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A New Approach to Analyzing the Participatory Dimension of Protected Area Management Plans in Türkiye

Türkiye'de Korunan Alan Yönetim Planlarının Katılımcı Boyutunu Analiz Etmek İçin Yeni Bir Yaklaşım

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Abstract / Öz

The EU Habitat Directives and the Convention on Biological Diversity define stakeholder participation as an essential component in the preparation of protected area management plans and emphasize its importance in achieving biodiversity conservation goals. However, the legal framework in Türkiye remains insufficient in terms of identifying relevant stakeholders, clarifying participation methods, and defining the potential benefits, opportunities, and risks associated with stakeholder involvement. These uncertainties hinder the effective implementation of participatory approaches in protected area management and negatively impact the success of management plans. The aim of this study is to develop a new approach for analyzing the participatory dimension of protected area management in Türkiye by quantitatively measuring the effectiveness of management plans. In this context, the Saros Bay Special Environmental Protection Area (SEPA) was selected as a pilot case. The management type and key parameters of the area's management plan were identified, and its effectiveness was evaluated using a 3-point Likert scale based on expert questionnaires. The level of stakeholder participation in the planning process was analyzed using stakeholder information forms. According to the findings, the average effectiveness score of the management plan was calculated as 43.87, placing it in the "high" effectiveness category. These results highlight the need to strengthen protected area management plans in Türkiye through more effective participatory approaches and emphasize the importance of improving the relevant legal framework.

AB Habitat Direktifleri ve Biyolojik Çeşitlilik Sözleşmesi, korunan alan yönetim planlarının hazırlanmasında paydaş katılımını zorunlu ve ayrılmaz bir bileşen olarak tanımlamakta; biyolojik çeşitliliğin korunması ve sürdürülebilir kullanımına yönelik hedeflere ulaşmada katılımcı süreçlerin temel bir araç olduğunu vurgulamaktadır. Paydaşların bilgi, deneyim ve beklentilerinin yönetime yansıtılması, yalnızca planların sosyal meşruiyetini artırmakla kalmayıp, aynı zamanda ekolojik sürdürülebilirliği de desteklemektedir. Ancak Türkiye'deki yasal düzenlemeler, katılım süreçlerinde paydaşların belirlenmesi, katılım yöntemlerinin netleştirilmesi ve katılımın yaratabileceği potansiyel fayda, fırsat ve risklerin tanımlanması açısından yetersizdir. Bu belirsizlikler, korunan alan yönetiminde katılımcı yaklaşımın etkin bir şekilde uygulanmasını sınırlandırmakta ve yönetim planlarının başarısını olumsuz yönde etkilemektedir. Bu çalışmanın amacı, Türkiye'deki korunan alanların katılımcı boyutunu matematiksel olarak tanımlayarak analiz eden yeni bir yaklaşım geliştirmek ve yönetim planlarının etkinliğini ölçmektir. Bu doğrultuda, Saros Körfezi Özel Çevre Koruma Bölgesi (ÖÇKB) pilot alan seçilmiştir. Alanın yönetim planının yönetişim tipi ve belirleyici parametreleri tespit edilmiş, planın etkinlik düzeyi uzman anketleri ile 3'lü Likert ölçeği kullanılarak değerlendirilmiştir. Paydaşların yönetim planına katılım düzeyi ise paydaş bilgi formları aracılığıyla analiz edilmiştir. Elde edilen bulgulara göre, yönetim planının ortalama etkinlik değeri 43,87 olarak hesaplanmış ve "yüksek" etkinlik sınıfında değerlendirilmiştir. Bu sonuçlar, Türkiye'de korunan alan yönetim planlarının daha etkin bir katılımcı yaklaşımla güçlendirilmesi gerektiğini ve yasal düzenlemelerde bu yönde iyileştirmeler yapılmasının önemini ortaya koymaktadır.

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1. Introduction

Since the Industrial Revolution, anthropogenic impacts- including technological development, population growth,

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urbanization, destruction of natural resources, improper land use, deforestation, and drainage of wetlands- have significantly disrupted the natural balance (Ayiti & Babalola, 2022; Hanlon, 2016; Lee and Lim, 2020; Yu et al., 2022; Zhang et al., 2014). These disruptions have led to various environmental problems such as erosion, landslides, habitat loss, drought, floods, tsunamis, hurricanes, decline or extinction of numerous plant and animal species. Since the 1950s, increasing awareness of nature conservation (Düzgüneş & Demirel, 2018; Yalınkılıç & Yenilmez Arpa, 2005) has prompted initiatives by local communities, non-governmental organizations (NGOs), and private sector to establish mechanisms aimed at minimizing these negative impacts. One such mechanism is the creation of protected area systems (Düzgüneş & Demirel, 2014; Düzgüneş & Demirel, 2018; Karabıçak Günaydın, 2022; Yıldırım & Yurdakul Erol, 2012).

Protected areas are geographically defined zones that are managed through legal and other effective means to ensure the long-term preservation of their natural and cultural values (IUCN, 2020; Juffe-Bignoli et al., 2017; T.C. Resmi Gazete, 1983a). These areas contribute to the sustainability of ecosystems by providing a range of ecosystem services, including biodiversity conservation, climate regulation, erosion and flood control, clean water supply, energy production, carbon storage, and opportunities for recreation and tourism (Bastian et al., 2012; Brander et al., 2020; Düzgüneş & Demirel, 2018; Sanderson et al., 2020; Watson et al., 2014).

Over the past five decades, the global coverage of protected areas has expanded significantly, reaching 25.4% by 2023. According to 2022 data, terrestrial protected areas (including inland waters) account for 15.79% of the Earth's surface, while marine protected areas cover 8.16% (Protected Planet, 2020). In Türkiye, the total protected area coverage stands at 12.07% (T. C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, 2022; T.C. Tarım ve Orman Bakanlığı, 2020; T.C. Tarım ve Orman Bakanlığı, 2022).

Among the various types of protected areas in Türkiye, Special Environmental Protection Areas (SEPAs) play a critical role in conserving biodiversity and are important destinations for both domestic and international visitors due to their rich natural assets. According to Environmental Law No. 2872 (T.C. Resmi Gazete, 1983b) SEPA are defined as " *ecologically significant areas of national and international importance, allocated to regulate and protect land and water ecosystems, biological diversity, natural resources, and associated cultural heritage against environmental degradation*." As of 2023, there are 19 designated SEPAs in Türkiye, comprising 2.27% of the national territory. However, the uncontrolled influx of visitors places increasing pressure on these areas, threatening their ecological integrity. Therefore, there is a pressing need for participant, effective, holistic, and adaptive management plans that balance conservation and sustainable use. In this context, it is essential to ensure that all stakeholders-who benefit directly or indirectly from these areas- are involved in the planning process in accordance with their levels of interest and influence (T.C. Tarım ve Orman Bakanlığı, 2006; Toksabay Esen, 2012).

Although stakeholder participation in the management plans of protected areas in Türkiye has a legal basis, the framework regarding how participation processes should be conducted, who qualifies as a stakeholder, and which methods and tools should be used remains incomplete or ambiguous. In the literature, such uncertainty is frequently cited as having a direct negative impact on the applicability of plans, the level of local ownership, and the overall capacity for sustainable management (Demirayak, 2006; Düzgüneş & Demirel, 2018; Güneş, 2011). However, the existing body of research tends to address these ambiguities in qualitative terms, and quantitative models that examine the effects of such uncertainties on the effectiveness of management plans are extremely limited. The approach developed in this study aims to fill this gap by quantitatively assessing the extent to which legal and administrative uncertainties are reflected in the components of the management plan, as well as by measuring the relationship between stakeholder participation and management plan effectiveness using empirical data.

Management plans are a strategic document that define the management approach, objectives, activities, budget, and financial framework protected area over a specific time period (Güneş, 2011; Thomas & Middleton, 2003). They outline the goals, strategies, and actions necessary to conserve biodiversity, ecosystems, and cultural heritage, while ensuring effective implementation of conservation measures in line with the needs of local communities and stakeholders (Day et al., 2019; Остром & Nagendra, 2006; Roux et al., 2021). Research indicates that management plans are essential for assessing the impacts of human activities on biodiversity, balancing conservation priorities with sustainable resource use, and minimizing socio-cultural and economic pressures on local populations (Hardman et al., 2022; Scott et al., 2002).

A participatory approach emphasizes the active involvement of local communities and other relevant stakeholders (e.g., domestic, and international tourists, recreationists, NGOs, universities, project consultants, research institutes, and public authorities) in the planning, management, and long-term sustainability of protected areas (T.C. Tarım ve Orman Bakanlığı, 2007). Such approaches assist area managers in identifying resource values and related threats, as well as in formulating strategic actions accordingly (Ervin et al., 2010).

Participation promotes a sense of ownership, empowerment, and shared responsibility among stakeholders, contributing to more inclusive and transparent conservation practices (Conrad & Hilchey, 2010; Quintero-Uribe et al., 2022). Moreover, it helps prevent conflicts, fosters social equity, and enhances the overall effectiveness of conservation strategies (Dudley 2008; Fotopoulou et al., 2021). Research demonstrates that participatory approaches in protected areas can lead to improved biodiversity outcomes, stronger community support, and more effective environmental monitoring and adaptive management (Haller et al., 2008; Jacobs et al., 2019; Wang et al., 2006).

The level of stakeholder participation increases progressively from passive participation, which marks the lowest level of involvement, to spontaneous initiative, the highest level of participatory engagement.

In Türkiye, the majority of protected areas are managed through a centralized governance model, often fails to fully achieve conservation objectives (Güneş, 2011). This top-down approach, coupled with institutional conflicts, undefined responsibilities, fragmented authority, and limited financial resources, has led to significant weaknesses in protected area management (Demirayak, 2006). Within the framework of the European Union's Habitat Directives and the Convention on Biological Diversity, early and continuous stakeholder participation-beginning from the planning stage-is emphasized as a fundamental principle (T.C. Çevre ve Orman Bakanlığı, 2006). As a result, a shift is gradually taking place from centralized models toward more participatory and innovative governance structures.

The IUCN identifies four main types of protected area management, each requiring distinct governance approaches and levels of stakeholder participation (T.C. Çevre ve Orman Bakanlığı, 2006). These are "Type A (Centralized Government Management)", "Type B (Co-management)", "Type C (Private Management by Individuals and Organizations)" and "Type D (Community-based Management by local people and communities)" (Table 1). The level of stakeholder engagement and collaborative management increases progressively from Type A to Type D.

Tablo 1. *Management types and components*

Management Types / Management Plan Components	Type A	Type B		Type C	Type D
		B1- Collaborative Management	B2- Shared Management		
Managed by central protected area authority	x	x	x	-	-
Managed by the state	x	x	x	-	-
Existence of a hierarchical structure	x	x	x	-	-
Ruled by a single authority	x	x	x	-	-
Ruled by multiple authorities	-	-	-	x	x
Advisory board within management structure	-	x	x	-	-
Multi-stakeholder board within management structure	-	-	x	-	-
Protected area land is leased or purchased	-	-	-	x	x
Managed by private individuals	-	-	-	x	-
Managed by local people and communities	-	-	-	-	x

Stakeholder participation in effective and feasible protected area management is a reciprocal process that benefits both stakeholders and authorized institutions, and it can occur at seven different levels, as outlined in Table 2.

Tablo 2. *Levels of stakeholder participation in protected area management*

		LEVEL OF STAKEHOLDER PARTICIPATION						
		Passive Participation	**Stakeholder Engagement through Information Provision**	**Stakeholder Engagement through Opinion-sharing**	**In-Kind Participation**	**Functional Participation**	**Interactive Participation**	**Self-initiated Participation**
AUTHORITY AND RESPONSIBILITY	**Stakeholder**	It presents problems, solutions, alternatives, and possibilities in a balanced and objective manner, helping stakeholders to better understand the issues. Stakeholders tend to comply with decisions made by the authorities.	Provides expert opinions on issues - such as analysis, alternatives, or decisions- upon the request of the competent authority.	Participates stakeholders in joint decision-making processes, including the development of alternatives and identification of preferred solutions.	Contributes labor, materials, or financial resources to the process in exchange for institutional support or benefits provided by the component authority	Does not participate in the decision-making process related to protected area planning, but holds officially recognized authority in the implementation of decisions.	Stakeholders are actively involved throughout the entire process, from information gathering to final decision-making.	Stakeholders participate voluntarily and independently, without any formal invitation or external prompting.
	Authorized Institution	Stakeholders are informed about the decisions they are expected to comply with, without any opportunity to influence the decision-making process.	The competent authority collects feedback from local stakeholders on selected issues of its choosing, without guaranteeing influence over final decisions.	Local community representatives are invited to participate in planning meetings and serve on advisory boards, contributing input without holding final decision-making authority.	Provides financial assistance and logistical resources to stakeholders to support their involvement in the process.	Involves the public in jointly sharing responsibility for decisions made during the planning and management process.	Shares decision-making authority, implementation responsibility, and management power directly with stakeholders.	The competent authority neither authorizes nor supports the initiative; participation emerges independently through stakeholders self-mobilization.
TECHNIQUES USED IN THE PARTICIPATION PROCESS		Information is disseminated to stakeholders through one-way communication tools such as bulletin board announcement, printed materials, telephone calls, teleconferencing, emails, and television broadcasts.	Engages stakeholders through bilateral, interviews, group discussions, focus group meetings, surveys, and research studies to collect diverse perspectives and informed feedback.	Stakeholder engagement is facilitated through structured platforms such as committees, councils, conferences, workshop, and brainstorming sessions, promoting collaborative dialogue and shared planning processes.	Utilizes participatory appraisal tools such as resource flow mapping, seasonal calendars, opportunity matrices, on-site observations and cross-sectional analyses to gather local knowledge and co-produce planning insights.	Participation is driven by independent actors such as NGOs, unions, and advocacy groups through mechanisms like voting, lobbying, demonstrations, and trend analysis, often operating outside formal institutional structures.	Participation tools such as mapping, spatial modeling, Venn diagrams.	Participation tools such as seasonal calendars, wealth ranking exercises, and resource flow charts.
		The area is fully managed by the authorized institution.	**Increase in the level of stakeholder control** →					The area is entirely managed by the public.

Source: Brodie et al., 2011; Parks and Wildlife Commission, 2002

A successful management plan should incorporate 19 essential components to ensure its effectiveness, applicability, and comprehensiveness. These are shown in Table 3.

Tablo 3. *Components of a management plan*

Component	Description
Dedication	Management staff must understand and commit to the process and its benefits.
Prepared by a Multidisciplinary Team	A diverse team ensures effective protection, planning, and implementation
Participation	Mechanisms should allow idea exchange to address threats and opportunities.
Accessibility	The plan must be accessible to all stakeholders and relevant users.
Realism	Reflects real threats, opportunities, and practical possibilities.
Adaptability	Must be flexible and responsive to changing conditions.
Systematic Approach	Decisions should be data-based and analytically grounded.
Sustainability	Should integrate environmental, social, and economic sustainability principles.
Stakeholder Interest Identification	All stakeholder interests must be considered and documented.
Adequate Physical Resources	All involved must have sufficient physical and technical capacity.
Formalization	The plan must be officially agreed and accepted by stakeholders.
Understandability	Threats and management issues must be clearly defined and understood.
Awareness Program	Should include awareness efforts for stakeholders and visitors.
Quality Over Quantity	Focus should be on content quality, not document length.
Preparation by Implementers	Should be created by those responsible for execution and implementation.
Clear Goals and Objectives	Must explicitly state management goals and strategies to reach them.
Innovation	Should consider new ideas and different stakeholder views.
Appropriate Volume	Must be concise yet comprehensive.
Process Orientation	Should align with strategic and process-based objectives.
Monitoring & Evaluation Program	Must include a clear M&E framework for ecological, social, and cultural indicators.

Source: T.C. Çevre ve Orman Bakanlığı, 2006; Thomas et al., 2003.

This study aims to develop a new approach to quantitatively assess and analyze the participatory dimension of protected area management in Türkiye, with a particular focus on evaluating the effectiveness of management plans. In this context, Saros Bay SEPA was selected as a pilot area. The type of management applied in the area was first identified based on the IUCN classification. Subsequently the effectiveness and inclusiveness of the participatory processes were assessed through expert evaluations and stakeholder analysis. Then, key components required for an effective management plan were identified based on a comprehensive literature review. These components were then prioritized and weighted by a group of 15 experts using a structured questionnaire, where each component was ranked on a scale from 1-20 in terms of perceived importance. The expert group consisted of technical staff and public officials directly involved in the preparation of the Saros Bay SEPA Management Plan, academics specializing in protected areas and participatory planning, as well as NGO representatives and consultants experienced in evaluating management plans. In the next phase, the effectiveness of the management plan was quantitatively assessed. Each component was rated using a 3-point Likert scale (1-3) by the same expert group, based on their evaluation of how effectively each component had been addressed in the existing plan. Finally, a “Stakeholder Information Form” was developed to assess the participatory dimension of the management plan. This analysis focused on identifying stakeholders, evaluating their level of participation, and reviewing the specific methods and techniques used to engage them.

2. Method and Data

Saros Bay SEPA constitutes the study area. It is located within the borders of Gelibolu district of Çanakkale (Türkiye) province. Geographically, it forms a triangular-shaped bay with an indentation of approximately 60 km along the northern part of the Gallipoli Peninsula and southern cost of the Thracian, measuring roughly 75 km in length and 35 km in wide (Figure 1).

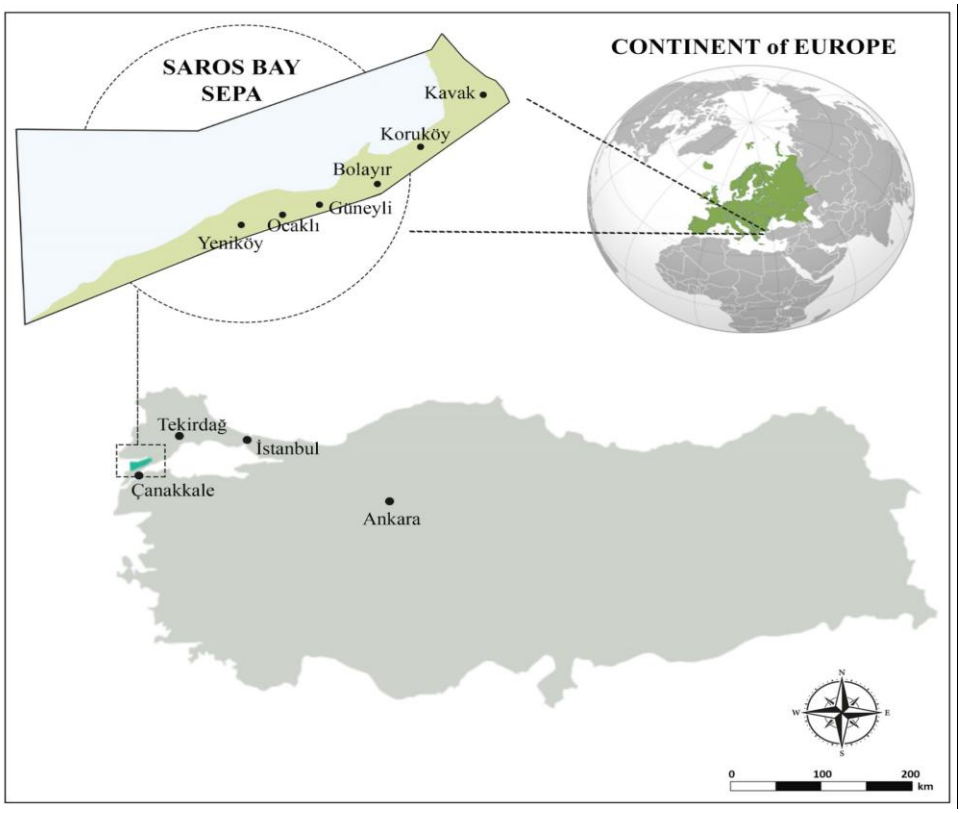

Figure 1. *Location of the Saros Bay SEPA*

As of 2010, the SEPA encompasses seven settlements; the town of Evreşe and Kavakköy, and the villages of Ocaklı, Güneyli, Bolayır, Koruköy, Yeniköy. While the areas include two islands, the total area (including islands) covers 191.45 km^2, and the marine area (excluding islands) spans 538.76 km^2, resulting in a combined total area of 730.21 km^2.

Due to the presence of multiple settlements, the SEPA does not fall under a single administrative structure. Responsibilities are shared between local municipalities, village administrations, and the General Directorate for the Protection of Natural Assets, which operates under the Ministry of Environment, Urbanization and Climate Change.

Marine areas account for 74% of the total area. In terrestrial sections, agricultural land is the most dominant land use type, covering 13.8%. Other land use categories include maquis vegetation, frigana, forest areas, sparsely vegetated land, pastures, salt marshes, settlements, and military zones (Table 4) (T.C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, 2018).

Tablo 4. *Saros Bay SEPA land use types and ratios*

Land Use	Area (ha)	Rate (%)	Land Use	Area (ha)	Rate (%)
Military Zones	117	0,2	Forest Areas	2026	2,8
Marine Areas	53994	74,0	Agriculture Land	10085	13,8
Frigana	3998	5,5	Salt Marshes	1000	1,4
Maquis Vegetation	408	0,6	Settlements	498	0,7
Pastures	359	0,5	Sparsely Vegetated Land	482	0,7
Total					**72967 ha**

To the east of the area lies the Kavak Delta Wetland, an ecologically significant habitat that supports various bird and reptile species. Human settlements are sparse, with the highest concentration of secondary residences located along the coastal zones of Bolayır and Güneyli villages. The region also hosts two military facilities; Kömür Bay, a nationally important scuba diving site, and military installations including the 16th Ammunition Company Command and 18th Mechanized Infantry Brigade under the 2nd Corps Command (Figure 2).

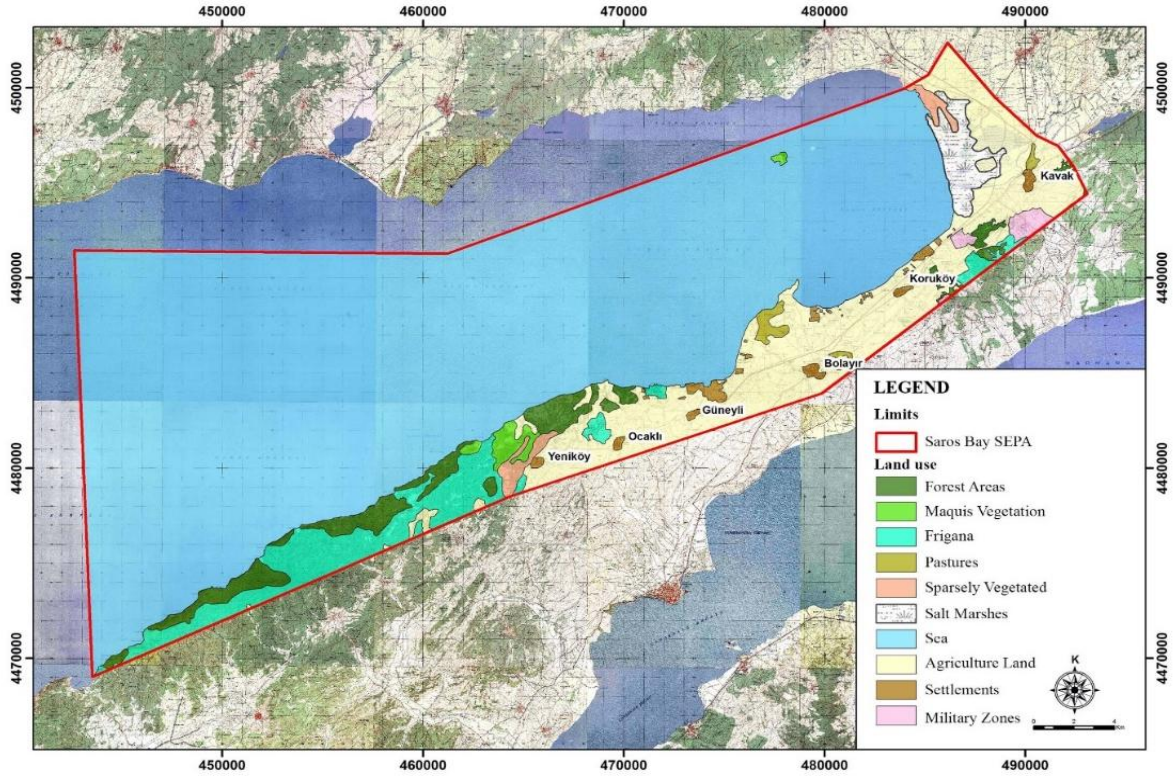

Figure 2. *Saros Bay SEPA land use map*
Source: TVKGM, 2018

Although the entire Saros Bay SEPA is designated as a natural protected area, certain sections within the region are further classified based on ecological sensitivity into Categories A, B and C (Figure 3). Recreational activities permitted in the area include swimming, diving, water skiing, surfing, horseback riding, angling, land hunting, and cycling.

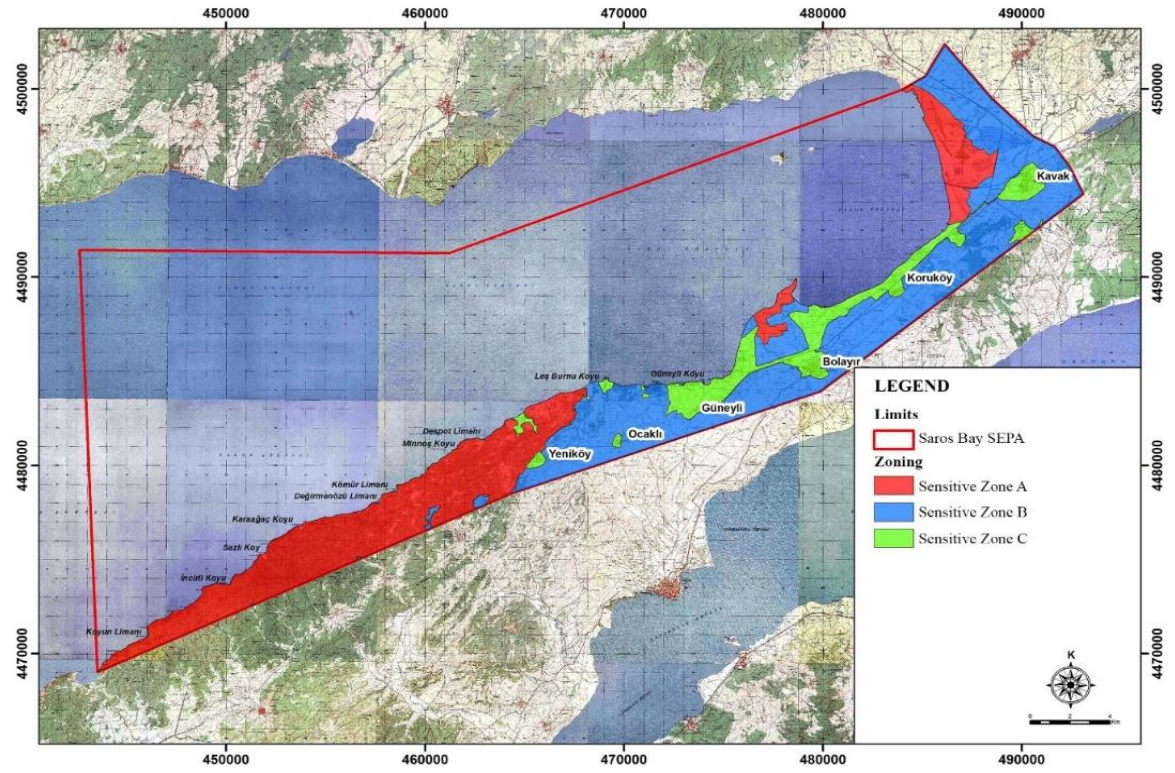

Figure 3. *Saros Bay SEPA zoning map (TVKGM, 2018)*
Source: TVKGM, 2018

The analysis of the Saros Bay SEPA Management Plan in terms of its participatory approach is structured in two main stages.

2.1. Analysis of the Management Plan

Management parameters were identified through an extensive literature review of the management types proposed by the IUCN for protected areas. Based on this framework, the parameters defining the Saros Bay SEPA Management Plan were determined, and a matrix table was developed to map these parameters to IUCN management types.

Subsequently, a set of components to assess the effectiveness of the management plan was compiled from key sources in the literature (African Wildlife Foundation, 2006; Güneş, 2011; T.C. Çevre ve Orman Bakanlığı, 2006; Thomas et al., 2003).

These components were then evaluated by 15 experts familiar with the Saros Bay SEPA Management Plan. Experts were asked to rank the components by their level of importance, and score their effectiveness using a 3-point Likert scale, where;

- 1 = low effectiveness,
- 2 = moderate effectiveness, and
- 3 = high effectiveness.

The purpose of applying the Likert method was to calculate both the average effectiveness score and the corresponding effectiveness category for each component, as well as for the management plan as a whole.

Effectiveness scores were calculated by multiplying the number of responses at each scale point (1–3) by the respective scale value, summing the results, and weighting them accordingly. The average effectiveness score for each component was obtained by dividing its total weighted score by the number of participants. Similarly, the overall effectiveness score of the management plan was calculated by summing the weighted scores of all components and dividing by the total number of participants.

To classify the effectiveness, five levels were defined, weak, low, moderate, high, and very high. The thresholds for each class were determined by dividing the maximum possible score of each component by the number of participants and then by five (the number of classes). The same method was applied to calculate the thresholds for the overall effectiveness classification of the management plan.

2.2. Analyzing The Participatory Dimension of the Management Plan

In addition to the quantitative methods developed to assess the effectiveness of the management plan, this study also incorporates qualitative analysis techniques such as content analysis and expert-based interpretive evaluation. In particular, qualitative methods such as literature review and document analysis were used to examine the management plans and participatory processes in depth. Expert opinions were not only used for scoring purposes, but also to provide interpretive insights into the quality of the plan's content, implementation capacity, and the nature of stakeholder engagement. Thus, by integrating both quantitative and qualitative approaches, the study aims to provide a more comprehensive and nuanced analysis.

In this stage of the study, the participatory dimension of the management plan was evaluated through the development of a "Stakeholder Information Form". The process began with a comprehensive stakeholder analysis, which involved identifying all relevant parties including both organized and unorganized actors the management plan.

Following the identification of stakeholders, the degree of participation in the management process was assessed. Since there is no universally accepted standard regarding in the extent, from, or methodology of stakeholder participation, flexible evaluation was deemed necessary. This flexibility accounts for the fact that different participatory approaches may yield varying degrees of success depending on the socio-economic, cultural, and institutional context of the region. Accordingly, the level of participation for each stakeholder group was determined based on participation types defined in the literature (Brodie et al., 2011; Parks and Wildlife Commission, 2002). Finally, the specific methods and techniques employed to engage each stakeholder group within the management planning process were analyzed to assess the inclusiveness and effectiveness of the participatory approach adopted in the plan.

3. Findings

3.1. Analysis of the Management Plan

3.1.1. Determination of Management Type

An examination of Saros Bay SEPA Management Plan reveals that the area is managed by the General Directorate for the Protection of Natural Assets operating under the Ministry of Environment, Urbanization and Climate Change, and functions as a centrally governed protected area. The management structure involves multiple public institutions, each with a degree of authority and responsibility in the decision-making process (Table 5).

Tablo 5. *Institutions and organizations responsible for the management structure*

Ministry of Environment and Urbanization General Directorate for the Protection of Natural Assets	Ministry of Transport, Maritime Affairs and Communications, Çanakkale Port Authority
Ministry of Environment and Urbanization General Directorate of Environmental Management, Iller Bank Infrastructure Implementation Department	Ministry of Forestry and Water Affairs General Directorate of Water Management
Ministry of Food, Agriculture and Livestock General Directorate of Fisheries and Aquaculture	Ministry of Transport, Maritime Affairs and Communications, Bursa Regional Directorate
Çanakkale Provincial Directorate of Environment and Urbanization	ARDSI Çanakkale Provincial Coordination Office
Çanakkale Regional Directorate of Forestry	Gallipoli District Special Administration
State Hydraulic Works 252nd Branch Directorate	Çanakkale Provincial Directorate of Youth Services and Sports
Çanakkale Provincial Directorate of Culture and Tourism	South Marmara Development Agency
Çanakkale Provincial Directorate of Food, Agriculture and Livestock	Ministry of Forestry and Water Affairs, 2nd Regional Directorate
Çanakkale Provincial Directorate of National Education	KOSGEB Çanakkale Service Center Directorate
Çanakkale Special Provincial Administration	Turkish Underwater Sports Federation

An advisory board also exists within the management structure, indicating a degree of stakeholder consultation. In line with the management types defined by the IUCN, the Saros Bay SEPA is therefore classified as Type B1: Collaborative Management, reflecting a cooperative governance model involving both central authorities and other stakeholders (Table 6).

Tablo 6. *Parameters indicating the management type of Saros Bay SEPA.*

Management Plan Components	Type A	Type B1	Type B2	Type C	Type D
Managed by central protected area authority	x	x	x	-	-
Managed by the state	x	x	x	-	-
Existence of a hierarchical structure	-	-	-	-	-
Ruled by a single authority	-	-		-	-
Ruled by multiple authorities	-	x	x	-	-
Advisory board within management structure	-	x	-	-	-
Multi-stakeholder board within management structure	-	-	-	-	-
Protected area land is leased or purchased	-	-	-	-	-
Managed by private individuals	-	-	-	-	-
Managed by local people and communities	-	-	-	-	-

3.1.2. Scoring of effective Management Components and Categorization of Effectiveness Values

The essential components of an effective management plan were prioritized by a panel of 15 experts, who ranked each component on a scale from 1 to 20 based on its perceived importance. Following this ranking, the components were weighted accordingly. The calculated weighting scores for each component are presented in Table 7.

Tablo 7. *Weighted score of management plan components*

Management Plan Components	Weight Score	Management Plan Components	Weight Score
Clear Goals and objectives	217	Dedication	166
Sustainability	214	Formalization	161
Realism	205	Quality Over Quantity	160
Participation	197	Adaptability	127
Systematic approach	188	Understandability	126
Preparation by implementers	186	Monitoring & Evaluation Program	114
Prepared by a multidisciplinary team	183	Adequate Physical Resources	108
Innovation	172	Stakeholder Interest Identification	92
Process orientation	169	Accessibility	91
Appropriate volume	167	Awareness Program	87

Each component was subsequently scored and weighted using a 3-point Likert scale. The average effectiveness score for each component was calculated by dividing the total weighted score by the number of respondents. Both individual

components and the overall management plan were classified into five effectiveness categories: weak, low, medium, high, and very high. The overall average effectiveness score of the Saros Bay SEPA Management Plan was calculated as 43.87, corresponding to the "High" effectiveness category (Table 8).

Tablo 8. *Average effectiveness scores and categorization of management plan components*

Management Plan Components	Weighted Score	Measurement			Average Effectiveness Score	Effectiveness Category
		1	**2**	**3**		
Dedication	30	6	3	6	2,00	High
Appropriate Volume	26	5	9	1	1,73	Middle
Participation	**37**	2	4	9	2,47	Very high
Accessibility	26	4	11	-	1,73	Middle
Realism	**37**	1	6	8	2,47	Very high
Adaptability	32	3	7	5	2,13	High
Systematic approach	31	3	8	4	2,07	High
Sustainability	**41**	1	2	12	2,73	Very high
Formalization	28	6	5	4	1,87	High
Innovation	30	2	11	2	2,00	High
Process Orientation	**38**	-	7	8	2,53	Very high
Quality Over Quantity	32	3	7	5	2,13	High
Understandability	32	3	7	5	2,13	High
Preparation by Implementers	33	2	8	5	2,20	High
Prepared by a Multidisciplinary Team	34	2	7	6	2,27	High
Clear Goals and Objectives	**38**	2	3	10	2,53	Very high
Stakeholder Interest Identification	29	6	4	5	1,93	High
Awareness Program	34	5	7	3	2,27	High
Adequate Physical Resources	34	2	7	6	2,27	High
Monitoring &Evaluation Program	36	1	7	7	2,40	High
OVERALL AVERAGE EFFECTIVENESS SCORE				**43,87**		
GENERAL EFFECTIVENESS CATEGORY				**HIGH**		

The average effectiveness score of the management plan components and the general average effectiveness score of Saros Bay SEPA are shown in Figure 4.

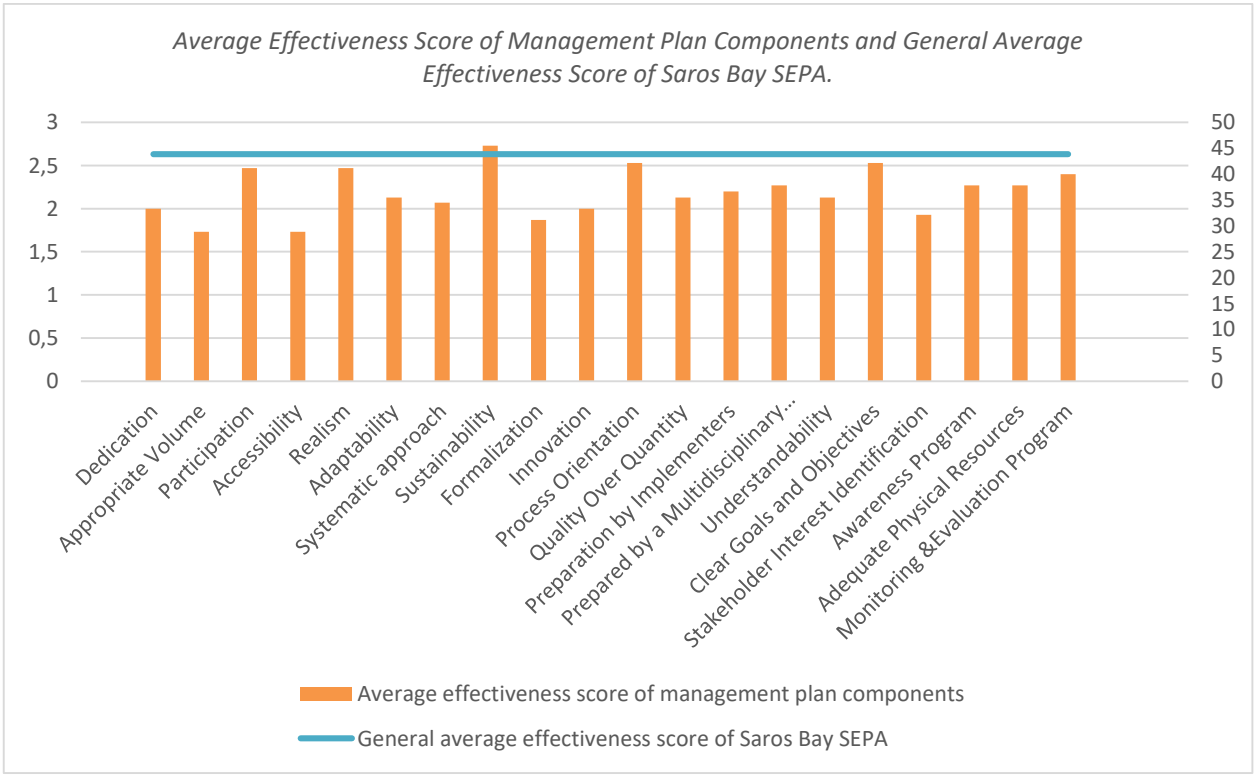

Figure 4. *Average effectiveness score of management plan components and general average effectiveness score of Saros Bay SEPA*

3.2. Analyzing the Participatory Dimension of the Management Plan

3.2.1. Stakeholder Analysis

During the development of the Saros Bay SEPA Management Plan, stakeholders who were likely to be directly or indirectly affected by existing or potential problems in the area, as well as by decisions made within the scope of management, were identified and included in the planning process. In addition to identifying the stakeholders involved in the Saros Bay SEPA Management Plan, the stakeholder analysis also aimed to determine the level of influence and role of each stakeholder group in the decision-making process. This was evaluated by cross-referencing official records, types of engagement, and participatory techniques applied during the plan preparation. Based on this evaluation, each stakeholder's influence was interpreted in accordance with the participatory type presented in Table 9 and Table 10.

Tablo 9. *Stakeholders involved in the Saros Bay SEPA Management Plan*

PUBLIC INSTITUTIONS	
Ministry of Environment and Urbanization General Directorate for the Protection of Natural Assets	South Marmara Development Agency
Ministry of Environment and Urbanization General Directorate of Environmental Management	ARDSI Çanakkale Provincial Coordination Office
Iller Bank Infrastructure Implementation Department	Çanakkale Provincial Directorate of Food Agriculture and Livestock
Ministry of Food, Agriculture and Livestock General Directorate of Fisheries and Aquaculture	Ministry of Forestry and Water Affairs General Directorate of Water Management
Gallipoli District Special Administration	Ministry of Transport, Maritime Affairs and Communications
Ministry of Forestry and Water Affairs, 2nd Regional	Çanakkale Port Authority
Çanakkale Provincial Directorate of Environment and Urbanization	Çanakkale Provincial Directorate of Youth Services and Sports Directorate
Çanakkale Provincial Directorate of Culture and Tourism	Ministry of Transport, Maritime Affairs and Communications
Hydraulic Works 252nd Branch Directorate	Bursa Regional Directorate Turkish Underwater Sports Federation
Çanakkale Regional Directorate of Forestry State	Çanakkale Special Provincial Administration
Çanakkale Provincial Directorate of National Education	KOSGEB Çanakkale Service Center Directorate
GOVERNORATES	
Çanakkale Governorship	Gelibolu District Governorate
LOCAL GOVERNMENTS	
Çanakkale Municipality	Ocaklı Village Mukhtar's Office
Gallipoli Municipality	Yenikoy Village Mukhtar's Office
Evreşe Town Municipality	Korukoy Village Mukhtar's Office
Kavakkoy Town	Güneyli Village Mukhtar's Office
Bolayir Village Mukhtar's Office	
MILITARY INSTITUTIONS	
2nd Corps Command	Provincial Gendarmerie Command Environmental Protection Team
Coast Guard Çanakkale Group Command	Turkish Naval Forces Command
UNIVERSITIES	
Çanakkale Onsekiz Mart University/Department of Biology	
Çanakkale Onsekiz Mart University / Department of Fisheries Engineering	
PRIVATE SECTOR	
Turkish Electricity Distribution Co.	Altınoluk Planning
NGOs	
Güneyli Village Fisheries Production and Evaluation Cooperative	Yeniköy Village Agricultural Development Cooperative
Çanakkale Chamber of Agriculture	Evreşe Town Agricultural Development Cooperative
Gelibolu Chamber of Agriculture	Marine Clean Association
Güneyli Coast Beautification Association	Saros Diving Diving Club
Kavakköy Fisheries Cooperative	Canakkale Chamber of Commerce and Industry
Güneyli Village Production and Consumption Marketing Cooperative	

Tablo 10. *Stakeholder role and influence matrix*

Stakeholder Group	Role	Participation Type	Influence in Decision	Techniques Used
Public Institutions	Management authority	Functional	High	Workshops, focus groups
Governorates	Oversight	Expressing opinion	Moderate	Brainstorming, meetings
Military Institutions	Monitoring	Information provision	Low	Reports
Local Governments	Promotion	Passive	Low	Media, brochures
Universities	Scientific input	Information provision	Low	Field surveys
NGOs	Awareness	Passive	Very Low	Events, campaigns
Private Sector	Support	Passive	Very Low	Promotional activities

3.2.2. Determining the Type of Participation

Within the scope of the Saros Bay SEPA Management Plan, stakeholders demonstrated varying levels and types of participation throughout the planning process.

Public institutions and agencies responsible for implementing management activities in the area typically participated by providing information and, to a lesser extent, by expressing opinions. Governates and local governorments, tasked with enforcing the plan in line with their legal mandates, contributed primarily by expressing opinions during the consultation phases. Local governments, while responsible for promoting the region, showed passive participation, with limited engagement in decision-making.

Military institutions, as land users, took part in monitoring and controlling illegal activities, with their participation limited to providing information. Universities contributed scientific data on terrestrial, marine, and bird species inventories upon request from the competent authority. While these academic studies supported conservation efforts indirectly, universities' roles remained limited to informative participation, without direct influence in decision-making.

NGOs and the private sector contributed to raising awareness of the region's ecological value through promotional efforts on local and national platforms. However, since they were not involved from the early stages to the final decision-making phases, their participation was categorized as passive. However, all stakeholders involved in the Saros Bay SEPA process were included through different participatory techniques. The current stakeholder participation types within the Saros Bay SEPA Management Plan process is shown in Table 11.

Tablo 11. *Current participation with stakeholder groups*

Stakeholder Type	Participation Activity	Participation Technique	Participation Type
Public Institutions	SEPA management, illegal construction and water analysis inspection; maintaining tourism master plan; licensing of tourist attractions	Focus group interview, round table meeting	Functional Participation
Governorates	Establishing and operating the executive committee; evaluating implementation of the management plan quarterly	Brainstorming	Participation by Expressing an Opinion
Military Institutions	Monitoring and preventing illegal hunting; conservation and promotion of plant, bird species, and Posidonoia meadows	Information and training activities	Participation by Providing Information
Local Governments	Underwater Diving training, identifying ecotourism areas; promotion of regional values via websites, promotional materials	Brochures, posters, promotional films, semi-structured surveys	Passive Participation
Universities	Research on terrestrial/marine plant and bird species; bird observation tower construction	Mapping and modeling, research and studies	Participation by Providing Information
NGOs and Private Sector	Producing film and interactive map production; broadcasting on local and national media	Brochures, posters, promotional products, promotional film	Passive Participation

3.3. Framework Principles of Participatory Approach

Aim

The main aim is to develop strategies that enhance the impact of management through appropriate participatory methods and techniques, ensuring both effective ecological protection and the long-term sustainability of natural resource values within SEPAs.

Objective

- To identify the applicable management type and determine the stakeholders who have influence or decision-making authority in the management of SEPAs.
- To ensure the adaptability of the management plan to evolving conditions and unforeseen challenges through participatory mechanisms.
- To recognize and analyze stakeholders' interests and relationships to the area.
- To ensure the presence of awareness-raising programs both prior to and following participatory planning processes.
- To replace passive involvement with active engagement of all relevant stakeholders throughout the planning and implementation processes.
- To apply participation levels and engagement techniques tailored to the specific needs and capacities of different stakeholder groups.

Methodology

- Formation of an expert team comprising professionals from diverse disciplines in alignment with conservation objectives.
- Design and implementation of training programs supporting sub-activities related to the participatory process.
- Identification and provision of adequate physical resources to support stakeholder participation.
- Development of a flexible work schedule that aligns with evolving environmental and administrative conditions.
- Formulation of strategic measures to mitigate potential conflicts and differences among stakeholders.
- Assessment and facilitation of stakeholders' access to effective transportation means, enhancing participation opportunities.

Management Principles

- To identify stakeholder-specific problems through participatory processes and to develop strategic responses that offer viable solutions.
- To ensure coherence and consistency between decisions and their implementation in the field.
- To guarantee that all decisions and practices are transparent, understandable, and adaptable to changing conditions.

4. Conclusion and Discussion

In recent years, numerous initiatives have been undertaken to ensure the protection and sustainability of areas with special ecological and cultural value (Binboğa & Daşdemir, 2023; Bingöl & Arslan, 2021; Çelik & Çoruhlu, 2021; Dumlu & İhtiyar, 2017; Mota et al., 2023). In these areas, where restrictions on human activity were previously the primary means of protection, the desired level of conservation has not been achieved. This is largely due to the absence of management plans that are balanced in terms of conservation and utilization, participatory in nature, effective, and practically applicable (Akyol, 2020; Düzgüneş & Demirel, 2018; Yenilmez Arpa, 2011). This situation underscores the need for more effective, rational, and locally tailored protection and management approaches, rather than relying solely on traditional centralized government control.

In this context, the active participation of stakeholder groups in both the decision-making and implementation stages—as well as the integration of relevant policies, strategies, and programs into the management planning process—are considered key elements of rational and sustainable management (Güneş, 2011). Such an approach supports the conservation and sustainable use of natural and cultural resources by fostering cooperation among stakeholders in both planning and implementation. It promotes more inclusive and comprehensive decision-making by involving local communities, municipal governments, civil society organizations, and other relevant actors in the governance of protected areas (Homsy & Warner, 2020; Kovářová, 2020; Stanišić et al., 2021). In doing so, not only is the natural and cultural wealth of these areas preserved, but local communities also play an active role in the process and contribute directly to conservation efforts.

4.1. Analysis of Stakeholder Participation Levels

Despite the emphasis on a participatory approach, findings from the Saros Bay SEPA case reveal that stakeholder participation remains limited in practice. Although 21 public institutions are formally included in the management structure, the actual depth and diversity of participation are low. Most stakeholder groups are involved either passively or in a consultative capacity—such as by providing information or opinions—rather than being actively engaged in decision-making or implementation processes.

Several interrelated factors contribute to this low level of participation:

- Legal ambiguity regarding who qualifies as a stakeholder and how their involvement should be structured,
- Unclear definitions of participatory methods and their appropriate use at different stages of the management process,
- Limited awareness and insufficient incentives for stakeholder engagement,
- A highly centralized administrative system, which discourages local initiative and shared responsibility.

In the United States, the basic guidelines for protected areas indicate that management authority is often delegated to local and community-based organizations (Choe et al., 2024; Koning & Avramoski, 2022). As a result, Type C or Type D management models—characterized by high levels of stakeholder participation—are commonly observed. Similarly, in the United Kingdom, national management plan guidelines emphasize the creation of management strategies through the active participation of multidisciplinary and multi-stakeholder groups (Wildlife and Countryside, 2024).

In contrast, protected areas in Türkiye are primarily managed by centralized state authorities under a hierarchical administrative structure. According to existing legal regulations, protected areas generally fall under Type A management, where control rests with the central government. However, efforts to incorporate participatory approaches into protected area governance have recently gained momentum—particularly in regions such as the Yıldız Mountains Biosphere Reserve and Küre Mountains National Park, where participatory models have started to emerge.

The findings reveal that although certain management plan components received high importance scores (Table 7), their corresponding effectiveness levels remained relatively low (Table 8). Notably, components such as “Stakeholder Interest Identification” and “Accessibility” received lower effectiveness ratings, indicating that these areas were not adequately emphasized within the plan. This aligns with the stakeholder participation levels presented in Tables 10 and 11, which demonstrate that many stakeholder groups, particularly NGOs and private sector actors, were only involved at a passive or information-provision level and were not actively engaged in decision-making processes.

This outcome is consistent with earlier research highlighting the largely formal and symbolic nature of participatory mechanisms in protected area management in Türkiye (Demirayak, 2006; Düzgüneş & Demirel, 2018; Güneş, 2011). In contrast, successful participatory models cited in the international literature emphasize the establishment of multi-stakeholder platforms where NGOs, universities, and local communities play active roles in both planning and decision-making, thereby contributing to greater plan effectiveness (Ervin et al., 2010; Koning & Avramoski, 2022; Wang et al., 2006).

The results of this study therefore underscore the importance of evaluating not only the number of participating stakeholders but also the quality and influence of their involvement throughout the planning process. Future management plans should particularly focus on enhancing active and functional participation in components that are ranked as highly important but currently exhibit limited effectiveness. Doing so may significantly increase the overall success and sustainability of management planning efforts.

4.2. The Case of Saros Bay SEPA and Proposed Improvements

Saros Bay SEPA is administered by the central protected area authority, with 21 different public institutions formally contributing to its management. Due to the presence of an advisory board in the governance structure, the area is classified as a Type B1 collaborative management model. Nevertheless, to enhance the depth and effectiveness of participatory engagement, there is a need to revise existing legislation toward Type C or even Type D models. Although challenging under the current legal and administrative framework, this transition could be facilitated through concrete reforms, such as:

- Establishing mandatory local stakeholder boards,
- Developing clearly articulated participatory protocols, and
- Legally codifying stakeholder engagement techniques and responsibilities.

While the presence of an advisory board was one of the indicators considered in the classification of the Saros Bay

SEPA management model as Type B1 (Collaborative Management), this designation was not based solely on that criterion. The classification also took into account the involvement of multiple public institutions with defined roles in the implementation of the management plan, as well as the documented use of participatory techniques such as focus group meetings, stakeholder consultations, and workshops. Nonetheless, we acknowledge that a more comprehensive assessment of governance type would require additional indicators—such as the degree of stakeholder influence in decision-making, the frequency of participation, and the extent of shared responsibility in implementation. Future research could benefit from integrating these indicators into a more robust typological framework.

Furthermore, while legal reform was initially highlighted as a primary means of facilitating a shift toward Type C (Private Management) or Type D (Community-based Management) models, we recognize that legal change alone is insufficient. Successful transition to more decentralized and participatory governance structures also depends on complementary factors such as building local stakeholder capacity, improving institutional coordination mechanisms, providing financial and technical support, and fostering a culture of trust and collaboration. These elements have now been incorporated into the revised discussion to reflect a more holistic and realistic perspective on governance transformation.

In order to improve the average effectiveness score of the Saros Bay SEPA Management Plan and upgrade it to the "very high" effectiveness category, particular attention should be paid to the two components currently classified as medium: "Appropriate Volume" and "Accessibility."

- For the Appropriate Volume component, the management plan should be revised to align more closely with its objectives. This could include producing a more concise and goal-oriented document, with clearly defined thematic sections, the integration of visual tools (e.g., maps, diagrams), and the elimination of repetitive or overly technical content that might hinder accessibility for non-expert stakeholders.
- Regarding Accessibility, the current practice of publishing the management plan only on the website of the relevant ministry is insufficient. To increase stakeholder reach and awareness, the plan should also be disseminated through printed brochures, newsletters, community announcements, local television, social media, and public forums. Additionally, educational tools, such as short explanatory videos and infographics, can play an important role in increasing both visibility and understanding.

By implementing these targeted and practical improvements, it becomes more feasible to elevate both components to the “very high” effectiveness category—contributing to a more inclusive, transparent, and effective management structure.

Among the components already rated as “high” in effectiveness, further improvement can be achieved through the following measures:

- Ensuring that the management plan is prepared by a multidisciplinary team, including not only government officials but also practitioners, implementers, and community representatives.
- Clearly defining and integrating the interests of all stakeholders during the initial planning stages.
- Maintaining a planning framework that is adaptable, evidence-based, and open to diverse perspectives.
- By implementing these measures, the management plan can be transformed into a more process-oriented, qualified, and innovative document, better equipped to respond to emerging challenges.

For effective management, stakeholders should be involved in both fieldwork and planning activities in accordance with their knowledge, roles, and levels of interest. Participation can take various forms—ranging from passive and consultative involvement to functional, interactive, or even initiative-based engagement. As the level of participation shifts from passive to more proactive forms, its influence and transformative potential increase.

Given the ecological sensitivity and socio-cultural complexity of SEPA areas, it is essential to pursue the maximum feasible level of stakeholder participation, tailored to the context and characteristics of the region.

4.3. Legal and Policy Barriers to Participation

- Precise and unambiguous provisions that define who participates, when, how, and with what tools,
- Specific techniques and stages of participation, adapted to the type of stakeholder and their area of influence,
- Identification of the benefits and risks of participation, along with measurable indicators for evaluating participatory performance.

By incorporating these elements, the legal framework would not only promote consistency and accountability but also

enhance the legitimacy and effectiveness of conservation governance in Türkiye.

Ethics Committee Permission/Etik Kurul İzni:

It is hereby declared that all scientific and ethical principles were observed in the preparation of this study, and that all referenced sources have been properly cited in the bibliography. Ethics Committee Approval from the institution was not required for this study.

Bu çalışmanın hazırlanmasında tüm bilimsel ve etik ilkelere uyulduğu, kullanılan tüm kaynaklara atıf yapılarak kaynakçada yer verildiği beyan edilir. Bu çalışma için kurumdan Etik Kurul Onayı alınması gerekmemektedir.

Conflict of Interest/ Çıkar Çatışması:

The authors declare that they have no conflicting interest.

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Authors' contribution/ Yazar katkısı:

Idea/Concept – E.D.,D.K.G.; Design and Design – D.K.G.; Auditing/Consultancy – E.D.; Sources – E.D.,D.K.G.; Data Collection and/or Processing; D.K.G.; Analysis and/or Interpretation – E.D.,D.K.G.; Literature Review - E.D.,D.K.G.; Writing E.D.,D.K.G.; Critical Review – E.D.

Fikir/Kavram – E.D.,D.K.G.; Tasarım ve Dizayn – D.K.G.; Denetleme/Danışmanlık – E.D.; Kaynaklar – E.D.,D.K.G.; Veri Toplama ve/veya İşleme – D.K.G.; Analiz ve/veya Yorum – E.D.,D.K.G.; Literatür Taraması – E.D.,D.K.G.; Yazı Yazan - – E.D.,D.K.G.; Eleştirel İnceleme – E.D.;

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