



WP2 Awareness raising and pilot activities

D2.6.1. Analyzes in cooperation with key stakeholders

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Authors	Dalka Zanki Tea Kuzmičić Rosandić Tihana Arapović		Organization	Sunce	

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Document description	This document describes how pilot protected areas and Natura 2000 areas will identify waste reduction measures in these areas. This document includes descriptions of three pilot areas of the project (Sakarun Bay, Middle Brenta River, West Coast of Istria). Through a participatory approach, innovative measures beneficial for the natural environment and effective at the same time will be identified and implemented. Based on the current situation in the pilot areas and previous research, some of the measures aimed at the project will be presented in this document in a way to understand and implement waste reduction measures. The definition of the document is an essential preparatory step for Activity 2.7. in WP2: Creation of Action plan.		

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Executive Summary

This document supports the implementation of waste reduction measures in three pilot protected areas and Natura 2000 within the WASTEREDUCE project: Sakarun Bay, the Middle Brenta River, and the West Coast of Istria.

By applying a participatory approach, the project identifies innovative and effective solutions that benefit both the natural environment and local communities.

The document is structured in three parts:

1. An overview of protected areas in Croatia and north-eastern Italy, with a focus on the selected pilot sites.
2. A stakeholder analysis, including roles, governance structures, cooperation methods, and capacity-building needs.
3. Guidelines for implementing waste reduction measures through education, participation, and legal compliance.

This document serves as a key preparatory step for Activity 2.7 of Work Package 2 (WP2), contributing to the development of an Action Plan that promotes sustainable waste management in protected natural areas.

1. Introduction

This document provides a detailed overview of key aspects of protected area management, with a focus on three specific pilot sites: Sakarun Bay, the western coast of Istria, and the Middle Brenta River. Each of these areas holds exceptional value in terms of biodiversity, cultural heritage, and ecological systems, and therefore requires careful planning and coordinated environmental protection efforts.

Sakarun Bay is distinguished by its pristine natural environment, rich biodiversity, and crystal-clear waters, making it an ideal site for the protection of marine ecosystems and the development of sustainable tourism. The western coast of Istria represents a diverse landscape that combines coastal and forested ecosystems with a unique cultural heritage, playing a crucial role in maintaining ecological balance and supporting sustainable economic activities. The Middle Brenta River encompasses vital freshwater ecosystems that support a wide range of plant and animal species and are essential for the preservation of water quality and wetland habitats.

Effective management of these areas requires the active involvement of multiple stakeholders, including government institutions, local communities, non-governmental organizations, and the private sector. Each stakeholder plays a key role in implementing protection measures, conducting scientific research, monitoring ecosystems, and promoting sustainable tourism. However, ensuring effective collaboration often depends on aligning stakeholder interests and activities, which can present significant challenges.

The document also outlines essential implementation measures such as stakeholder education on the importance of natural resource protection, inclusive participatory management approaches, and aligning business operations with environmental legislation to ensure long-term sustainability and legal compliance. Additionally, it analyzes existing challenges in stakeholder cooperation and proposes strategies to enhance their engagement and effectiveness in protected area management.

In summary, this document serves as a set of guidelines for the effective management of protected areas, tailored to the specific needs and challenges of each of the pilot sites analyzed.

2. Description of the pilot area

This section details the three pilot areas that are central to the management and protection of natural heritage, beginning with Sakarun Bay.

2.1 Sakarun Bay

Sakarun Bay is known for its crystal-clear waters, rich biodiversity, and unique natural beauty. It plays a significant role in preserving both marine and coastal ecosystems and provides critical habitats for various species. Its ecological value makes it an important site for sustainable tourism and environmental education.



The northwestern part of Dugi Otok Island was declared a protected area in 1967 under the category of a significant landscape, recognized as one of the most beautiful and ecologically valuable parts of the Zadar archipelago. Its uniqueness arises from its highly indented coastline, which creates a distinctive panorama of bays and peninsulas. This fragmented landscape continues below the sea, forming numerous shoals and reefs that support a rich marine biocenosis (ichthyofauna, shells etc).

A highlight of this area is Sakarun Beach, considered one of the most beautiful beaches in Croatia. The area is not densely populated. Dugi Otok is the seventh largest Croatian island, covering 114.44 km², with a length of over 45 km and a width ranging from 1.2 to 4.5 km—

hence its name, meaning “Long Island.” According to the 2021 census (DZS, 2022), the Municipality of Sali has 1,787 inhabitants.

Within the Natura 2000 network, several different sites are identified in the pilot area:

- 1110: Sandbanks permanently covered by seawater
- 1120: *Posidonia oceanica* seagrass beds (*Posidonion oceanicae*)
- 1160: Large shallow inlets and bays
- 1140: Mudflats and sandflats not covered by seawater at low tide
- 1170: Reefs
- Site code: POVS HR3000069 Sakarun Bay, covering 438.55 ha (square)

The terrestrial vegetation in the area includes Mediterranean maquis and holm oak forests with black ash (*Fraxino orni-Quercetum ilicis*), dominated largely by Aleppo pine (*Pinus halepensis*). On rare sandy-gravel habitats such as Sakarun and Žalić bays, the halophilic-nitrophilic plant community *Euphorbio-Glaucietum flavi* (Horvatić, 1934) is present but threatened by beach cleaning and tourism (Pandža & Milović, 2013). This community includes yellow horned-poppy (*Glaucium flavum*), a strictly protected and endangered (EN) coastal species, recorded in Sakarun Bay.

Additionally, a critically endangered (CR) species, *Calystegia soldanella* (sand bindweed), which thrives on sandy shores, has also been documented in the area (Nikolić, 2021; Nikolić & Topić, 2005).

Environmental Challenges:

Past mechanical removal of *Posidonia oceanica* deposits using dredges, along with other human activities, led to significant sand erosion on Sakarun Beach. Today, *Posidonia* deposits are left to decompose naturally, helping to prevent further soil degradation and coastal erosion.

Visitor Profile & Pressures:

The primary visitors are tourists and local residents, drawn to the beach’s natural beauty. Although there is a relatively high level of environmental awareness regarding waste, the area suffers from an inadequate waste management system. Additional infrastructure challenges include limited access to warm water, sewage systems, water supply, and electricity—issues that constrain efforts to reduce harmful waste generation (e.g., single-use plastics) in the area.

Governance:

The managing authority of the pilot area is the Public Institution "Natura-Jadera" for the management of protected areas in Zadar County. The company responsible for waste management is Mulić d.o.o.

Key Activities and Economic Operators:

Main activities in the area include swimming, catering, shopping, and organized excursions. Businesses operating within the protected zone include:

- 2 campsites
- 3 food service providers
- 1 parking operator
- 1 souvenir shop
- 4 excursion boat operators
- 1 panoramic train
- 1 diving center

2.2 Coastal Istria

The West Coast of Istria is recognized for its diverse coastal ecosystems, rich cultural heritage, and significant biodiversity. The area is home to numerous protected species and habitats, with a focus on preserving its natural landscape while fostering sustainable tourism and local development. Amongst its numerous habitats, two areas were chosen as pilot sites for this project: Limski zaljev (Lim Bay) and Ušće Mirne (Mirna estuary). On the eastern coast we have the third pilot area Ušće Raše (Raša estuary).

Limski zaljev is a long, narrow fjord-like bay (12 kilometers long), bordered by steep limestone cliffs. It is a submerged karst valley created by river erosion located on the western coast of Istria near the towns of Vrsar and Rovinj. The depth is 32 m at the mouth, 30 m in the middle and 19 m at the back. Since 1964, it has been protected as a geomorphological and hydrogeological site in the significant landscape category. In 1980, the sea part was declared a special marine reserve, and from 2013 also as a Natura 2000 site for certain species and habitats in the sea and on land. The surrounding area is moderately populated, although there is a lot of pressure during the summer season due to nearby touristic destinations. As a Natura 2000 site the marine part of Limski zaljev is protected under the Habitats Directive (HR3000001) and Birds directive (HR1000032), with the total area of 673.1 ha and four significantly present habitats while the surrounding land (1168.32 ha) is also protected under the Habitats Directive (HR2000629) with one habitat and two protected bat species.

**Habitats Directive:****Marine area:**

- 1110: Sandbanks which are slightly covered by sea water all the time
- 1160: Large shallow inlets and bays
- 1170: Reefs
- 8330: Submerged or partially submerged sea caves

Land area:

- 8210: Calcareous rocky slopes with chasmophytic vegetation)
- Mediterranean horseshoe bat (*Rhinolophus euryale*)
- Geoffroy's bat (*Myotis emarginatus*)

Bird Directive:

- Common Tern (*Sterna hirundo*)
- Sandwich Tern (*Thalasseus sandvicensis*)
- Red-throated Diver (*Gavia stellata*)
- Black-throated Diver (*Gavia arctica*)
- Kingfisher (*Alcedo atthis*)
- European Shag (*Gulosus aristotelis desmarestii*)

Ušće Mirne is a wide estuary with low-lying wetlands, surrounded by fertile agricultural lands. Located in Northwestern Istria, near the town of Novigrad. The surrounding area is moderately populated although, since it is a touristic destination, there is a lot of pressure during summer season from increased influx of visitors. From 2013 Ušće Mirne is protected under the Habitats Directive as a Natura 2000 site (HR3000433) with the total area of 115.34 ha:

- 1110: Sandbanks which are slightly covered by sea water all the time
- 1130: Estuaries
- 1420: Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

Ušće Raše is the third pilot site in Istria, located on its eastern coast. The estuary consists of brackish water with ongoing processes of sedimentation, surrounded by fields and wooded hills, sparsely populated. From 2013 Ušće Raše is protected under the Habitats Directive as a Natura 2000 site (HR3000432) with the total area of 44.48 ha:

- 1110: Sandbanks which are slightly covered by sea water all the time
- 1130: Estuaries
- Painzza's Goby (*Knipowitschia panizzae*)

All three sites are part of the Natura 2000 network or are otherwise protected (Limski zaljev as a special marine reserve). These sites are managed by Natura Histrica, the public institution for the management of protected areas and other protected natural values in Istria County. Meanwhile, the municipalities handle local policies and activities in the areas, including tourism and waste management.

Authority in charge of waste management in the pilot areas are as follows:

- Limski zaljev – Municipality of Kanfanar, city of Rovinj, Municipality of Vrsar
- Ušće Mirne – City of Novigrad, Municipality of Tar-Vabriga
- Ušće Raše – Municipality of Raša

Waste in these areas primarily originates from tourism, locals, and agriculture/industry. The primary littering drivers in these areas are seasonal tourism, which often overwhelms local waste management infrastructure. The high volume of tourists and visitors contributes significantly to the generation of waste in coastal areas in general. Present litter in these areas consists mainly of plastic waste, food packaging, and other single-use items. Ušće Raše as a less populated and visited area mainly sees a mix of waste brought in by the sea and occasionally litter by sparse visitors and fishermen; industrial waste and oil spillage is also a concern due to the nearby active port.

Some preventive strategies have been implemented but vary in effectiveness, such as public awareness campaigns targeting visitors to reduce littering and encourage recycling, installation of signs against illegal waste disposal.

2.3 The Middle Brenta River

The Middle Brenta River represents a significant freshwater ecosystem that sustains a wide array of plant and animal species. It is recognized for its ecological importance, particularly in the conservation of wetlands and riparian zones, which play a crucial role in preserving biodiversity and maintaining water quality at the regional level.



This fluvial area extends for approximately 70 km, from Bassano del Grappa to Padua, and encompasses the Brenta River and its watershed within the province of Padua. In this section, the river flows through the upper Venetian plain after emerging from its alpine valley. The region is moderately populated, with an average population density of 352 inhabitants per square kilometer. The Brenta River exhibits a quasi-torrential regime, characterized by significant increases in discharge during rainy periods and marked reductions during the summer months.

The Middle Brenta is recognized at the European level and designated as part of the Natura 2000 Network under the site code “SIC/ZPS IT3260018 Grave e Zone Umide della Brenta.” The riverine landscape includes a mosaic of habitats such as gravel beds, floodplains, oxbow lakes, lacustrine steppes, and wetlands featuring reed beds and other riparian vegetation, some of which originated from past excavation activities. The riparian habitats surrounding the river constitute key ecological components. This complex habitat network is vital for the conservation of rare and localized avian species, providing essential breeding and wintering grounds. The Brenta River also serves as a major ecological corridor, offering refuge and connectivity for a diverse range of fauna. Notable species include amphibians such as the crested newt (*Triturus cristatus*) and Lataste’s frog (*Rana latastei*), as well as numerous migratory bird species. Wetlands and freshwater systems, though globally among the most vulnerable ecosystems, remain indispensable reservoirs of biodiversity.

The area is subject to considerable anthropogenic pressures, including urban development, intensive agricultural practices, and industrial activities. Various industrial zones have developed along certain segments of the river. Historically, the extraction of sand, gravel, and stones from the riverbed was a widespread and economically significant activity. The aquifers of the Middle Brenta are of strategic importance to the region, providing potable water to more than 1.5 million residents. The area is administratively divided among ten municipalities, each responsible for local land management, while the governance of the Natura 2000 site is coordinated by the Consiglio di Bacino Brenta.

Despite its high conservation value, the Middle Brenta region is impacted by significant anthropogenic disturbances and mismanagement. Intensive agriculture contributes to habitat fragmentation and ecological degradation. A general lack of environmental awareness among the public leads to detrimental behaviors, including widespread littering and ecosystem damage.

The area experiences peak visitor activity during the spring and summer months, which exacerbates problems related to parking and waste disposal. Most visitors originate from nearby municipalities, and the degree of awareness regarding waste management and environmental protection is highly variable. Field observations have revealed alarming levels of littering and illegal waste dumping. The most commonly observed waste include visitor-generated refuse such as plastics and cans, as well as bulky and inert materials abandoned along the riverbanks.

3. Stakeholders in protected areas

3.1 Roles of stakeholders in protected areas

Effective management of protected areas depends on the active involvement of various stakeholders, each with a specific role and responsibility. This section explores the roles of these stakeholders, the institutions overseeing their activities, and how they can collaborate to ensure effective environmental conservation.

AREA	Business representatives	NW part of Dugi otok	No	Coastal Istria	No	Middle Brenta River	No
Boat operators organizing transportation by boat for visitors		tourist boat tours	4	tourist boat tours (Limski Zaljev)	7	/	
Catering facilities the activity of preparing and serving food and beverages non-urbanized areas, within a simple service facility accompanied by an outdoor terrace		beach bars which offer food and beverages	3	restaurants / bars (2 Limski Zaljev and 1 Ušće Mirne)	3	/	
Campsites outdoor accommodation activity – outside a fixed facility (camp)		camps	2	camps (Limski Zaljev)	4	/	
Parking service activity parking in designated areas		private person managing parking on private area	1	free parking (Limski Zaljev, Ušće Mirne)	2	Local associations that manage parking during the spring and summer	2 (free parking along the river)

					seasons, in exchange for small sums paid by tourists who park their cars in predefined areas.	
Souvenir shop	souvenir and beach use items	1	multiple vendors in permitted location (Limski Zaljev)	1	/	
Panoramic train organizing transportation for site visits via panoramic train	electrical train	1	/		/	
Diving center performing sports and recreational activities – scuba diving	diving center	1	/		/	

3.2 Supervisory institutions over stakeholders

Stakeholders in protected areas include governmental bodies, local communities, NGOs, and the private sector. Each stakeholder has a unique role in the conservation efforts, whether it be through policymaking, on-the-ground management, research, or raising public awareness.

Various institutions are responsible for overseeing and regulating stakeholder activities within protected areas. These include national and local government agencies, environmental protection authorities, and international organizations that ensure stakeholders adhere to legal and environmental standards.

Northwestern part of Dugi otok – Sakarun Bay

The public institution for the management of protected natural areas in the Zadar County area, 'Natura Jadera' (hereinafter referred to as the Public Institution), was established by Zadar County in 2001 (Official Gazette of Zadar County 02/01). Based on the Nature Protection Act, the Public Institution Natura Jadera manages a total of 13 protected areas, including 4 special reserves, 3 natural monuments, 4 significant landscapes, and 2 monuments of park architecture, as well as protected dinosaur fossils and their sites, and as many as 86 areas of the ecological network, including 82 SCI (Sites of Community Importance) and 4 SPA (Special Protection Areas), located in the Zadar County area.

Based on the Nature Protection Act, since April 2003, Natura Jadera has been managing 12 protected natural areas in the Zadar County and 83 areas of the European ecological network Natura 2000 (except for areas within the boundaries of the Paklenica National Park, Telašćica Nature Park, Vrana Lake nature Park, and Velebit Nature Park).

The main activities can be briefly grouped as follows: – Protection of natural values – Ensuring sustainable use of natural resources (concession approvals) – Determining and monitoring the state of nature (research and monitoring) – Preventing harmful human interventions and disturbances in nature (supervision) – Promotion – Education – Creating conditions for rest and recreation.

The activities of the Institution are financed from the County budget, European and Croatian funds, and its own income (e.g., concession approvals, admission fees). The Institution is managed by a Board of Directors consisting of five members appointed by the County Prefect.

In its work, the Institution collaborates with numerous entities and stakeholders in the process of nature protection. At the national level, nature protection falls under the jurisdiction of the Ministry of Environment and Green Transition, which is responsible for the preservation of natural resources, environmental and nature protection, and for promoting climate change adaptation and sustainable development. The Ministry plays a key role in implementing policies aimed at reducing the environmental footprint and transitioning to a green economy, which includes moving towards a low-carbon economy, developing a circular economy, and actively fighting against climate change.

Coastal Istria

On the national level the Ministry of Environment and Green Transition develops overarching policies, while Municipalities handle local policies and activities in the areas, including managing tourism and waste management, while on the regional level one of the responsible parties is the County of Istria.

Since all three sites are a part of Natura 2000 Network or are otherwise protected (Limski zaljev as special sea reserve), these sites are also managed by Natura Histrica as the public institution for the management of protected areas and other protected natural values in the Istria County.

PI Natura Histrica implements nature protection measures by monitoring flora and fauna of protected areas within the County of Istria, to preserve biological and landscape diversity and meet scientific, cultural, aesthetic, educational, economic and other needs. Concerning nature protection and prevention of further pollution and areas devastation, the most commonly encountered situations are the illegal constructions, waste disposals and habitat devastation.

Nature protection measures aim to:

- preserve and renovate the existing biological and landscape diversity in conditions of natural balance and coordinated relations with human activities;
- determine nature conditions and ensure monitoring;
- ensure a system of protection of natural values aimed at the permanent preservation of properties for which they have been declared protected;
- ensure sustainable use of natural resources for the benefit of present and future generations without causing a significant damage to natural areas and with minimal possible disruption their components;
- contribute to the conservation of natural soil, preserve the quality, quantity and availability of water, maintain atmospheric conditions and oxygen production, sustain the climate condition;
- prevent harmful human activities and disturbances in nature resulting from technological development and performance of other activities.

The supervision of protected areas is carried out in accordance with the priorities and need of the site.

PI Natura Histrica provides professional assistance to towns and municipalities in developing, managing and presenting important sites, organizes expert and recreational visits for residents

and guests, and promptly follows local, national and global developments in nature protection and transfers to the public new knowledge and experiences with the public.

Middle Brenta River

The natural area of the Middle Brenta represents a riverine ecosystem of high environmental and landscape value, whose protection requires a complex system of governance and the active involvement of a wide range of stakeholders. These stakeholders operate on multiple levels—institutional, operational, social, and economics and are called upon to collaborate in order to ensure habitat conservation, reduction of human impact, and sustainable management of the area.

At the heart of the governance structure is the Consiglio di Bacino Brenta for the integrated water service, which coordinates the municipalities within the Ambito Territoriale Ottimale (ATO) and leads the management of the Natura 2000 site "Grave e Zone Umide della Brenta." While the ATO defines the territorial scope for service planning, the Consiglio di Bacino acts as the actual governing body, playing a key role in developing shared strategies for environmental protection, water resource management, and pollution control. It serves as a central point for coordinated public action. In parallel, the Consiglio di Bacino Brenta for waste management operates as the competent authority in the field of waste. This body exemplifies a second-level local governance model, integrating municipal administrations into a unified and coordinated vision.

A key operational role is entrusted to ETRA S.p.A., a multi-utility and benefit corporation engaged in integrated waste management and an actively participating in conservation projects in the Middle Brenta area. ETRA is responsible for environmental monitoring, targeted waste collection in the river area, and the promotion of environmental education through its ETRA Academy. Its strategy is guided by a model aimed at reducing environmental impact and enhancing ecosystem services. ETRA's contribution is therefore central both from a technical and educational standpoint, particularly in combating the issue of littering in the area.

In addition to public bodies and technical managers, local municipalities also play a significant role. They actively participate in shaping territorial policies and contribute with resources, expertise, and regulatory tools. Environmental associations, NGOs, and volunteer organizations are also important partners in the day-to-day management of the area, often engaged in clean-up activities, civic monitoring, and environmental education.

Lastly, local residents, farmers, and tourists represent both a resource and a challenge for the conservation of Middle Brenta. Their behavior has a direct impact on the ecological balance of the area: on the one hand, they can support protection efforts through responsible behavior and active participation; on the other, inappropriate practices such as littering and the misuse of natural areas make ongoing awareness-raising and engagement efforts necessary.

In this complex context, the path toward safeguarding the area must be based on an integrated and participatory approach. It is essential to strengthen synergies among institutions, managers, citizens, and economic actors, promoting a culture of sustainability and activating innovative tools for waste prevention and management. Only through a shared vision and coordinated management can the long-term protection of one of Veneto's most valuable river ecosystems be ensured.

3.3 How to collaborate with stakeholders

Collaboration among stakeholders, including public institutions, the utility companies, and the municipality, is necessary and essential for effective management. This section explores different methods of cooperation, including regular communication, joint decision-making processes, and the creation of dialogue platforms to ensure that all parties work together toward common conservation goals.

To facilitate easier and more effective collaboration with stakeholders, it is recommended to establish clear communication channels and define the roles and responsibilities of each partner from the outset. Regular meetings, workshops, and consultations enable the exchange of ideas, timely problem-solving, and the strengthening of mutual trust. It is also important to encourage transparency at all stages of cooperation and to allow stakeholders to participate in key decision-making processes. Developing long-term partnerships based on mutual respect and a shared vision can significantly contribute to achieving sustainable and effective results.

Effective management of protected areas requires an integrated approach that encompasses various aspects of collaboration, communication, and stakeholder engagement. Based on the identified challenges and needs, a set of recommendations has been developed across six key recommendation areas: Communication, Formal Agreements, Awareness Campaigns, Business Support, Community Engagement, and Monitoring and Evaluation.

These recommendations are intended for application across all protected areas, regardless of their size, governance structure, or level of development. The aim is to ensure more effective stakeholder involvement, strengthen mutual trust, raise awareness and knowledge levels, and

establish sustainable mechanisms for cooperation and impact monitoring. The tables below present specific recommendations within each thematic area, providing guidance for improving management practices and supporting the conservation of natural values.

Category	Actions for engaging stakeholders
Communication	Establish regular meetings, designate contact with people, and use digital tools for ongoing communication.
Joint Planning	Develop joint action plans with clear roles and timelines, focusing on reducing specific types of waste.
Formal Agreements	Sign cooperation agreements outlining responsibilities and collaboration goals.
Awareness Campaigns	Create shared campaigns targeting visitors and businesses, promoting businesses' progress.

Business Support	Support local businesses with training or grants to transition to low-waste operations.
Community Engagement	Involve residents in clean-up events and educational initiatives as sustainability ambassadors.
Monitoring and Evaluation	Define shared indicators and evaluate progress collectively to inform future actions.

In order to gather feedback that will support continuous improvement and provide an overview of the measures taken, it is recommended to regularly monitor the implementation status of actions across each area of engagement involving stakeholders.

Implementation Status
☐ Proposed ☐ Approved ☐ In Progress ☐ Completed ☐ To be planned ☐ Postponed (_____ until/for when?)

3.4 Analysis of the need to improve stakeholders' activities

Although many stakeholders are actively engaged in conservation efforts, certain areas still present opportunities for improvement. Strengthening stakeholder involvement is essential for achieving long-term conservation goals and ensuring effective and inclusive management of protected areas.

This section provides an overview of key areas where stakeholder contributions can be enhanced, based on identified challenges and practical experience from the field. The analysis focuses on specific aspects of stakeholder engagement and outlines concrete measures for improvement. These areas of action are organized into the following categories:

Stakeholder Gap Assessment – identifying which stakeholders are underrepresented or missing and analyzing the reasons for their limited involvement.

Capacity Building – improving stakeholders' knowledge, skills, and resources to enable more meaningful and active participation.

Coordination Mechanisms – strengthening structures and processes that facilitate effective communication and cooperation among various actors.

Incentives for Engagement – developing motivational and supportive measures to encourage continuous stakeholder involvement.

Feedback and Impact Reporting – establishing systems for monitoring stakeholder contributions and ensuring transparent communication of outcomes.

Integration of Local Knowledge – recognizing and including traditional and community-based knowledge in decision-making and planning.

Customized Engagement Approaches – tailoring engagement methods to suit different stakeholder groups, ensuring inclusivity and relevance.

The table below presents recommendations within each of these areas, offering practical guidance for enhancing stakeholder participation and strengthening the overall governance of protected areas.

Category	Description	Recommendation
Stakeholder Gap Assessment	Identifying underrepresented or missing stakeholders and analyzing barriers to their involvement.	Conduct assessments to identify underrepresented stakeholder groups and tailor engagement strategies accordingly.
Capacity Building	Enhancing knowledge, skills, and access to resources for more meaningful participation.	Provide targeted workshops and toolkits on sustainable practices and low-waste models.
Coordination Mechanisms	Improving systems for communication and collaboration among stakeholders.	Establish coordination platforms or working groups for joint planning and communication.
Incentives for Engagement	Creating motivational mechanisms to encourage ongoing participation.	Introduce recognition systems and financial incentives for proactive stakeholders.
Feedback and Impact Reporting	Monitoring stakeholder input and communicating outcomes in a transparent way.	Monitor, evaluate, and report the outcomes of stakeholder activities, offering constructive feedback.
Integration of Local Knowledge	Including traditional and community-based knowledge in decision-making and planning.	Engage local and Indigenous communities to co-develop culturally relevant, low-waste solutions.
Customized Engagement Approaches	Adapting engagement methods to suit the needs and preferences of different stakeholder groups.	Adapt engagement strategies to suit different stakeholder types, from institutions to residents.

Implementation Status

- ☐ Proposed
☐ Approved
☐ In Progress
☐ Completed
☐ To be planned
☐ Postponed
 (_ until/for when?)

4. Measures of the implementation

4.1 Stakeholders' education

Educating stakeholders is essential for ensuring that all parties involved have a clear understanding of conservation goals, legal requirements, and best practices. Training and workshops will be organized to equip stakeholders with the necessary knowledge and skills to actively contribute to the protection of the environment.

No.	Measure	Description	Responsible Entity	Status	Output
1	Development of an Educational and Communication Plan	Create a plan including goals, target groups, key messages, communication channels, and timeline.	Protected area manager, local authorities, communication experts	Completed	Two-year educational and communication plan focused on reducing plastic and environmental impact
2	Regular Informative and Educational Campaigns	Use leaflets, radio, social media, posters, and workshops to inform the local population.	Protected area manager, local utility companies	Ongoing	Increased local awareness on waste separation, plastic pollution, and conservation
3	Annual Educational Meetings for Stakeholders	Organize workshops and round tables on nature protection, sustainable tourism, and waste management.	Protected area manager, NGOs, schools, local government	In progress	Improved cooperation and understanding among stakeholders

No.	Measure	Description	Responsible Entity	Status	Output
4	Educational Activities for Children and Youth	Develop educational materials and interactive workshops in schools and kindergartens.	Protected area manager, educational institutions	In progress	Young people demonstrate increased knowledge and awareness of environmental protection through both formal and informal education
5	Community Involvement in Environmental Cleanup Actions	Organize volunteer cleanups of the sea, beaches, and surrounding land area combined with educational messaging.	Protected area manager, NGOs, utility companies	In progress	Active citizen participation and stronger sense of environmental responsibility
6	Education for Tourism Operators and Visitors	Provide materials and workshops on sustainable behavior and waste reduction in protected areas.	Tourist board, protected area manager	In progress	Informed tourists and tourism staff aligned with nature protection goals

4.2 Involving stakeholders in participatory methods

Involving stakeholders in participatory methods allows for inclusive decision-making processes and fosters a sense of ownership among local communities and other key actors. This approach builds mutual trust, enhances local capacity, and contributes to the long-term success of conservation goals.

No.	Measure	Description	Responsible Entity	Status	Output
1	Establishment of Stakeholder Forums	Create formal stakeholder groups (residents, NGOs, tourism sector, fishers, etc.) to participate in regular discussions about protected area management.	Protected area manager, local government	To be planned	Functional multi-stakeholder forum enabling regular two-way communication and joint decision-making
2	Participatory Planning Workshops	Organize inclusive workshops to involve stakeholders in developing or updating management and action plans.	Protected area manager, facilitators, planning experts	In progress	Stakeholder input integrated into official plans; enhanced transparency and trust
3	Involvement in Ecological Monitoring	Train and engage local stakeholders (e.g., fishers, students, rangers) to collect environmental data (biodiversity, pollution, water quality).	Protected area manager, NGOs, research institutions	In progress	Locally collected data supports adaptive management; builds local capacity and stewardship

No.	Measure	Description	Responsible Entity	Status	Output
4	Co-organization of Awareness Campaigns	Include stakeholders in the design and delivery of awareness-raising campaigns (e.g. clean-up drives, educational events, media campaigns).	Protected area manager, local associations, youth groups	In progress	Community-led initiatives increase outreach impact and legitimacy
5	Participatory Evaluation of Management Effectiveness	Invite stakeholders to participate in evaluation and feedback processes (e.g. surveys, focus groups, scorecards).	Protected area manager, external evaluators	To be planned	Stakeholders' perspectives inform adaptive management and policy improvements
6	Support for Community-Based Conservation Initiatives	Provide technical and financial support to local projects initiated by community members (e.g., eco-tourism, habitat restoration).	Protected area manager, donors, local development agencies	To be planned	Strengthened ownership and long-term sustainability of conservation efforts

4.3 Harmonization of business with laws

Ensuring that stakeholders' activities align with environmental laws and regulations is critical for sustainable management. This measure aims to harmonize business practices with legal frameworks, helping stakeholders comply with environmental protection standards while promoting sustainable economic activities in protected areas.

In summary, the implementation of these measures will ensure the active participation of all stakeholders in the protection of natural resources, fostering collaboration, raising awareness, and ensuring that conservation efforts are effective and sustainable.

No.	Measure	Description	Responsible Entity	Status	Output
1	Legal Compliance Workshops for Stakeholders	Organize educational workshops for local businesses, landowners, and service providers to explain relevant environmental laws, zoning rules, and obligations.	Protected area manager, environmental authorities, legal experts	Proposed	Improved understanding of legal frameworks among stakeholders; reduced unintentional violations
2	Development of Sector-Specific Guidelines	Create practical guidelines for key sectors (e.g., tourism, agriculture, fisheries) on how to operate sustainably and in compliance with conservation regulations.	Protected area manager, sectoral agencies, NGOs	To be planned	Distributed compliance manuals tailored to local economic activities
3	On-Site Advisory Support	Provide on-the-ground technical and legal advisory	Protected area manager,	In progress	Businesses receive direct support in

No.	Measure	Description	Responsible Entity	Status	Output
		services to help local stakeholders adapt their operations to comply with environmental standards.	inspectors, local consultants		meeting legal requirements and improving sustainability practices
4	Compliance Monitoring and Reporting System	Establish a transparent and participatory system to monitor compliance and report violations, including stakeholder involvement in observing and flagging issues.	Protected area manager, environmental inspectorate	In progress	Functional monitoring system that improves accountability and transparency
5	Incentives for Compliant and Sustainable Businesses	Offer recognition, certifications, or access to funding/support programs for businesses that demonstrate legal compliance and environmental stewardship.	Protected area manager, local development agencies	To be planned	Increased motivation for compliance through positive reinforcement and economic benefits
6	Integration of Environmental Compliance into Licensing Procedures	Ensure that all licenses, permits, and concessions in the protected area include environmental conditions aligned with conservation goals.	Local/regional authorities, protected area manager	In progress	All new business permits aligned with legal and conservation requirements

With all three sets of measures: Education and Awareness, Participatory Governance, and Legal Harmonization — stakeholders are empowered, informed, and engaged in active, lawful, and sustainable conservation efforts. These complementary approaches ensure effective protection of natural resources while supporting local development.

CONCLUSION

Stakeholders play a crucial role in the management of protected areas, and their active involvement is the foundation for sustainable and effective conservation of natural values. Stakeholder analysis enables a better understanding of their interests, influence, and potential contributions to decision-making processes and the implementation of measures. It is important to identify all relevant stakeholders – from public institutions and local communities to non-governmental organizations, the private sector, and the scientific community – and to establish mechanisms for their systematic inclusion.

Their actions and cooperation contribute to greater legitimacy and transparency in management, facilitate the implementation of the action plan, and enhance the overall effectiveness of nature protection. Through partnerships, dialogue, and knowledge exchange, solutions can be jointly developed that address both ecological goals and socio-economic needs. Therefore, it is essential to ensure ongoing communication, capacity building, and stakeholder engagement at all stages – from planning to implementation and evaluation of measures.

Ultimately, the successful implementation of the action plan and the long-term protection of protected areas are only possible with strong support and active participation of all stakeholders.

