

A Comparative Study on MPA's and OECM's Conservation Management: Key Findings and Lesson Learned

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Abstract

Marine Protected Areas (MPAs) and Other Effective Area-Based Conservation Measures (OECMs) are two conservation approach models that offer conservation programs through activities related to protecting marine ecosystems and promoting social and economic sustainability issues, and culture. Even though they are two different approaches, they complement each other and have an important role in conservation activities. This study uses a comparative method to analyze the similarities and differences between MPAs and OECMs. The research results show that these two approaches have the same main goal, namely protecting biodiversity and promoting sustainable ecosystems. Meanwhile, in relation to different aspects, there are several components such as definitions, approaches and implementation mechanisms. MPAs tend to be more focused on protecting specific areas with restrictions on human activity and activities, whereas OECMs offer greater flexibility by integrating conservation in a variety of land and resource use contexts. In terms of conservation objectives, both MPAs and OECMs aim to improve the quality of life of entire ecosystems, protect threatened species, and support local economic sustainability. This can be done through ecotourism and responsible resource management. Thus, the implementation of these two approaches can have a positive impact on all stakeholders involved in conservation and sustainable development.

Keywords: Comparative Study, KKP, MPAs, OECMs, Conservation, Ecotourism

INTRODUCTION

In the last decades, global efforts to protect natural resources and manage biodiversity have increasingly focused on area-based conservation measures. There are few approaches that have gained prominence, such as biosphere reserves (Van Cuong et al., 2017), wildlife sanctuaries and reserves (Dhami, 2018), conservation easements (Farmer et al., 2015), sustainable forestry and agriculture, Integrated Coastal Zone Management (ICZM) (Yus et al., 1974) (Portman et al., 2012), Community Conserved Areas (CCAs) (Bruns et al., 1974), Agroecology, Ecological Restoration, Payments for Ecosystem Services (PES) (Barral et al., 2015), and Transboundary Conservation Areas (Turnbull et al., 2004).

These approaches, alongside with Marine Protected Area (MPA) and OECM (Other Effective Area-Based Conservation Measures), represent a various and diverse toolkit for conservation practitioners and multisector stakeholders (Purba, 2020). The choice of

approach often depends on local ecological, social, and economic contexts, and successful conservation typically requires collaboration among various stakeholders from every level and scope of authorities, including governments, communities, NGOs, and the private sector (Ban et al., 2023). Each approach aims to foster a sustainable relationship between humans and nature, ultimately contributing to the preservation of biodiversity and the health of ecosystems.

This comparative research study focused on MPA and OECM as two conservation approaches that recently gain fully attention, especially in Labuan Bajo, West Manggarai Regency, as one of super-priority tourism destination in Indonesia since 2019 (Estradivari et al., 2024).

A comparative study is needed based on questions from local communities about how these two approaches differ in their own management, governance procedures, ability and effectiveness. This gap of understanding limits the potential to optimize conservation strategies and ensure the sustainability development of marine and coastal ecosystems. This comparative study is also needed to identify key lessons from both models and how these models can complement each other to enhance local and global conservation outcomes.

LITERATURE REVIEW

Comparative Study

Comparative studies are research methods aimed to understanding and testing the differences between two or more groups. This method starts with the tendency, the history of human thought, to distort their perceptions of “the different” and understand it through categories (Flannery, B.~P.Teukolsky et al., 2004). Comparative studies involve comparing specific variables across different subjects or models to identify causal relationships. This method also involves gathering data relevant, descriptive investigation and analyzing, and extract new conclusions based on its comparing factors and variables, or impact on policies or practices.

In other words, comparative studies serve as a valuable tool in research, allowing for an in-depth analysis of various policies, phenomena, and practices. By identifying similarities and differences, researchers can draw meaningful conclusions that contribute to the understanding and improvement of specific fields of study. This method also useful in policy analysis, social sciences or any other context where evaluating multiple factors is essential for informed decision-makers and regulators.

Marine Protected Areas (MPAs)

The Fort Jefferson National Monument in Florida, established in 1935, is considered the world's first MPA that adopted an ecosystem-based approach. However, the major momentum for establishing MPAs arose during the 1962 World Parks Congress on National Parks and a subsequent 1982 meeting. This congress and meeting advocated for the inclusion of marine, coastal, and freshwater areas in the global network of protected sites.

In 2003, the 5th IUCN World Parks Congress expanded its recommendations to call for the creation of a global system of well-managed and representative networks of marine and coastal protected areas by 2012. This goal was upheld in the Convention on Biological Diversity (CBD's) 2011–2020 strategic plan. Later on, by 2012, it became clear that the 10% target would not be met, leading to an extension deadline to 2020,

along with a revised target. The new goal stated that by 2020, said that at least 17% of terrestrial and inland waters, and 10% of coastal and marine areas, especially those crucial for biodiversity and ecosystem services, should be conserved through effectively and equitably managed, ecologically representative, and well-connected systems (Laffoley et al., 2018).

By 2021, there were almost 18.000 MPAs globally. It happened because MPAs are officially established through national and international laws and represent a top-down strategy for conserving marine biodiversity. In other words, there are 2.9% of ocean area is in implemented or fully protected zones based on most recent assessment on 2024, 2.8% is in not fully protected zones, and 1.9% is in unimplemented zones.



Figure 1. Strategic Plan for Biological Diversity 2011-2020, known as Aichi Targets, containing 20 biodiversity targets

Source: <https://www.cbd.int/sp/targets>

Other Effective Area-Based Conservation Measures (OECMs)

As it explained before, the 10th Conference of the Parties of the Convention on Biodiversity (CBD COP 10) targeted 20 reached actions. In order to defining this target, the CBD COP 10 also introduced a new and previously undefined category of conservation tools, known as “other effective area-based conservation measures” (OECMs).

Later on, in November 2018, this OECMs get its formal definitions said that OECMs is “a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values” (Fitzsimons et al., 2024).

The emphasis on OECMs, as it written in draft Target 3 of the Post-2020 Global Biodiversity Framework, aims to conserve 30% of marine areas by 2030. In others words,

this OECMs offers the potential strategies for recognizing sites and practices outside of MPAs that contribute to conservation efforts.

METHODOLOGY

This research focuses on two models of conservations approach: MPAs and OECMs. Both approaches were selected for the comparative study due to several factors, particularly to the limitation of understanding of the comparative strengths and their similarities or differences in achieving conservation goals.

While both approaches also share a common emphasis on sustainability and conservation as a core concept, the study's scope is aimed at narrowing the comparison and clearly defining the data being analyzed, including a general overview, similarities and differences in their main regulations, and the conservations development and goals objectives from their own perspectives.

The study utilizes qualitative data, specifically referring to general descriptions of the two models and regulations, along with the similarities and differences between these regulations and their relevance to conservation aspects. The data used in this study is secondary, which is gathered from the content of the regulations themselves or from other relevant sources supporting the comparative analysis.

The data collection method involves comparing variables that are interconnected, by highlighting the differences and similarities in main core idea and product policies. The analysis of this data follows a qualitative approach, which involves systematically organizing and analyzing the data obtained from comparisons. This includes categorizing the data, breaking it into units, synthesizing it, identifying patterns, selecting key points for study, and drawing conclusions in a way that is clear for both the researcher and others.

RESULTS AND DISCUSSION

Comparative Analysis of MPAs and OECMs Conservation Management

This subchapter offers a comparative examination of MPAs and OECMs, as crucial method for conservation management. The analysis bolds the related aspects of each model. The findings provide valuable insight for related stakeholders and policymakers to be considered for the continuity of conservation efforts.

Table 1. Comparative Analysis of MPAs and OECMs

No	Aspects of Comparative Analysis	MPAs	OECMs
1	Governance Structures		
	Government Involment	Typically established and regulated by government authorities to safeguard marine ecosystems. Rules are created for usage and conservation strategies	Governments, but also with more depend of initiative and contribution from broader array of stakeholders, such a NGO, local communities, business, and or practitioners
	Community Participation	Often engaged in the management of MPAs, especially in co-management systems that incorporate local knowledge and practices.	Grant a greater control for specific cultural and ecological needs
	International Support	Assist and support from global organizations by providing guidelines, funding, capacity building initiatives to reach for effectiveness and international standards through collaborations	Assist and support from global organizations, but also emphasize fostering collaboration and management among various stakeholders
2	Resource Management		
	Fisheries Regulations	Strict fisheries regulations, through zonation, to protect ecosystems, especially at-risk species and habitats	Adapt for more flexible fisheries regulations in order to facilitate local practices

Tourism Regulations	Strict tourism regulations, through zonation, to prevent negative impact from tourism activities, and support sustainable tourism best practices	Influenced by community preferences, to accommodate local customs and benefits, especially conservation goals.
Restoration Initiatives	Frequently restoration initiatives and projects to restore coral reefs and replant mangroves	Integrated to or along with land-use planning and community practices
3 Monitoring and Enforcement		
Compliance Strategies	Enforcement centralized to government agencies, with patrols, surveillance, and sanctions or punishment for any violation	Enforcement might be relying on local communities and any of support organizations.
Evaluation Process	Regular monitoring and evaluation to ensure compliance.	More adaptive monitoring and evaluation, emphasize community initiative to identify and evaluate their own area
4 Conservation Outcomes		
Biodiversity Indicators	Focus on specific indicators such a species diversity, population sizes and habitat quality	Broader range of indicators includes ecosystem services, local wisdom, and human well-being aspects
Species Protection	Safeguard a wide variety of marine species	Maintaining ecosystem processes and services that support biodiversity
Ecosystem Resilience	Limited by fixed boundaries and management approaches	Flexible management approaches due to adapt with climate change issue
External Pressure	Mitigate external pressures, like overfishing and pollution	Address external pressures, through local communities' engagement and in collaboration with related stakeholders

Source: manage data, 2024

Key Findings and Lessons Learned

First, Effectiveness in achieving conservation goals. Because of its specific targeted conservation, MPAs are often effective in achieving specific conservation goals, particularly in protecting biodiversity and restoring habitats. MPAs structured regulations also help limit any harmful activities such as overfishing and pollution. Many studies have shown that MPAs lead to increases in fish populations, biodiversity, and overall ecosystem health within their boundaries (Rice et al., 2012).

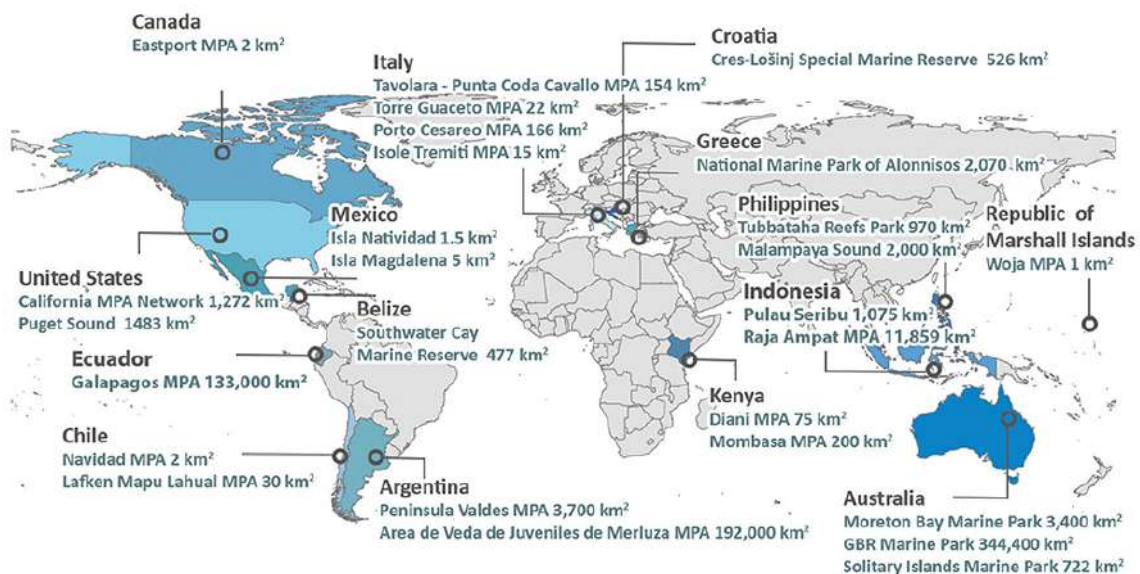


Figure 2. Maps of 27 MPAs Case Studies across the world

Source: (Giakoumi et al., 2018)

This success can be contingent because of enforcement and compliance. On the other hand, OECMs conservation goals can be effective too by integrating ecological, social,

and economic factors, such as community livelihoods (Ban et al., 2023). OECMs offers more flexibility and adaptability in management strategies that can respond to community needs and environmental conditions, then leads to more sustainable outcomes from those conditions.

Second, Role of community involvement and participation. OECMs incorporate traditional ecological knowledge into strategies and this can be seen as more improvement to pursue conservation outcomes. Local community involvement in conservation management not just seen as “an added or extra” in fixed yet unpublished decision. Local communities possess valuable insights into ecosystem dynamics and sustainable practices.

Third, Integrated approaches, adaptive management and holistic policies. Both MPAs and OECMs suggest that a combination of top-down and bottom-up management strategies can enhance conservation effectiveness. This adaptive management practices allow for ongoing monitoring-evaluation and adjustment of strategies based on latest results. Therefore, an effective conservation policy should encompass a variety of approaches and recognizing various models of management conservation (Ungusari, 2015). By deep understanding, followed by integrating the strengths of MPAs and OECMs, policymakers can develop more comprehensive strategies that address the multifaceted challenges of marine conservation.

Fourth, Ecotourism's role in Conservation Management through MPAs and OECMs. Both MPAs and OECMs possess significant ecotourism potential, that can generate added value, especially in terms of revenue, for local communities and conservation efforts. Ecotourism also can be used a tool to facilitate collaboration among local stakeholders, business, and government agencies, for better management practices. Especially in OECMs, ecotourism can bring more balance between conservation and local communities' development by providing economic opportunities, improving stronger conservation commitment that raised through the empowering of local communities.



Figure 3. Photo with Participants of the OECM Definition and Criteria Quotation Test Activity on 5-8 August 2024 in Rangko Hamlet, Tanjung Bolong Village, West Manggarai Regency.

Source: Author's Personal Documentation, 2024

This OECMs benefits, can be implemented to coastal communities that lived within and beyond Komodo National Park and or Flores Island. Issues of recognize local participation, with its scale and scope, tends to identified as “critical success factors” for conservation and sustainability development goals. Even ecotourism alongside with MPAs management models, especially in Komodo National Park, failed to meet this series of issues, such a capitalizing on local participation; recognizing local community as a stakeholder, and empowering local people around the area (Lasso & Dahles, 2023; Sianipar et al., 2024). Therefore, OECMs might be play it added values, as well as alternative recommendation, to enhance these sustainable goals.

CONCLUSION

The effectiveness models of both MPAs and OECMs, especially in achieving conservation goals, varies based on their structure, community involvement, and adaptability (Rusandi et al., 2020). For OECMs, community participation and traditional knowledge play crucial roles in the success, while MPAs provide targeted protection for biodiversity. By learning from the experiences of both models, conservation policies and any related policymakers can be enhanced to better address the complexities of marine ecosystems and promote sustainable resource management.

Furthermore, ecotourism can significantly contribute to conservation outcomes in both MPAs and OECMs. Ecotourism can support the long-term success of conservation initiatives by recognizing the value of natural assets, fostering good governance, and balancing conservation and development. For added, to maximize ecotourism's benefits, it is essential to prioritize sustainability, build local capacity, and provide policy support for sustainable tourism development.

Successful ecotourism in MPAs and OECMs must be managed sustainably, taking into account the carrying capacity of the area and environmental impacts. The establishment of conservation zones, limiting the number of visitors, and implementing environmentally friendly practices (such as waste management and water conservation) are important parts of this strategy. If managed correctly, ecotourism can help ensure that ecosystems remain healthy and capable of supporting biodiversity into the future.

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