutional areas responsible of MPA management activities and actions? Please, do cite the name of the areas and their responsibilities. Please, do use the table facilitated below.

Areas of MPAs and their networks management name	Responsibilities

2. Which challenges do you face in your MPA network while establishing and applying policies or performing management actions focused on management of MPAs? Please, do write the question in the space below.

3. Would your institution be interested on developing more efforts within the MPA management scope of action or responsibilities?
   Yes ☐ No ☐
   a. If yes, in which way or ambits would you expand it? Please, do write the answer in the space below.

4. Which are the most frequent and important management issues and/or difficulties that face MPA managers within the region your institution is operating? (Answer H/M/L/N depending of the percentage, or approximate estimation, of MPAs of your region that have difficulties in the management of the set of topics presented in the table below: H (high): 70-100%; M (medium): 40-60%; L (low): 10-40% or N (no existent): 0-10%). Please, do specify if your answer is based on percentage of current studies/survey or if it is an approximation due to non-existing data. Please, do use the table provided below to answer the question.

5. Which technical support do you offer as institution to help MPA management to your contracting parties and their national administrations? Please mention and name the technical support you provide and the way it assists the issue. Would it be this support potentially applicable in an Atlantic scale? Please, do use the table provided below to answer the question.

6. How do you think that your institution support could be improved and completed in the main relevant MPA management issues? Please, name specific actions you will suggest to enhance your support. Which limitations do you identify on offering this service? Please, do specify the limitations. Please, do use the table provided below to answer the question.

QUESTIONS			4	5			6	
				Technical support	How it supports?	Applicable in Atlantic?	Improvement and completed	Limitations
Ecosystem management	Biological connectivity and ecosystem integrity							
	Ecological research and monitoring							
	Mobile species							
	Endangered/vulnerable species							
	Invasive species							
	Other (specify)							
Anthropogenic activities regulation and	Aquaculture and mariculture							
	Fisheries	Small scale						
		Large scale						
	Land-based activities (emissions and inputs from…)	Agriculture						
		Forestry						
		Industry						
		Urban waste						
		Other (specify)						
	Tourism and recreational	Scuba-diving						
		Human trampling						
		Boat anchoring						
		Habitat loss for						

management	activities	touristic facilities expansion in the coast						
		Other (specify)						
	Military activities							
	Placement and operation of…	Submarine cables						
		Pipelines						
	Oil and gas prospections and other resources							
	Others (specify)							
Socio-economic evaluation								
Cultural heritage/archaeological/sacred sites management								
Site maintenance and space of public use								
Habitat/site restoration								
Surveillance and enforcement/Ranger profession								
Stakeholder engagement								
Environmental education								
Communication								
Climate change								
Coastal resilience actions								
Planning								
Integrated Coastal Zone Management (ICZM)								
Marine Spatial Planning (MSP)								
Financing								
Other topics (specify)								

7. Have you established collaboration agreements with other international or regional institutions within the sector of MPAs and its networks?

   Yes ☐ No ☐

If yes, please do cite the name of the organization, the mechanism of collaboration, the period of collaboration and the benefits from both institutions emerged from this connection. Please, do use the table below for the information collection.

Institution which you had agreements with (name)	Type of mechanism of the collaboration	Period of time of the collaboration (months/years)	Benefits of the Commission	Benefits of the external institution

8. Would you be interested on establishing a connection with other institutions or projects developing conservation efforts on MPAs and their networks in Atlantic scale? Yes ☐ No ☐

   a. If yes, would you be interested on developing a link or coordination between HELCOM Commission and the Transatlantic MPA Networks project? Yes ☐ No ☐
   b. Which kind of role or coordination would you suggest? Please, do write the answer in the space below.

9. Which weaknesses and strengthen points do you recognize in the MPAs and their networks sector developed in your institution? Please, do mark them on the table facilitated below using an "X" (no need to mark all the topics). Why do they exist (expose the potentialities and limitations of the topics if they are known)?

10. In which topics your institution has develop more specialization or could potentially provide expertise regarding MPA management performance? Please, do specify the topic, the overall experience and the management performance you use in more detail in the "explanation" section of this question.

QUESTIONS		9			10	
		Weaknesses	Strengthen	Why?	Expertise	Explanation
Ecosystem	Biological connectivity and ecosystem integrity					
	Ecological research and monitoring					
	Mobile species					

management	Endangered/vulnerable species						
	Invasive species						
	Other (specify)						
Anthropogenic activities regulation and management	Aquaculture and mariculture						
	Fisheries	Small scale					
		Large scale					
	Land-based activities (emissions and inputs from…)	Agriculture					
		Forestry					
		Industry					
		Urban waste					
		Other (specify)					
	Tourism and recreational activities	Scuba-diving					
		Human trampling					
		Boat anchoring					
		Habitat loss for touristic facilities expansion in the coast					
		Other (specify)					
	Military activities						
	Placement and operation of…	Submarine cables					
		Pipelines					
	Oil and gas prospections and other resources						
	Others (specify)						
Socio-economic evaluation							
Cultural heritage/archaeological/sacred sites management							

Site maintenance and space of public use					
Habitat/site restoration					
Surveillance and enforcement/Ranger profession					
Stakeholder engagement					
Environmental education					
Communication					
Climate change					
Coastal resilience actions					
Planning					
Integrated Coastal Zone Management (ICZM)					
Marine Spatial Planning (MSP)					
Financing					
Other topics (specify)					

11. Would you be interested on establishing a mechanism of data exchange with other MPAs and its networks in the Atlantic within the Transatlantic MPA Networks project? Yes ☐ No ☐

If you do, which ambits would you develop in this potential coordination/collaboration? Please, do use the table below to prioritise the topics you think would be relevant to coordinate to strengthen capabilities in a transatlantic scale. Please, do specify their importance or priority by number them from 1 to 14, more (if other topics are suggested) or less (if a topic is considered not important in this regard).

12. Would you be interested on creating coordination between MPA institutions within an Atlantic scale to improve management effectiveness and/or to face other global challenges by establishing standardized protocols, methodologies and/or monitoring? Yes ☐ No ☐

If you do, please do prioritize the topics by number them using the same system than the question 11 in the "cooperation actions" section. Please, do specify the actions and/or monitoring, the protocol/methodology or target species/stakeholders to focus if you have a suggestion in the "suggestion" part facilitated in the table below.

13. Would you be interested on building a standardized mechanism of coordination between the different Atlantic MPA networks' institutions to enhance data collection and sharing monitoring and awareness-raising to build a common MPA database in a transatlantic scale?

Yes ☐ No ☐

If you do, please do write the specific document or format if you have a recommendation in the "suggestions" section of this question in the table.

QUESTIONS		11	12		13	
			Cooperation actions	Suggestion	Coordinated data collection	Suggestions
Climate change						
Ecological management	Mobile species					
	Invasive species					
	Endangered/vulnerable species					
	Ecosystem/species monitoring protocols					
Coastal resilience						
Evaluation of management effectiveness of MPAs	Management effort and management plans achievement					
	Ecological/biodiversity outcomes					
	Ecosystem services					
Participative management and stakeholder involvement						
Fisheries management (L/SSF)						
Environmental education and raise public awareness						
Other (specify)						

.

14. Which management support tools does your institution provide to their contracting parties within the MPAs and their networks? Please, mark the table below the topics with an "X".

Management support tools			
Report of the status of the MPAs and the MPA network			
Protocols and guidebooks	Ecological benefits		
	Management plans		
	Management of endangered or species of interest		
	Socio-economic benefits		
	Sustainable financing		
	Sustainable fishing		
	Sustainable tourism		
	Planning MPA in Climate change		
	MPA Vulnerability assessment tool		
	Design resilient MPA		
	Marine priority conservation areas		
	Guide of scorecards for MPAs		
	Methodological worksheets of communication, community outreach and sensitization tools		
	Environmental education		
	Monitoring guides for…	Species	
		Ecosystems	
		Socio-economic	
		Climate change	
	Governance		
	Business plans development for MPAs		
	Surveillance		
	Gender Equity		
	Management of sacred/cultural natural sites		
	Marine exploitation activities management	Oil and gas	
		Marine cables	
		Renewable energies	
		Aquaculture	
	Marine Spatial Planning		
	Others (specify)		

Others (specify)	

15. Have you elaborated a mechanism of data collection (data base) of your MPAs within your institution? Yes ☐ No ☐

If you do, in which fields do you collect information? Which program or format do you use to digitalize the information? Please, do specify the program/format in the table below.

Topics	Information included in the database	Program/format used
Ecosystem and communities		
Species		
Physiographic features description		
Management performance		
Social and economic		
Anthropogenic activities		
Environmental impacts		
Legal framework		
Ecoregions		
Climate change		
Geographic Information System (MPA's geographic and spatial data)		
Experts database		
Others (specify)		

16. Do you have a MPA sites to protect specific migratory species with high ecologic value (e.g. Sanctuaries)? Yes ☐ No ☐
    d. If you do, please do write the species name and the sites established for their conservation in the table provided below.
    e. Do you have a mechanism to manage or monitor these sites in coordination within the MPAs Network of the area? Yes ☐ No ☐
    f. If you do, please do mention the species which you are coordinating management between sites, the sites involved and the actions you perform for their conservation in the table facilitated below.

QUESTION	a		c		
	Name of the species	Name of the MPA/s	Species which have a coordinated management	MPAs involved in the coordination management	Management actions
Cetaceans					
Seals					
Marine Turtles					
Sea birds					
Others (Specify)					

17. Do you have a system to coordinate management or monitoring to improve coastal resilience in the MPA sites and Network within your region?

Yes ☐ No ☐

If you do, please do write which fields you manage, the mechanism you use and which actions you develop for this aim in the table facilitated.

Ambits	Coordinated management (yes/no)	Management mechanism (specify)	Management actions (specify)
Climate change			
Rapid population densification in coastal areas			
Others (Specify)			

18. Which internal and external communication tools do you use in your institution regarding MPAs and their networks? Please, do mark the topics with an "X" in the table provided.

Internal communication tools	
Website	
Electronic fora	
Email list	
Public outreach tools (videos)	
Expert group	
Newsletter and agenda	
Opportunities (jobs and funding)	

Technical and status reports of different internal projects of the MPAs and the network	
Social network (Facebook, Twitter,..)	
Participation in regional fora	
Videos/Films	
Others (specify)	
External communication tools	
Websites	
Newsletter	
Email list	
Social networks (Facebook, Twitter,…)	
Participation in regional fora	
Participation in external fora	
Videos/Films	
Others (specify)	

19. Which tools do you offer to promote capacity building among the contracting parties within your institution? Please, do specify which ones in the orange section and after from each tool mark the topics offered in the green part from the table below.

Capacity building tools			**Topics**																	
			Ecosystem management					**Anthropogenic activities regulation and management**					**Cultural heritage/sacred sites management**	**Site maintenance and space of public use**	**Habitat/site restoration**	**Surveillance and enforcement**	**Participation management and stakeholder involvement**	**Environmental education**	**Coastal resilience**	**Other topics (specify)**
			Biological connectivity and ecosystem integrity	Habitat/species research and monitoring	Mobile species	Endanger/vulnerable species	Invasive species	Aquaculture	Fisheries	Land-based activities pollution	Tourism	Exploitation marine activities								
Training	Workshops																			
	Webinars																			

Others (specify)																				
Follow-up program																				
Mentorship program and technical assistance																				
Exchange of experiences between managers																				
Exchange visits																				
Others (specify)																				

20. Does your institution provide any financial tools to the contracting parties regarding MPAs and its networks?

Yes ☐ No ☐

Please, do specify number of grants and number of project funded per call as well as the frequency of the calls, the amount of money facilitated per grant and the source of the funding (donor). (Please explain the characteristics of the grants if appropriated after the table provided for this question.)

Financial tools (grants)				
Number of grants/call	**Number of projects financed/call**	**Frequency of the calls**	**Amount of money facilitated per grant**	**Source of the funding (donor)**

21. Which advocacy activities does your institution perform and in which way do you represent the contracting parties of your organization in the decision makers' meetings regarding MPAs and its networks? Please, do specify by marking with an "X" the type of meetings in the orange section and the topics considered in this meetings in the green part from the table above. Please, do determine the mode you represent the members of your organization writing the answer below the table.

Advocacy activities			**Topics**								
			Ocean conservation	**MPA**	**Biodiversity**	**Climate change**	**Other sectors of marine exploitation activities and uses**				
							Fisheries	Oil and gas exploitation	Shipping	Tourism	Others (specify)
Fora	National										
	Regional										

	International										
Conferences	National										
	Regional										
	International										
Congresses	National										
	Regional										
	International										
Collaboration with other initiatives/ projects	National										
	Regional										
	International										
Others (specify)											

22. Any other recommendations on key areas or actions needed and which should be prioritized to improve the achievement towards your institution's goals?

23. Any other suggestions or ideas which could be important to develop or explore to strengthen cooperation between the different MPA networks within the Atlantic?

It would be much appreciated if you could facilitate any internal reports/documents on the assessment of your network's performance (effectiveness assessment of the technical support of the regional network or other studies related to the MPA managers opinions of evaluation of the networks services), or any other report you may suggest that could be relevant to this study.

Thank you very much for your time and to collaborate with the data collection to develop this thesis linked to the Transatlantic MPA Networks project.

APPENDIX 8

INFORMED CONSENT FORM CaMPAM

Title of Project: Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project

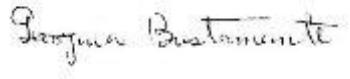
Principal Researcher: Marta Romeu Bellés

You are being asked to participate in a research study due to your professional position in the CaMPAM the regional network of MPA managers in the Caribbean, which is involved in the Transatlantic MPA Network project.

WHAT IS THE PURPOSE OF THIS STUDY?
This thesis is linked to the Networks Twinning project, subproject of the Transatlantic MPA Network, which aims to promote networking, unify resources and support capacity building among the regional MPA managers' networks existing in the Atlantic. In this way, it pursuits to establish a mechanism of coordination between networks and to define actions to enhance management effectiveness of the MPAs, as well as collaborate to improve other issues of common interest.. This study contributes to identify key elements within their existing resources and distinguish potential collaboration between the networks to strengthen and improve their function and capacities. Thereafter, it seeks to define actions to be developed to implement the goals described in the common strategy of this project.
This study is developed by sending questionnaires to targeted individuals from the different organizations involved in the Transatlantic MPA Network project.

WHAT IS THIS DOCUMENT FOR?
This document serves as a formal written consent to name CaMPAM as well as the organization's information provided by its staff in the questionnaire used to develop the master's thesis "Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project". This master's thesis is conducted by the student Marta Romeu Bellés from the University Centre of the Westfjords, and supervised by Purificació Canals, the team leader of the Transatlantic MPA Network project and also the chairperson of MedPAN. This present document also determines your agreement with the information exposed from the questionnaires in the mentioned thesis regarding CaMPAM for the internal publication at the University Centre of the Westfjords.

By signing this consent form, you indicate that you agree to participate in this study.



5th, 2019 August

Signature of the Participant Date

Printed Name of Participant Georgina Bustamante

INFORMED CONSENT FORM MedPAN

Title of Project: Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project

Principal Researcher: Marta Romeu Bellés

You are being asked to participate in a research study due to your professional position in the MedPAN the regional network of MPA managers in the Mediterranean, which is involved in the Transatlantic MPA Network project.

WHAT IS THE PURPOSE OF THIS STUDY?

This thesis is linked to the Networks Twinning project, subproject of the Transatlantic MPA Network, which aims to promote networking, unify resources and support capacity building among the regional MPA managers' networks existing in the Atlantic. In this way, it pursuits to establish a mechanism of coordination between networks and to define actions to enhance management effectiveness of the MPAs, as well as collaborate to improve other issues of common interest.. This study contributes to identify key elements within their existing resources and distinguish potential collaboration between the networks to strengthen and improve their function and capacities. Thereafter, it seeks to define actions to be developed to implement the goals described in the common strategy of this project.

This study is developed by sending questionnaires to targeted individuals from the different organizations involved in the Transatlantic MPA Network project.

WHAT IS THIS DOCUMENT FOR?

This document serves as a formal written consent to name MedPAN as well as the organization's information provided by its personnel in the questionnaire used to develop the master's thesis "Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project". This master's thesis is conducted by the student Marta Romeu Bellés from the University Centre of the Westfjords, and supervised by Purificació Canals, the team leader of the Transatlantic MPA Network project and also the chairperson of MedPAN. This present document also determines your agreement with the information exposed from the questionnaires in the mentioned thesis regarding MedPAN for the internal publication at the University Centre of the Westfjords.

By signing this consent form, you indicate that you agree to participate in this study.

15/11/2019

Signature of the Participant Date

Printed Name of Participant Marie Romani

INFORMED CONSENT FORM RAMPAO

Title of Project: Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project

Principal Researcher: Marta Romeu Bellés

You are being asked to participate in a research study due to your professional position in the Regional Network of Marine Protected Areas in West Africa **(**RAMPAO), which is involved in the Transatlantic MPA Network project.

WHAT IS THE PURPOSE OF THIS STUDY?

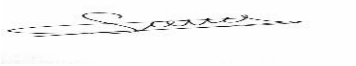
This thesis is linked to the Networks Twinning project, subproject of the Transatlantic MPA Network, which aims to promote networking, unify resources and support capacity building among the regional MPA managers' networks existing in the Atlantic. In this way, it pursuits to establish a mechanism of coordination between networks and to define actions to enhance management effectiveness of the MPAs, as well as collaborate to improve other issues of common interest.. This study contributes to identify key elements within their existing resources and distinguish potential collaboration between the networks to strengthen and improve their function and capacities. Thereafter, it seeks to define actions to be developed to implement the goals described in the common strategy of this project.

This study is developed by sending questionnaires to targeted individuals from the different organizations involved in the Transatlantic MPA Network project.

WHAT IS THIS DOCUMENT FOR?

This document serves as a formal written consent to name RAMPAO as well as the organization's information provided by its personnel in the questionnaire used to develop the master's thesis "Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project". This master's thesis is conducted by the student Marta Romeu Bellés from the University Centre of the Westfjords, and supervised by Purificació Canals, the team leader of the Transatlantic MPA Network project and also the chairperson of MedPAN. This present document also determines your agreement with the information exposed from the questionnaires in the mentioned thesis regarding RAMPAO for the internal publication at the University Centre of the Westfjords.

By signing this consent form, you indicate that you agree to participate in this study.



11/11/2019

Signature of the Participant Date

Printed Name of Participant Marie Suzanne Traoré

INFORMED CONSENT FORM OSPAR SECRETARIAT

Title of Project: Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project

Principal Investigator: Marta Romeu Bellés

You are being asked to participate in this research study due to your professional position in the OSPAR Secretariat, which is linked to the Transatlantic MPA Network project.

WHAT IS THE PURPOSE OF THIS STUDY?

This thesis is linked to the Networks Twinning project, subproject of the Transatlantic MPA Network, which aims to promote networking, unify resources and support capacity building among the regional MPA managers' networks existing in the Atlantic. In this way, it aims to establish a mechanism of coordination between networks and to define actions to enhance management effectiveness of the MPAs, as well as collaborate to improve other issues of common interest. This study contributes to identify key elements within their existing resources and distinguish potential collaboration between the networks to strengthen and improve their function and capacities. Thereafter, it seeks to define actions to be developed to implement the goals described in the common strategy of this project.

This study is developed by sending questionnaires to targeted individuals from the different organizations involved or in connection with the Transatlantic MPA Network project.

WHAT IS THIS DOCUMENT FOR?

This document serves as a formal written consent to name OSPAR Secretariat as well as the organization's information provided by its personnel in the questionnaire used to develop the master's thesis "Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project". This master's thesis is conducted by the student Marta Romeu Bellés from the University Centre of the Westfjords, and supervised by Purificació Canals, the team leader of the Transatlantic MPA Network project and also the chairperson of MedPAN. This present document also determines your agreement with the information exposed from the questionnaires in the mentioned thesis regarding OSPAR Secretariat for the internal publication at the University Centre of the Westfjords.

By signing this consent form, you indicate that you agree to participate in this study.

26 November 2019

Signature of the Participant Date

Printed Name of Participant Lena Avellan

INFORMED CONSENT FORM

Title of Project: Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project

Principal Investigator: Marta Romeu Bellés

You are being asked to participate in this research study due to your professional position in the National Oceanic and Atmospheric Administration (NOAA), which is linked to the Transatlantic MPA Network project.

WHAT IS THE PURPOSE OF THIS STUDY?

This thesis is linked to the Networks Twinning project, subproject of the Transatlantic MPA Network, which aims to promote networking, unify resources and support capacity building among the regional MPA managers' networks existing in the Atlantic. In this way, it aims to establish a mechanism of coordination between networks and to define actions to enhance management effectiveness of the MPAs, as well as collaborate to improve other issues of common interest. This study contributes to identify key elements within their existing resources and distinguish potential collaboration between the networks to strengthen and improve their function and capacities. Thereafter, it seeks to define actions to be developed to implement the goals described in the common strategy of this project.

This study is developed by sending questionnaires to targeted individuals from the different organizations involved or in connection with the Transatlantic MPA Network project.

WHAT IS THIS DOCUMENT FOR?

This document serves as a formal written consent to name NOAA as well as the organization's information provided by its personnel in the questionnaire used to develop the master's thesis "Strengthening MPAs' Networking Capacity at Transatlantic Scale: Analysis and Recommendations to develop the Common Strategy of Transatlantic MPA Managers' Networks Project". This master's thesis is conducted by the student Marta Romeu Bellés from the University Centre of the Westfjords, and supervised by Purificació Canals, the team leader of the Transatlantic MPA Partnership project and also the chairperson of MedPAN. This present document also determines your agreement with the information exposed from the questionnaires in the mentioned thesis regarding NOAA for the internal publication at the University Centre of the Westfjords.

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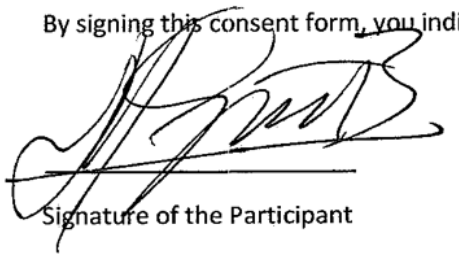

11/13/2019

Signature of the Participant — Date

Printed Name of Participant Gonzalo Cid


Háskólasetur
Vestfjarða
University Centre
of the Westfjords