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MPA CAPO CARBONARA
Marketing & Communication Plan
3.8.1

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1. Description of the location

Villasimius is a town located in the southern part of Sardinia, about 40 km from Cagliari, the regional capital, covering an area of 57.97 km². To the west lie mountainous hills, including Monte Minni Minni (*~700 m above sea level*), whilst the eastern side is characterised by the Notteri Pond and the coastal stretch of the beaches of Simius and Porto Giunco.

The south-eastern section is dominated by the promontory of Capo Carbonara, a key geographical feature that marks the eastern boundary of the Gulf of Cagliari (*length 3.5 km; maximum width 1.8 km*).

On the promontory, the western side features the small marina of Villasimius with an adjacent small beach, the remains of a historic fortification including Torre Vecchia, Punta Santo Stefano (the furthest point), and the hamlet of Santa Caterina with its cove; whilst on the eastern side there are the small beach of Is Traias, the beach of Porto Giunco, Notteri Pond (habitat of the pink flamingos), Torre di Porto Giunco, and the pebbly beach of Cava Usai (a former granite quarry abandoned in the 1950s).

About 800 m south-east of the coastline lie Isola dei Cavoli and Isola Serpentara, an integral part of the Capo Carbonara Marine Protected Area, a strategic element for the planning and feasibility of the proposed NbS interventions.

2. Analysis

2.1 Resident population and tourist population

The municipality of Villasimius is one of the main tourist hubs in southern Sardinia, characterised by a marked seasonal variation in tourist numbers. The resident population stands at 3,700-3,800 inhabitants (*population density: 65 inhabitants per km²*). During the peak months (*July-August*), the daily visitor count reaches 50,000, with an estimated annual total of between 700,000 and 1,000,000 visitors during the period June - September.

2.2 Housing stock, beds and accommodation facilities

The housing stock comprises 4,921 units (*ISTAT 2001*), compared with 1,982 resident households in 2023 (*3,721 inhabitants*), with 20% permanently occupied and 80% (*3,900 - 4,000 units*) used as second homes or for tourist accommodation.

The accommodation sector, as of 2024, offers 59,644 official beds (*+17.8% compared to 2023*), distributed across: 45 hotels, 30 guesthouses, 8 holiday apartments, 22 B&Bs, 1 campsite, 1 motorhome site; there are also a number of non-hotel accommodation facilities.

Of these, 16,333 beds are divided between 7,775 in hotels, 8,431 in non-hotel accommodation and 127 in B&Bs, supplemented by short-term rentals (*Airbnb*) and day trips from Cagliari and neighbouring areas.

This picture highlights a strong tourist vocation and a high seasonal load, critical factors for assessing the feasibility of the proposed NbS interventions.

2.3 Locations

The sites where work is to be carried out are Notteri Pond and Porto Gunco beach.

The Notteri Pond is situated in the south-eastern part of Sardinia, in the municipality of Villasimius, adjacent to Porto Giunco beach, from which it is separated only by a narrow strip of sand. It is a protected wetland covering approximately 34 hectares, characterised by shallow waters with high salinity. It is a semi-permanent environment, fed mainly by winter storm surges, rainfall and subtle underground seepage, whilst the surrounding landscape consists of granite rocks. The lagoon, with its brackish waters, is home to a rich variety of life forms, including algae, diatoms and small planktonic organisms. Halophytic plants, such as glasswort, rushes and tamarisk, grow along the edges; in some sections there are reed beds and patches of Mediterranean scrub, featuring mastic trees and other aromatic species. The lagoon is home to numerous species of waterbirds, notably the greater flamingo, which frequents the area in large flocks during the autumn and spring.

Porto Giunco beach is surrounded by Mediterranean scrub and nestled amidst a blend of unspoilt nature and pristine sea; it is known as ‘the beach of the two seas’ as it lies between the sea and the Notteri Pond. Its sandy shore, which is wide and stretches for about a kilometre, consists of very fine, pure white sand with microscopic grains of pink granite that give it subtle pinkish hues; these reflect the light and lend the sea a distinctive brilliance, with crystal-clear turquoise colours. The waters are shallow, with a sandy seabed for several metres, making Porto Giunco an ideal spot for families with children and snorkelling enthusiasts. In the cove, on the southern hill, stands a 16th-century Spanish tower, from which you can admire the entire bay and the lagoon. This scenery, with the contrast between the blue of the sea and the green of the vegetation, is one of the most iconic symbols of Villasimius’s natural beauty.

2.4 S.W.O.T. analysis

Table 1, S.W.O.T.

Strenghts	Weaknesses
The region and the municipality of Villasimius is its exceptional environmental value	Heavy influx of tourists presents considerable challenges.
Numerous beaches and coastal areas are internationally renowned for their scenic beauty and high-water quality	High anthropogenic pressure
Villasimius has promoted and implemented concrete initiatives for sustainable local development	Tourism activities that are not always sustainable
Numerous beaches and coastal areas are internationally renowned for their scenic beauty and high-water quality	Tourism activities concentrated in summer months
The establishment of the Capo Carbonara Marine Protected Area	Habitats are particularly fragile and vulnerable to disturbance caused by human activities, especially tourism-related ones
Good practices: A modern wastewater treatment plant; Effective waste management;	The Posidonia oceanica meadows cover about 2,500 hectares and colonize the seabed from a few meters to 40 meters deep (in green in Figure 2). In general, they are in good health, with a compact and continuous structure, except in some more frequently visited areas where signs of degradation and discontinuity are observed.
Commitment to preserving and enhancing the area's high environmental value	
A prestigious area to protect at the national level	

The Posidonia oceanica meadows cover about 2,500 hectares and colonize the seabed from a few meters to 40 meters deep (in green in Figure 2). In general, they are in good health, with a compact and continuous structure, except in some more frequently visited areas where signs of degradation and discontinuity are observed.	
The presence of these habitats and species confirms the quality of the marine waters and the absolute need to enhance their protection.	
Number of beaches: 22	
Opportunities	**Threats**
The establishment of the Capo Carbonara Marine Protected Area: fundamental tool for building a culture of sustainability while promoting durable and responsible tourism development models	Tourism is essential for economic growth, it can affect natural areas.
AMP covers 14,360 hectares which includes 40 km coastline, 7 km of them are sandy beaches and 2 km rocky beaches	Intense use of natural resources results in significant environmental impacts,
Tourism is essential for economic growth	Approximately 1,000,000 visitors between June and September
Approximately 1,000,000 visitors between	The Posidonia oceanica meadows cover about 2,500 hectares and colonize the seabed from a few meters to 40 meters deep (in green in Figure 2). In general, they are in good health, with a compact and continuous structure, except in some more frequently visited areas where signs of degradation and discontinuity are observed.
Growing demand for sustainable and experiential tourism (+25% annually)	Critical issues that have emerged in recent years the most concerning is the issue of anchorage, which can lead to the alteration and fragmentation of habitats
European funding for NbS projects and climate adaptation	Critical issues, particularly related to past decisions, include the destruction and subsequent loss of dune environments
A global trend towards authentic and responsible destinations	Urbanization, intensive use of coastal areas for tourism and recreational purposes
Positioning Sardinia as ‘The biggest wild Mediterranean island’	Trampling, which causes uprooting or weakening of the existing flora, shell and sand collection, and soil compaction lead to direct damage to this type of ecosystem
The Sardinia Ecotourism Network is now up and running and open to partnerships	Excessive water consumption, increased waste production and high traffic levels
At least 10 species of marine and aquatic birds	Critical issue, the presence of invasive alien species
Villasimius as a strategic location within the migratory routes of 40 species	Anthropogenic disturbance comes from abandoned fishing gear: fishing lines and pots
	Critical issue, destruction and loss of dune environment
	Critical issue, urbanization, intensive use of coastal areas for tourism and recreational purpose
	Critical issue, construction of the Marina di Villasimius harbor
	Critical issue, the presence of alien and invasive species which contributes to creating ecological imbalances in plan and animal communities

2.5 The positioning of the tourist destination today

Table 2 highlights Villasimius's standing compared to other seaside tourist resorts. The common feature of all the resorts analysed is that three out of four have a marine protected area. Alongside the 'natural environment' factor represented by the presence of the marine protected area, the following criteria were used for comparison to map the positioning: beaches, seasonality, types of tourists and the origin of visitors.

The research revealed that Villasimius experiences a very pronounced seasonal pattern, concentrated in the typical summer months (*June-July-August*). This pattern is consistent both with the origin of the tourists and with the needs they seek to satisfy: the search for spectacular seascapes, relaxation and tourist facilities, accompanied by a strong summer presence and a stay often centred on the beach, nature and nightlife.

Table 2, benchmark positioning

Location		Beaches	Seasonality	Natural environment		Type of tourist	Tourist origin
Villasimius	South-east Sardinia, an ideal starting point for exploring the Sarrabus	Iconic beaches, white sand and crystal-clear sea, interspersed with rocky stretches	Very pronounced, with a strong summer peak	Picturesque and stunning landscape	AMP - Capo Carbonara	Families, couples, premium leisure travellers, beach lovers and those who enjoy light outdoor activities	A strong Italian presence, also European, it is growing the international market
San Teodoro	North-east Sardinia, in the Gallura region, which is well integrated into the north-east's tourism sector	Very famous, wide and picturesque beaches, with a strong appeal to holidaymakers	Very strong in the summer, with high demand and significant peaks	Good, with natural areas and a very attractive coastal setting	AMP Tavolara - Punta Coda Cavallo	Young adults, groups, families, active seaside tourism	Very strong Italian presence; international and European market
Costa Rei	South-east Sardinia, with its long, straight coastline and seaside resorts	Endless, easily accessible beaches with fine sand and crystal-clear waters	Very seasonal, with a strong focus on summer	A beautiful natural setting, albeit lacking in variety	----------	Families, couples, holiday apartments and holiday homes, a pure beach holiday	Mainly Italians, with very strong domestic demand
Alghero	North-west Sardinia, a tourist town with urban amenities and a more developed infrastructure	Good beaches, but it's not just about the seaside: the town and the surrounding area are important too	Seasonality is present, but less pronounced thanks to the city, events and amenities.	Particularly interesting for its landscape, coastline and links to natural and cultural areas	AMP - Capo Caccia - Isola Piana	A diverse range of tourists: beach holidays, city breaks, couples, families, and those interested in culture and dining	A strong international presence, Germany, France, Switzerland, the UK and Spain

2.6 Visitor behaviour priorities

Actually the typical visitor to Villasimius is primarily a beach holidaymaker seeking spectacular seaside scenery, relaxation and tourist facilities, with a strong summer presence and a stay often centred around the beach, nature and nightlife.

The age range is 25–55, with a significant proportion of families and couples. Visitors mainly come from Italy, but also from other European and international markets. Their motivation is linked to the sea, beaches, relaxation and the natural landscape; their main interests include day trips and nightlife. They have a particular sensitivity and seek good water quality, scenic beauty, comfort and easy access to amenities.
The aims of the holiday are: to take a break from the daily grind; to enjoy the seaside in a beautiful, well-maintained setting; to experience a simple yet high-quality holiday; to alternate between relaxation, good food and small outdoor activities.
Their travel habits typically involve booking mainly during the summer months, with an average stay of 5–10 days; they prefer comfortable accommodation such as hotels, holiday apartments, self-catering flats and villas. Their main mode of transport is the car. They look for information online before booking and value reviews, real photos and recommendations on beaches and restaurants.

3. Vulnerabilities and Nature based Solutions (NbS)

3.1 Overview of climate vulnerability assessment

There are generally four vulnerabilities under consideration: the Coastal Tourism and Hospitality Sector, Water Resources and Tourist Services, Waste Management and Urban Infrastructure, and Transport and Accessibility (*Table 3*).

Communication initiatives will focus on managing the climate-related risks posed by a range of phenomena, including coastal erosion, changes in local currents, heatwaves, storms and storm surges. These events can reduce the area's appeal to tourists and threaten beachfront facilities, compromising the provision of services, whilst heatwaves can deter visitors, affecting hotel occupancy rates and restaurant revenues. This climate risk is linked to the first vulnerability, that relating to the coastal tourism and hospitality sector.

Table 3, vulnerabilities

Vulnerability	Climate risk	Impact
Coastal Tourism and Hospitality Sector	Coastal erosion, changes in local currents, heatwaves, storms, and heavy waves	Erosion and sea encroachment can reduce tourist attractions and threaten beachfront structures, compromising service delivery. Heatwaves can discourage visitors, affecting hotel occupancy rates and restaurant revenues
Water Resources and Tourist Services	Drought, heatwaves, and reduced rainfall	Increased competition for water usage between tourism, agriculture, and residents, especially during peak seasons. Water scarcity can limit the operation of hotels, restaurants, and recreational activities, increasing management costs and reducing service quality
Waste Management and Urban Infrastructure	Rising temperatures and seasonal overloads	Waste production increases significantly during the summer months, while high temperatures accelerate decomposition, creating challenges in waste collection and disposal, with potential hygiene and urban aesthetic issues
Transport and Accessibility	Heatwaves, extreme weather events	Increased pressure on public transport during the high season, with supply often insufficient in relation to demand

3.2 Description of Nature-based Solutions

Taking into account the vulnerabilities and potential climate risks and impacts (*Table 3*), the Nature-based Solutions selected for Porto Giunco beach and Notteri Pond constitute an integrated portfolio of measures that address ecosystems, infrastructure and local communities. In line with the international framework on NbS, these combine measures for the protection, management and restoration of coastal ecosystems with hybrid solutions and socio-organisational mechanisms, jointly addressing challenges such as erosion, biodiversity loss, plastic pollution and seasonal tourist pressure.

As shown in Table 4, three NbS strategies have been selected: Ecological restoration and/or conservation, Infrastructure-related NbS and Socio-ecological NbS. The NbS actions consist of four types of measures: Management of Posidonia oceanica, Dune restoration, Green Infrastructure, and Communication, awareness raising and participation. There are nine specific actions in total: Sustainable management of Posidonia oceanica beds; Installation of windbreak fences; Delimitation

using post–rope–post fencing in dune and lagoon areas; Restoration of wooden boardwalks for Notteri and access to Porto Giunco; Eco-friendly waste collection areas; Installation of mobile public toilets; Regulation of pedestrian flows through the creation and enhancement of footpaths and cycle paths; Environmental education and awareness programmes; and Environmental awareness trails.

Table 4, NbS

NbS strategies	NbS actions	Specific actions
1. Ecological restoration and/or conservation	1.1 Management of Posidonia oceanica	1.1.1 Sustainable management of Posidonia oceanica banquettes
	1.2 Dune restoration	1.2.1 Installation of Windbreak Fences 1.2.2 Delimitation with ost–rope–post fencing 1.2.3 Restoration of wooden boardwalks 1.2.4 Ecofriendly Waste Collection Areas 1.2.5 Installation of mobile public toilets
2. Infrastructure - related NbS	2.1 Green Infrastructure	2.1.1 Creation and enhancement of pedestrian and cycling paths
3. Socio-ecological NbS	3.1 Communication, awareness raising and participation	3.1.1 Environmental Education and awareness programs 3.1.2 Environmental awareness trails

4. Strategy

The plan's strategy is based on an integrated approach, consistent with the European Strategy on Adaptation to Climate Change (*SEACC, 2021*), which emphasises the urgent need for action in light of the increasing frequency and severity of climate and weather events. This strategy promotes the acceleration of adaptation processes across all sectors and encourages a systemic approach.

This approach is aligned with the Do No Significant Harm (*DNSH*) principle, which prohibits causing significant harm to the environment, as well as with the objectives of the National Climate Change Adaptation Strategy (*SNACC*, *see 1.2.2*), the principles of the Regional Climate Change Adaptation Strategy (*SRACC*) and the objectives of the 2030 Agenda.

4.1 General objectives and general principles

Key objectives (*SNACC*)
- to improve knowledge and awareness of climate impacts
- to assess local vulnerabilities, adaptation options and opportunities
- to integrate adaptation measures into sectoral policies, supported by the National Adaptation Plan (*PNACC*) as an implementation tool.

Regional policy aims to position Sardinia as a leading tourist destination through a new strategy and action plan centred on three key objectives:
- improving the sector's competitiveness
- promoting the sustainable development of tourism
- strengthening the island's image as a high-quality destination.

Consequently, this involves strengthening the sector's resilience, promoting more environmentally friendly tourism and implementing legislative initiatives on environmental protection and climate neutrality.

The general principles (*SRACC*):
- to improve understanding of climate change and its impacts
- to describe the region's vulnerabilities, adaptation options and any associated opportunities
- to promote participation and raise awareness, including with a view to integrating adaptation into sectoral policies
- to support awareness-raising and information provision on adaptation
- to specify the tools to be used to identify the best options for adaptation measures.

2030 Agenda: Sustainable Development Goals:
Goal 6: Ensure access to water and sanitation for all, *Goal 8*: Promote inclusive and sustainable economic growth, employment and decent work for all; *Goal 12*: Ensure sustainable consumption and production patterns; *Goal 15*: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss; *Goal 14*: Conserve and sustainably use the oceans, seas and marine resources; *Goal 13*: Take urgent action to combat climate change and its impacts.

4.1.1 Overall objective of the marketing and communication plan

The marketing and communication plan aims to encourage behavioural change in tourists by shifting them away from a passive approach typical of beach holidaymakers seeking relaxation, scenic landscapes and amenities, and towards a more active and mindful attitude. This objective is pursued through an educational, positive, ethical and experiential communication strategy grounded in an integrated system of values, mission and vision.

Specifically, this translates into visitors adopting a more active, mindful and respectful attitude towards the coastal environment. Visitors are encouraged to protect the dunes, Posidonia seagrass and protective infrastructure, choose sustainable accommodation and actively contribute to the area's sustainability objectives. To this end, they use designated paths and facilities correctly, avoid damaging fragile habitats and help keep the beach clean, accessible and sustainable.

4.1.2 Mission, Vision, Values

Vision: Villasimius aspires to become a Mediterranean model of sustainable and regenerative coastal tourism. A place where Nature-based Solutions strengthen climate resilience and promote shared prosperity, and where visitors act as active stewards of the environment, contributing to the protection and enhancement of ecosystems.

Mission: to encourage a change in tourists' habits and lifestyle, helping them to become more aware of the need to respect the environment

Values: The principles underpinning the marketing plan and communications aimed at the tourist target audience fall into three categories: core values, experiential values, and developmental relational values.

Core values:
- sustainability: reducing environmental impact and protecting natural resources
- awareness: understanding the impact of one's choices and the value of the environment
- responsibility: adopting proactive and respectful behaviour towards local areas and communities
- education: access to tools and experiences that enable lasting change.

Experiential values:
- authenticity: genuine experiences that are consistent with the local context. Engagement: the tourist's active participation in the process of change
- well-being: the link between sustainability, the quality of the experience and personal well-being.

Developmental relational values:
- respect: protecting the environment, culture and biodiversity, whilst avoiding exploitation
- community: supporting local economies and fostering relationships with local residents
- sustainable innovation: creative solutions for more responsible and accessible tourism.

4.1.3 Specific objectives and behaviours in relation to NbSs

Table 5 shows how the specific objectives have been broken down according to the identified NbS; consequently, specific behaviours to be promoted have been identified to help achieve the overall outcomes expected from the NbS.

Table 5, specific objectives and behaviours

NbS	Specific objective	Specific behavioural priorities	Overall outcome expected
1.1.1 Sustainable management of Posidonia oceanica banquettes	Ensure the natural preservation of beached Posidonia as a protective seagrass bed	- do not remove or disturb the Posidonia - avoid walking on it where possible - do not treat it as a form of waste - follow the information provided	Posidonia is naturally regenerating; no illegally removed seagrass clumps; compliance observed
1.2.1 Installation of Windbreak Fences	Preserving the integrity of dune protection structures	- do not move, damage or climb over the barriers - keep your distance from the structures - do not use them for support or as a seat	Barriers intact; visible natural sand accumulation;
1.2.2 Delimitation with ost–rope–post fencing	Respect the boundaries of sensitive areas	- do not go beyond the fences - use only authorised access points - do not lift or climb over ropes or posts - ensure the group behaves appropriately	People entries via official access points; reduction in offences during peak hours; the fences remain intact
1.2.3 Restoration of wooden boardwalks	Focus access to the beach on sustainable routes	- use the walkways to access the area - avoid taking alternative routes across sand or vegetation - do not sit on the edges or damage the structure	People use the footbridges; no new informal routes; footbridge integrity
1.2.4 Ecofriendly Waste Collection Areas	Ensuring a clean and properly sorted beach	- dispose of waste in the appropriate bins - sort waste for recycling as required - do not leave rubbish on the beach or in the dunes - do not leave rubbish behind if the bins are full	Correctly sorted for recycling; bins full at the end of the day
1.2.5 Installation of mobile public toilet	Preventing environmental health impacts	- make use of the facilities provided - avoid inappropriate behaviour (e.g. relieving oneself outside) - keep the areas clean - report any faults to the operator	Correct use of facilities; zero environmental hygiene impacts

4.2 Target audience

Through the segmentation process, four target groups were identified (*Table 6*): Relax and Comfort, Couples, Active holidaymakers, and Students. These segments were mapped by considering five factors: objective, behaviour, sensitivity, environmental sensitivity, and leverage; which describe the behavioural characteristics of tourists and support the definition of specific objectives (*Table 5*). Among these groups, students in primary and lower secondary school represent a particularly suitable target for educational and awareness-raising activities. They are a young and curious audience, well suited to outreach pathways based on direct experience, observation and guided learning. This target also meets the need to build long-term awareness by acting on age groups whose attitudes and behaviours towards the environment can still be strongly shaped through education.

Tabella 6, target audience

	Relax e confort	**Couples**	**Active holidaymakers**
Audience/Target	Couples and families aged 30–55, often Italian	25–45, including international ones	25–50
	They work all year round and are looking for a simple, relaxing holiday with no unexpected surprises. They book well in advance and choose comfortable accommodation near the sea	They travel to experience beautiful, 'Instagram-worthy' places. They love discovering new beaches, taking photos and dining in charming spots	They are looking for a balance between relaxation and light activity. They aren't into extreme sports, but they enjoy being active and exploring the local area
Objective	A complete break from the daily grind, beautiful seaside, no stress, and convenient facilities	Scenery, atmosphere, memorable photos and experiences	Alternate relaxation with light activities, explore nature and the countryside, enjoy authentic experiences
Behaviour	Beaches with facilities, always by car, a set routine (beach–restaurant–accommodation)	Explore more beaches, seek out iconic spots, sunsets and nightlife	Uses footpaths, hires equipment, goes on short walks, asks for information about routes and maps, and is willing to walk to reach less crowded beaches
Sensitivity	High standards of cleanliness, accessibility and water quality	Aesthetics, authenticity, crowds	Quality of trails, signposting, environmental protection
Environmental sensitivity	Positive but passive: they follow the rules if they are clear and straightforward Unwilling to change their habits if it causes inconvenience	Good, but dependent on the aesthetic experience Risk of straying from the paths in search of 'the perfect shot'	High: tends to follow the rules and respect the environment More willing to adopt sustainable practices
Leverage	Comfortable, well-signposted walkways Visible (showers, toilets, waste bins) and efficient facilities Car parks and beach facilities that are well organised Simple messages such as 'follow the route'	Creation of official 'photogenic' viewpoints Signage such as 'photo spots' + clear directions Storytelling about conservation (e.g. fragile dunes = beauty to be protected)	A network of well-signposted trails Clear maps (including digital versions) Information on ecosystems (Posidonia, dunes) Incentives for soft mobility

4.3 Communication strategy

The communication focuses on the vulnerability of the coastal tourism and hospitality sector to risks associated with climate change, such as coastal erosion, changes in local currents, heatwaves, storms and storm surges. Within this setting, the communication plan aims to guide and encourage people to adopt a more active and informed approach whilst on holiday.

4.4. Communication framework

4.4.1 Communication and campaign and actions

NbS reference campaign 1

Table 7, NbS action 1.1 Management of Posidonia

NbS strategy	NbS action	Specific action
Ecological restoration and/or conservation	1.1 Management of Posidonia oceanica	1.1.1 Sustainable management of Posidonia oceanica banquettes

NbS reference campaign 2

Table 8, NbS action 1.2 Dune restoration

NbS strategies	NbS action	Specific actions
Ecological restoration and/or conservation	1.2 Dune restoration	1.2.1 Installation of Windbreak Fences 1.2.2 Delimitation with ost–rope–post fencing 1.2.3 Restoration of wooden boardwalks 1.2.4 Ecofriendly Waste Collection Areas 1.2.5 Installation of mobile public toilets

NbS reference campaign 3

Table 9, NbS action 3.1 Communication, awareness raising and participation

NbS strategies	NbS action	Specific actions
3. Socio-ecological NbS	3.1 Communication, awareness raising and participation	3.1.1 Environmental Education and awareness programs 3.1.2 Environmental awareness trails

4.4.2 Communication principles

4.4.2.1 Communication approach - content - expected outcome

Experiencing Villasimius means enjoying the landscape and looking after it. Visitors play an active role in protecting the dunes and the Posidonia seagrass and help to ensure the overall sustainability of the destination.

The communication approach is educational, experiential and values-based, and aims to:
- inform and prepare visitors by raising awareness of behaviours that protect dunes, Posidonia and coastal facilities;
- guide behaviour on-site through clear and immediate visual messages that encourage spontaneous compliance;
- reinforce positive experiences, fostering advocacy and the adoption of responsible behaviours beyond the visit.

Content focuses on:
- protection of dunes and coastal vegetation;
- ecological role of Posidonia;
- sustainable choices (transport, accommodation, waste management);
- appropriate behaviour during the stay.

The expected outcome is a more informed and responsible visitor who actively contributes to local sustainability by integrating environmentally respectful practices into their travel experience.

4.4.2.2 Communication logic and style of message

The communication logic is based on increasing awareness of the role of Posidonia and dune systems as natural coastal defences, while promoting respectful behaviour. When visitors understand their value, they are less likely to perceive them as waste or degradation and more likely to protect them, contributing to the reduction of erosion and climate-related impacts.

The message style is educational, positive and action-oriented. It is designed to inform without inducing guilt and to guide visitors clearly and effectively towards appropriate behaviours.

4.4.3 The audience “target”

Table 10 shows the four target groups identified: ‘Relaxation and wellbeing’, ‘Couples’, ‘Active tourists’ and ‘Students’, who are the target audiences for the three different campaigns.

Table 10, The audience - campaign 1, 2, 3

Relax and comfort	Couples	Active holidaymakers	Students
- couples and families aged 30–55, often Italian - they want a simple, relaxing holiday with no unexpected surprises - they book in advance and prefer comfort and convenience - communication focus: reassure them that Posidonia is not a sign of poor maintenance, but a sign of a healthy beach	- usually aged 25–45, including international visitors - they look for beautiful, memorable and visually attractive places - they enjoy discovering beaches, taking photos and living authentic experiences - communication focus: connect Posidonia with the beauty, uniqueness and preservation of the landscape	- usually aged 25–50. - they seek a balance between relaxation and light activity - they enjoy exploring the local area and moving across different sites - communication focus: provide quick, clear and practical cues that guide behaviour on the spot	- primary school students - secondary school students - communication focus: environmental education as a means of transforming knowledge into responsible behaviour

4.4.4 Tourist journey

Table 11 shows the tourist journey, which sets out the objectives of the communication campaign broken down into the three stages of the customer journey (pre, during, post); these are aligned with the overall objective, the communication plan and the specific objectives/priority behaviours (*Table 5*).

The identifiable funnel is: awareness pre -> action during -> loyalty post

Table 11, Tourist journey

Phase	Campaign objective	Key priorities	Online channels	Offline channels	Expected outcome
Before the visit (Pre)	Inform and prepare beachgoers, raising awareness of the correct behaviour to protect dunes, Posidonia seagrass and facilities	- the ecological role of Posidonia and dunes - key rules (walkways, fencing, waste) - sustainable accommodation in Villasimius	Website/local council, AMP Capo Carbonara social media, TripAdvisor reviews, hotel newsletters, digital maps	Airport signage, tourist guides, hotel brochures, road signs	tourists informed prior to arrival; bookings for green accommodation
During the stay	Reinforce and guide behaviour on the ground with clear, visual messages, encouraging voluntary compliance	- do not disturb Posidonia/barriers - use authorised walkways/access points - Dispose of waste in bins, use toilets	QR codes for walking trails, local app, beach information display	Multilingual signs, beach information points (Porto Giunco), beach attendants, route signage	compliance with observed behaviour; breaches during peak hours
After the visit (Post)	Consolidate the positive experience, encourage advocacy and behaviour that can be replicated in other destinations	- thanks for your cooperation - personal impact (before/after photos) - Invitation to leave sustainable reviews	Post-stay emails, user-generated social media content, online surveys	‘Responsible Tourist’ certificates, commemorative postcards	positive reviews on sustainability; NbS for green tourism

4.4.5 Communication before the visit - during the stay - after the visit

4.4.5.1 Before the visit

Campaign objective: to inform and prepare summer holidaymakers, raising awareness of the correct behaviour to protect dunes, Posidonia seagrass and beach facilities

Key message: to inform and prepare beach visitors, raising awareness of the correct behaviour to protect the dunes, Posidonia seagrass and local facilities

General pre-visit message: ‘Come prepared to Villasimius: know the rules, enjoy the full experience’

4.4.5.2 During the stay

Campaign objective: to reinforce and guide behaviour on the ground with immediate, visual messages, encouraging spontaneous compliance

Key message: to reinforce and guide behaviour on the ground with immediate, visual messages, encouraging spontaneous compliance

General during the stay message: ‘One small gesture from you, equal a perfect beach for everyone’

Online-onsite synergy: each sign has a QR code leading to an explanatory video plus digital checklist

4.4.5.3 After the visit

Campaign objective: to build on the positive experience, encourage advocacy and promote practices that can be replicated in other destinations

Key message: consolidate the positive experience, encourage advocacy and behaviours that can be replicated in other destinations

General post-visit message: ‘You made a difference in Villasimius. Keep it up wherever you go!’

4.4.6 Communication channels

The planned channels will mainly be on-site and online, featuring content designed to raise awareness of environmental protection in the Villasimius area, with a particular focus on Porto Giunco beach and the Stagno di Notteri area.

Table 12, Communication channels

Communication channels	Online channels	Offline channels
Before the visit	- destination website and AMP Capo Carbonara website - social media channels of the municipality and protected area - accommodation websites, booking confirmation emails and hotel newsletters - tourist information pages and digital maps - travel planning content aimed at helping visitors understand local environmental rules	
During the stay	- local app, digital maps and service web pages - geolocated notifications where available	- multilingual signs near beach entrances and posidonia accumulation areas QR codes on signage linking to a short explanatory video and a simple checklist - beach information points, especially in Porto Giunco and the Notteri Pond area - visual materials placed along walkways and decision points - immediate verbal reminders from beach attendants and environmental wardens
After the visit	- post-stay emails thanking visitors for their contribution - online surveys and feedback forms Social media storytelling and user-generated content - invitations to leave sustainability-related reviews - shareable digital messages encouraging visitors to adopt similar behaviour elsewhere	

4.5 Campaign

The campaigns address the vulnerability of the coastal tourism and hospitality sector to climate-related risks, such as coastal erosion, changes in local currents, heatwaves, storms and high waves. In this context, Nature-based Solutions are presented as concrete responses to protect the coast, strengthen resilience and promote more responsible behaviour. The campaigns translate this strategic objective into communication, awareness-raising and educational initiatives: *Campaign 1* highlights the management of Posidonia oceanica as a natural coastal defence; *Campaign 2* supports dune restoration through behaviour-oriented nudging strategies; whilst *Campaign 3* promotes long-term awareness through environmental education on NbS. Taken together, these campaigns integrate resilience, visitor behaviour and learning into a single, coherent communication framework.

4.5.1 Campaign 1

Title: Posidonia is not waste, it protects Villasimius

Expected result
Visitors no longer perceive Posidonia as an aesthetic problem, but as a natural and useful element that deserves respect. As a result, compliance increases and the likelihood of removal or disturbance is reduced.

4.5.1.1 Objective campaign

The aim of the campaign is to raise visitors' awareness of the role of washed-up Posidonia as a natural coastal protection system, which is vital for safeguarding the coastline against erosion, wave action and the wider effects of climate change, and to encourage them to behave respectfully.

Process, the message is:
first, the message is explained; then, it is made visible at the exact point where the tourist makes a behavioural choice; finally, it is reinforced by staff on site.

4.5.1.2 Tone of the campaign, general and specific messages

Campaign message
The campaign conveys the idea that spending a holiday in Villasimius means enjoying the beauty of the landscape and actively contributing to its protection. Posidonia is presented as a natural resource that is fundamental to the coastal ecosystem.

Behavioural messages promoted by the campaign
- do not remove or disturb Posidonia banquettes
- do not treat Posidonia as waste or dirt
- avoid walking on it where possible
- read and follow on-site information
- recognise Posidonia as part of a healthy and resilient beach ecosystem
- repeat and promote the same responsible behaviour in other destinations.

Table 13, Messages - campaign 1

Core campaign message	Main Posidonia message	Supporting message
Experiencing Villasimius means enjoying the landscape and looking after it	Posidonia is not waste, it protects the beach	What nature leaves on the shore helps defend the coast from erosion, waves and climate impacts

Table 14, Tone of voice, actions and tools - campaign 1

Tone of voice	Actions that enable to behave differently	Tools
Educational	Recognise Posidonia as a natural element that should remain on the beach	Beach entrance panel with the message “Posidonia is not waste, it protects the beach”; QR code linking to a 30-second video with simple before/after images
Positive	Treat Posidonia as part of the coastal protection system rather than as waste	Short message in hotel emails: “If you find Posidonia on the beach, please leave it in place”
Simple and visual	Follow the signs, icons and guidance provided on site	Clear icon showing the recommended action: “Walk around, do not remove”
Experiential	Walk around Posidonia where possible instead of crossing or trampling it	QR code linking to a 30-second video with simple before/after images
Relational	Listen to and comply with reminders from staff	Verbal reminder from the beach attendant during peak hours

4.5.1.3 Campaign objectives and messages at each stage

Table 15, Stage “before, during, after”, poseidonia message - campaign 1

Stage	Campaign objective	Posidonia-focused message	Adapted message
Before the visit	To inform and prepare summer holidaymakers, raising awareness of Posidonia on the beach and its ecological value	Come prepared to Villasimius: Posidonia on the beach is natural, useful and worth protecting	Know what Posidonia is before you arrive, so you can enjoy the beach in the right way
During the stay	To reinforce and guide behaviour on the ground with immediate,	Please do not remove it or walk on it unnecessarily	One small gesture from you equals natural protection for everyone

	visual messages, encouraging spontaneous compliance		
After the visit	To build on the positive experience, encourage advocacy and promote behaviours that can be replicated in other destinations	You helped protect a living coastal defence system	You made a difference in Villasimius. Keep respecting nature wherever you go

Effective communication messages to visitors

The following messages can be used at the various touchpoints and are tailored to suit each one:

- before arrival: "*Posidonia protects our beach — please know it before you come*"
- at the beach entrance: "*Posidonia is not waste. Leave it where nature placed it*"
- on signs or panels: "*Walk around Posidonia — do not remove or disturb it*"
- from staff on site: "*This Posidonia helps protect the shore from erosion and waves*"
- in hotel or booking emails: "*Found Posidonia on the beach? Please leave it in place*"
- after the visit: "*Thank you for helping protect Villasimius' natural coastal defence*."

4.5.1.4 Campaign roles, responsibilities, and expected output

Table 16, Role-Responsibility-Expected output - campaign 1

Role	Responsibility	Expected output
Comune di Villasimius / AMP Capo Carbonara	Coordinate communication activities, define the campaign framework, and ensure consistency across all phases	A coherent and unified communication strategy
Beach attendants / information point staff / local operators / volunteers / environmental wardens	Manage communication on site, provide immediate guidance, and reinforce the message at the moment of behavioural choice	Visitors receive direct, timely and context-specific guidance
Accommodation providers / tourism operators / guides / institutional digital channels	Disseminate the campaign before arrival and during the stay through websites, emails, social media and information materials	Visitors are informed in advance and arrive with greater awareness
Comune di Villasimius / AMP Capo Carbonara / technical support staff	Contribute to monitoring the campaign, observe visitor behaviour and collect feedback on effectiveness	Evidence for evaluation and possible adjustment of the campaign

4.5.2 Campaign 2

Title: Stay on the path, protect the dunes

Expected result
Visitors understand that following the rules is not just a restriction, but a way to protect the beach. As a result, they are more likely to use boardwalks, respect fences, dispose of waste correctly and use the facilities provided.

4.5.2.1 Objective campaign

The aim of the campaign is to raise visitors' awareness of the importance of dune systems as a natural defence for the coastline and to promote responsible behaviour that ensures their protection, such as using the walkways, respecting the fencing, disposing of rubbish properly and making use of the facilities provided.

Process, the message is:
Visitors are first informed that dunes are not just part of the landscape, but a fragile and essential protection system for the beach.
Then, the message is made visible on site: clear signs, icons and visual cues show exactly what to do, such as staying on the path, not crossing fences, using bins and toilets, and respecting beach infrastructure.
Finally, the message is reinforced through direct contact: beach attendants, information point staff and local operators provide brief, consistent reminders at the moments when visitors make decisions.

4.5.2.2 Tone campaign – general and specific messages

Campaign message
The campaign promotes the idea of experiencing Villasimius by enjoying the beauty of the coastline while actively contributing to its protection. Dunes are part of the landscape and play a crucial role in safeguarding the beach and strengthening its resilience.

Behavioural messages promoted by the campaign
- stay on official paths and use the boardwalks
- do not cross or damage the dune area
- respect fences and all protected zones
- follow signs, icons and visual cues on site
- dispose of waste in the provided bins
- use the toilets and other facilities correctly
- pay attention to the guidance given by beach attendants, information point staff and local operators
- treat the dunes as a fragile natural defence system, not as a simple part of the landscape
- support the protection of the beach by following the rules consistently
- help reduce erosion and climate impacts by behaving responsibly in the coastal area

Table 17, Messages campaign 2

Core campaign message	Main dune protection message	Supporting message
Experiencing Villasimius means enjoying the beauty of the coastline whilst actively contributing to its protection	Stay on the path, protect the dunes	Use the walkways, respect the fences, dispose of waste properly and use the facilities provided to help protect Villasimius from erosion and climate impacts
		One small gesture from you helps protect Villasimius from erosion and climate impacts

Table 18, Tone of voice, actions and tools - campaign 2

Tone of voice	Actions that enable to behave differently	Tools
Educational	Explain the role of dunes as a natural coastal defence	Multilingual information panels with the message “Stay on the path, protect the dunes”; QR codes with short explanatory content and videos on dune protection; infographics with simple behaviour rules
Positive	Dispose of waste in the provided bins and use the toilets correctly	Short claims, motivational messages and thank-you content; visual material in parking areas, entrances and facilities
Simple and visual	Stay on official paths and access points; follow signs, fences and simple reminders near sensitive zones	Directional signage at access points and along walkways; icons and pictograms near fences, bins and toilets
Experiential	Use boardwalks instead of crossing dune areas directly	Social media content and pre-visit communication through accommodation providers; visual material in parking areas, entrances and facilities
Relational	Respond to staff guidance in the most sensitive areas	Beach attendants and information point staff

4.5.2.3 Campaign objectives and messages at each stage

Table 19, Stage "before, during, after", dune message - campaign 2

Stage	Campaign objective	Dune-focused message	Adapted message
Before the visit	To raise visitors' awareness of the importance of dune systems as a natural coastal defence and to prepare them to adopt responsible behaviour before arriving in Villasimius	The dunes are a natural coastal defence that protects the beach and strengthens its resilience	Come prepared to Villasimius: know the rules, respect the dunes and help protect the coastline from erosion and climate impacts
During the stay	To reinforce and guide behaviour on the ground with immediate, visual messages, encouraging spontaneous compliance with the rules that protect the dunes	The dunes are a natural coastal defence: use the walkaways, respect the fences, dispose of waste properly and use the facilities provided	One small gesture from you equals a protected dune system for everyone. Stay on the path, use the facilities and help Villasimius stay resilient
After the visit	To consolidate the positive experience, encourage advocacy and promote responsible behaviours that can be replicated in other destinations	Protecting the dunes means protecting the future of Villasimius	You helped protect a fragile coastal landscape. Keep up the same responsible behaviour wherever you go

Effective communication messages to visitors

The following messages can be used at the various touchpoints and are tailored to suit each one:

- at the entrance: "*Stay on the path. Protect the dunes"*
- on the walkways: "*Use the boardwalks. Let the dunes regenerate"*
- next to the bins: "*Use the bins. Keep the beach clean"*
- next to the toilets: "*Use the facilities. Small action, big difference"*
- after the visit: "Thank you for protecting Villasimius. Keep behaving responsibly everywhere."

4.5.2.4 Campaign roles, responsibilities, and expected output

Table 20, Role-Responsibility-Expected output - campaign 2

Role	Responsibility	Expected output
Comune di Villasimius / AMP Capo Carbonara	Coordinate communication activities, define messages, tone and objectives, and ensure consistency across the before–during–after phases	A coherent communication plan aligned with the campaign objectives
Beach attendants / information point staff / local operators / volunteers / environmental wardens	Manage on-site communication, provide immediate guidance and reinforce correct behaviour at decision points	Visitors informed and guided on site; higher compliance with the expected behaviours
Accommodation providers / tourism operators / guides / institutional digital channels	Disseminate the campaign before arrival and during the stay through emails, websites, social media and information materials	Greater pre-visit awareness and stronger recognition of the campaign
Comune di Villasimius / AMP Capo Carbonara / technical support staff	Monitor the campaign's effectiveness, observe visitor behaviour and collect field evidence	Monitoring data, results assessment and possible strategy adjustments

4.5.3 Campaign 3

Title: Learn, explore, protect: discovering NbS in Villasimius

Expected result
The campaign increases students' awareness of coastal and lagoon ecosystems and helps them recognise the value of Nature-based Solutions in protecting these environments. It also encourages a shift from passive observation to more active, respectful and responsible behaviour.

4.5.3.1 Objective of the campaign

The campaign raises awareness through an educational programme aimed at primary and lower secondary school pupils, with the aim of introducing them to Nature-based Solutions and guiding them towards a more informed and responsible attitude.

It is based on four core values: sustainability, awareness, responsibility and education; which help pupils understand the impact of their choices and the importance of protecting local natural resources.

4.5.3.2 Main topics addressed

The campaign explains to students the main restoration and conservation measures implemented in Villasimius, with a particular focus on the sustainable management of Posidonia oceanica and the restoration of the dunes. The educational content includes windbreaks, cord and post boundary systems, wooden walkways, eco-friendly waste collection points and mobile public toilets. These initiatives are presented as concrete examples of effective, context-specific solutions for environmental protection.

4.5.3.3 Educational message

The campaign's message focuses on protecting the environment and understanding how nature works, explaining why certain measures are necessary. Pupils are encouraged to recognise nature-based solutions as practical ways of protecting beaches, dunes, lagoons and biodiversity, and to understand how even simple behaviours – such as staying on the paths or respecting designated areas – contribute to safeguarding the environment. The aim is to promote more mindful and responsible attitudes in everyday life too.

4.5.3.4 Tone of the campaign – general and specific messages

Campaign message
The campaign is based on an understanding of the workings of nature and the role of rules, structures and restoration measures, whilst emphasising the importance of students' contribution to protecting the environment through simple everyday actions.

Behavioural messages promoted by the campaign
- respect dunes, fences and boardwalks
- do not damage plants, sand barriers or natural materials
- use bins and facilities correctly
- observe the environment carefully and ask questions
- recognise Nature-based Solutions as tools that protect nature and people
- apply the same respectful behaviour in other places

Table 21, Messages - campaign 3

Core campaign message	Main NbS message	Supporting message
Discovering Villasimius means learning how nature is protected and why everyone has a role in this process	Nature-based Solutions help protect beaches, dunes, lagoons and biodiversity	Small actions, informed choices and respectful behaviour can make environmental protection more effective

Table 22, Tone of voice, actions and tools - campaign 3

Tone of voice	Actions that enable to behave differently	Tools
Educational	Recognise Nature-based Solutions as practical tools for protecting coastal and lagoon environments	Guided in-person educational sessions to introduce the NbS framework; informational brochures with simple explanations and illustrations
Simple and clear	Observe the environmental role of dunes, Posidonia, fences and boardwalks during the field visit	Guided field visits to Porto Giunco and Stagno di Notteri; informational brochures with simple explanations and illustrations
Engaging	Connect what they learn in the classroom with what they see on site; ask questions and take part actively in the guided activities	Guided field visits to Porto Giunco and Stagno di Notteri; verbal explanations and reminders provided by educators, teachers and guides
Positive	Handle the learning materials and take-home leaflets as memory aids	Informational brochures with simple explanations and illustrations; small gadgets to reinforce key messages after the visit
Relational	Remember and repeat the main messages after the visit in their everyday behaviour	Verbal explanations and reminders provided by educators, teachers and guides; small gadgets to reinforce key messages after the visit

4.5.3.5 Campaign objectives and messages at each stage

Table 23, Stage "before, during, after", NbS message - campaign 3

Stage	Campaign objective	NbS-focused message	Adapted message
Before the visit	To prepare students for the experience and introduce the idea that nature can be protected through concrete solutions	Nature can be protected through simple and effective solutions	Get ready to discover how Villasimius protects its beaches, dunes and lagoon
During the visit	To help students observe the solutions directly and connect them with their environmental function	Boardwalks, fences, dunes and Posidonia all help protect the coast	Look carefully: every element you see has a role in protecting nature
After the visit	To reinforce learning and encourage students to apply the same awareness in everyday life	Protecting nature also depends on your behaviour	What you learned in Villasimius can help you respect nature

Effective communication messages to visitors

The following messages can be used at the various touchpoints and are tailored to suit each one:

- before the visit: "*Discover how nature can be protected with simple solutions"*
- during the classroom session: "*Nature-based Solutions help protect nature by working with it"*
- at the dune area: "*Stay on the boardwalk. Let the dunes grow"*
- near fenced areas: "*Fences protect fragile places. Please respect them"*
- near Posidonia deposits: "*Posidonia is not waste. It helps protect the beach"*
- at waste collection points: "*Use the bin correctly. Help protect nature"*
- after the visit: "*What you learned here can help you protect nature everywhere."*

4.5.3.6 Campaign roles, responsibilities, and expected output

Table 24, Role-Responsibility-Expected output - campaign 3

Role	Responsibility	Expected output
Comune di Villasimius / AMP Capo Carbonara	Coordinate the campaign, define the educational framework, ensure coherence between messages, activities and materials, and oversee implementation	A coherent educational campaign aligned with local environmental objectives
Schools / teachers	Prepare students before the activity, support participation, mediate content in age-appropriate ways and reinforce learning after the visit	Better student engagement and continuity between the educational activity and school learning
Environmental educators / guides / local operators	Deliver the guided sessions and field visits, explain the NbS on site and encourage questions, observation and correct behaviour	Students receive clear, interactive and context-based explanations during the experience
Communication and educational support staff	Prepare brochures, visual materials and gadgets, and support the practical organisation of the activities	Accessible educational materials and smooth delivery of the campaign
Comune di Villasimius / AMP Capo Carbonara / teachers / educators	Contribute to monitoring by observing participation, collecting feedback and assessing the effectiveness of the educational pathway	Qualitative evidence on student engagement, message retention and possible improvements

4.6 Integrated campaign KPIs

For the first two campaigns, the focus is on visitor compliance and knowledge retention; for the third campaign, the focus is on learning outcomes and behavioural recall among students.

Campaign 1

KPI 1 Visitor awareness of the protective function of Posidonia
- What it measures: Percentage of visitors who recognize beached *Posidonia oceanica* as a natural and protective element, rather than an aesthetic problem;
- How to collect the information: Pre- and post-visit surveys (5-question questionnaire with closed-ended questions and rating scales);
- By whom: AMP Capo Carbonara staff, environmental wardens, coordinated by the Municipality of Villasimius and the NbS project.

KPI 2 Reduction in requests for Posidonia removal
- What it measures: 30% reduction in the number of requests for removal or disturbance of beached *Posidonia* on beaches;
- How to collect the information: Monitoring of administrative data (records of intervention requests at the Environmental Office of the Municipality of Villasimius);
- By whom: , AMP Capo Carbonara staff, Environmental Office of the Municipality of Villasimius, in collaboration with the NbS project.

Campaign 2

KPI 1 Compliance with sustainable access and dune protection measures
- What it measures: Percentage of visitors using designated boardwalks and respecting fencing (i.e. no trespassing in restricted dune areas);
- How to collect the information: Periodic on-site observations and counts (e.g. structured observation grids, manual or video-assisted monitoring at key access points);
- By whom: AMP Capo Carbonara staff; Beach management staff and local environmental officers, in coordination with the Municipality of Villasimius and NbS project partners.

KPI 2 Proper use of beach facilities and waste management systems
- What it measures: Percentage of visitors correctly using waste collection areas (sorted waste) and public facilities (e.g. toilets), combined with reduction in littering incidents;
- How to collect the information: Waste audits (composition and sorting quality), facility usage records, and periodic cleanliness assessments of beach areas;
- By whom: Waste management services and municipal environmental office, in collaboration with NbS project partners.

Campaign 3

KPI 1 Students' knowledge of NbS and coastal ecosystems
- What it measures: Percentage of students demonstrating increased knowledge of coastal and lagoon ecosystems and the role of Nature-based Solutions in their protection;
- How to collect the information: Pre- and post-activity tests (multiple-choice questionnaires and short comprehension exercises) administered during educational programmes;
- By whom: Environmental educators and teachers, in collaboration with NbS project partners.

KPI 2 Change in students' attitudes and behaviours

- What it measures: Percentage of students who adopt or report more responsible and environmentally respectful behaviours (e.g. staying on designated paths, proper waste disposal, protection of natural habitats);
- How to collect the information: Self-assessment questionnaires, observations during activities (e.g. educational trails), and teacher feedback;
- By whom: Environmental educators, teachers, and organisers of the educational pathways, in coordination with the NbS project.