

# Development of REGLPORTE Environmental Impact Assessment study



**PROJECT:**

**NAUTICAL TOURISM DEVELOPMENT AND PROMOTION OF REGIONAL PORTS** with acronym "REGLPORTS", which is funded by the transnational cooperation Programme "Interreg IPA CBC Italy–Albania–Montenegro Programme" of the 2014-2020 Program Period»

**ENVIRONMENTAL IMPACT ASSESSMENT** study for parts of the interventional area where activities are foreseen to take place, encompassing all the potential aspects that might affect natural, cultural and anthropogenic environment.

**CONTRACT:**

The Study include: (a) the Environmental Impact Assessment for the foreseen Nautical Tourism Development Plan (D.T1.4), specially focusing on the suggested Thematic Routes and their destinations, (b) Recommendations for best practices and suggested measures to ensure the environmental sustainability."

**ACTIVITY:**

A.T.1.2 "Environmental Impact Assessment and Sustainability"

**DELIVERABLE:**

D.T.1.2.1 "Environmental impact assessment of REGLPORTS Nautical Tourism plan"

**DATE:**

30/11/2021

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## Introduction

### The Interreg IPA CBC Italy-Albania-Montenegro Programme

The Interreg IPA CBC Italy-Albania-Montenegro Programme, co-funded by the European Union through the Instrument for Pre-Accession (IPA II), has a total budget of 92.707.558,00 euro (including 15% national co-financing). The Programme is managed by Puglia Region, which participates together with another Italian Region, Molise; Albania and Montenegro participate with the entire territory. The objective is to promote economic growth and to intensify cooperation in the low Adriatic area, by implementing joint actions between national and regional institutional and non-profit actors and by fostering smart, inclusive and sustainable development.

The overall Programme budget is EUR 92.707.555, with a Union Support of EUR 78.801.422. The financial allocation to the chosen thematic objectives reflects the estimated financial size of actions foreseen in each priority axis, the coherence with the funding priorities as in the EC Country Position Paper and in the EC Indicative Strategy Papers, the strategic choices of the Programme stakeholders, as well as the inputs provided by relevant partners within consultations. Additionally, not less than 50% of total amount of the financial resources shall be reserved for thematic calls and strategic projects.

The Program Priority Axis are:

- **PRIORITY AXIS 1. Strengthening the cross-border cooperation and competitiveness of SMEs.**
- **PRIORITY AXIS 2. Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness.**
- **PRIORITY AXIS 3. Environment protection, risk management and low carbon strategy**
- **PRIORITY AXIS 4. Increasing cross border accessibility, promoting sustainable transport service and facilities and improving public infrastructures.**
- **PRIORITY AXIS 5. Technical Assistance.**

## The REGLPORIS Project

The Adriatic Sea is characterized by a unique coastal environment with significant potential for tourism development. However, this potential is not fully exploited, while tourist activities are mainly focused on a seasonal “sun, sea and sand” approach. Nevertheless, there are alternative forms of tourism which could prolong the tourist season, tap new markets and overall, provide the essential conditions for regional economic growth.

Nautical Tourism (NT) is a dynamically expanded form of tourism, consisting an industry of high added value with strong clientele growth tendencies in the Adriatic Sea. In general, NT is seasonal, however, if combined properly with other mild tourism activities it may be prolonged with profound positive impact to local economies. Despite its high potential, NT is not sufficiently developed in the intervention area and its connection with the assets of the hinterland is insufficient.

Hence, the overall objective of the REGLPORIS Project is to develop a common model for the smart and sustainable NT management through integrated development plans. More specifically, the Project aims to provide a holistic approach by (a) connecting the coastal areas with the rich inland’s assets, (b) emerging and promoting the interconnected areas (Area Brand, Thematic Routes), and (c) upgrading tourism supporting services and products. The envisaged plan will constitute an innovative approach in tourism industry, and increase tourism population, regional economic growth and therefore contribute significantly to the accomplishment of Program’s result indicators. The anticipated impact will substantially benefit stakeholders in the intervention area, including local communities, national and/or regional organizations and tourism related businesses.

The Partners participating in the Project are:

- **National Coastline Agency (LP) - AL**
- **Municipality of Molfetta – IT**
- **Municipality of Termoli - IT**
- **Union of the Provinces of Puglia - IT**
- **Ministry of Tourism and Environment of Albania – AL**
- **Agency for the management of the town harbor Herceg Novi Ltd. – ME**

The Associated Partners of the Project are:

- **Municipality of Vlora – AL**

- **Region of Molise – IT**
- **Municipality of Herceg Novi –ME**
- **Tourism Agency of Manfredonia – IT.**

### The REGLPORTE Environmental Impact Assessment

The environmental sustainability of the foreseen data and development propositions, is a prerequisite for the overall viability and success. Therefore, the given data and analysis, as well as any suggested actions, measures and strategies, are provided in the context of securing that environmental conditions will not be jeopardized by the changes imposed in the Intervention Area.

Particularly, the capacities of ports and tourism destinations were carefully considered throughout the research, as well as the natural resources (marine water, coastal, soil, inland water) and habitats. In this frame, the process of the collected information and the conclusions deriving from the analysis, will be elaborated for parts of the Intervention Area, encompassing all the potential aspects that might affect natural, cultural and anthropogenic environment.

In the framework of the EU Environmental Impact Assessment Directive, starting point is that every development should not lead to (further) deterioration of the current environmental situation. Preferably the environmental situation would even be improved. As marina development and/or expansion is considered to be of high importance, an EIA needs to be carried out before any development activities can be initiated.



## Methodological Framework

The process of identifying a methodology for assessing the environmental sustainability of the individual actions proposed and the overall framework is a valid tool that puts in a position to analyze the positive and negative implications of the interventions taking into account the environmental and socio-economic effects on the territory.

The environmental considerations set out in this report are of fundamental importance for the decision-making process and for the implementation of the project as they guarantee in advance an in-depth study of the effects both in the preliminary study phase and in the operational phase.

According to the current European directives in this field, the environmental impact assessment has the function of *“ensuring a high level of environmental protection and contributing to the integration of environmental considerations when drawing up and adopting plans and programmes in order to promote sustainable development”*; with this policy there is a tendency to match the objectives of the projects with the "strategic" objectives of environmental protection established at national and international level.

The study reported here is divided into three main phases: the first, cognitive, concerns the identification of environmental components potentially influenced by forecasts and project interventions; the second, definitive, punctually analyzes the effects resulting from the project actions taking into consideration a typical itinerary for each of the three focused areas and the connecting routes among them; the third, preventive and protective, defines all the measures that allow to mitigate the potential effects on the environmental components.

In addition, to better understand and quantify the environmental impact indicators, case studies have been reported which, although in short, give an estimate of both the effects in the current conditions and in the conditions of application of the preventive and protective interventions defined in the third phase of the study.

## Theoretical Framework

Under the changing social, economic and technological conditions of our era, the contemporary touristic sector offers more than merely leisure activities, but rather “experiences” that become the core of touristic consumption and engagement. In fact, the modern way of travelling demands exceptional services characterized by authenticity and quality, cultural sensitivity, and valued experiences that set one place apart from all others (Hargrove, 2017).

That being said, new types of tourism occur as a response to the changing incentives of tourists with an emphasis on those related to culture, ecology and the environment. Those alternative forms of tourism are characterized by the existence of a specific and dominant incentive in demand and by the development of a respective specific infrastructure in the tourist areas, designed to serve the tourists of any special form.

Both Nautical and Cultural Tourism, regard features of the concept of "alternative tourism", that are beneficial for the Puglia Region and fit in the context of the Reglports Project.

## Nautical Tourism

One of the most important maritime economic activities is the coastal and marine subsector of tourism, which represents the 33% of the total European Blue Economy. The relative European strategy is characterized by three main actions: island connectivity, tourism diversification strategies and innovative strategies for nautical tourism.

Nautical tourism, is a sector of coastal and marine tourism. In Europe, it actively involves about 36 million people whom practice boating regularly, with 6 million boats and circa 4,500 marinas employing approximately 40,000–70,000 individuals. One of the most popular destinations is the Mediterranean Sea, thus providing significant economic impact for coastal cities. Italy, with a coastal extension of about 7.500 km, is one of the main destinations for nautical tourism in the Mediterranean Sea.

Nautical tourism is a rapidly growing sector both internationally and nationally and is an opportunity to be seized for the socio-economic growth of Italy and the Puglia region.

In 2005 the Framework Program Agreement on Local Development (II supplementary act) between the Ministry of Economy and Finance, the Ministry of Productive Activities and the Puglia Region entrusted Sviluppo Italia (now the National Agency for the attraction of investments and business development), the preparation of the "Feasibility study of the regional tourism port system", as the implementing body of the "National Tourist Port Network Program - First three-year plan for the regions of Southern Italy" pursuant to CIPE Resolution 83 / 2003. In this context, in January 2008 the Convention entitled: "Implementation of certain activities to create the regional system of tourist ports" was signed.

Nautical tourism represents an intersection between sectors related to transport, travel and tourism. The interest of the Project lies within the passenger mobility area which encompasses both travel for business and leisure and tourism.

The table below shows the availability of mooring stations per kilometer of coast per region of the south Italy.

Mooring stations per kilometer of coast per region (2019)			
REGIONS	Availability of mooring stations per km of coast for each region (NBKr)	% of mooring stations per km of coast in south Italy	% of mooring stations per km of coast relative to the regions coastline
Basilicata	16.56	1.04	0.48
Campania	31.38	1.97	0.91
Calabria	6.47	0.41	0.19
<b>Puglia</b>	<b>14.34</b>	<b>0.90</b>	<b>0.42</b>
Molise	16.58	1.04	0.48
Abruzzo	21.45	1.35	0.62
Sardinia	10.15	0.64	0.29
Sicily	10.57	0.66	0.31

Table 1 Availability of mooring posts Availability of mooring posts

Accordingly, the following table shows the demand per kilometer of coast per region of the south Italy.

Demand: boats per kilometer of coast (2019)			
REGIONS	Boats per km of coast	% of nautical boats per km of coast in south	% of boats per km of coast with

		Italy with respect to average values (Italy)	respect to average values
<b>Basilicata</b>	1.62	0.24	0.08
<b>Campania</b>	32.22	4.80	1.66
<b>Calabria</b>	1.37	0.20	0.07
<b>Puglia</b>	3.60	0.54	0.19
<b>Molise</b>	1.78	0.26	0.09
<b>Abruzzo</b>	6.99	1.04	0.36
<b>Sardinia</b>	2.78	0.41	0.14
<b>Sicily</b>	3.38	0.50	0.17

Table 2 Boats Posts Demand per Km of coast

The occupancy rate of mooring stations in the three summer months in the region of Puglia is already close to 100%. Therefore, it is of fundamental importance to enhance the offer both from a qualitative and quantitative point of view of the Apulian ports and to implement adequate interventions to create a virtuous synergy between the various ports and landings. This can be achieved by creating a network, organized in areas in which crucial ports are identified (of great appeal and size, well equipped with a wealth of services and functions), which attract transit pleasure craft, especially Adriatic, and connect the sea to the territory by also enhancing the offer of the Apulian Tourist Routes (cultural, religious, and food and wine). Furthermore, all this must be done without neglecting the local and regional pleasure demand.

Such nautical data, weighted for coastal data and relative indicators, could be useful in transportation planning processes aiming to promote nautical tourism and its potential for surrounding port areas. This process can aim to increase especially the competitiveness of the southern regions.

## Cultural Tourism

The cultural heritage experiences enhance a destination’s overall brand and market appeal. Taking this into account, cultural heritage tourism provides meaningful experiences and a “sense of place” that is valued and cherished.

The notion of cultural heritage was first introduced in Italy by the Commission of Inquiry for the Protection and Enhancement of the Historical, Archaeological, Artistic and Landscape Heritage, established by the Ministry of Education’s Law No. 310 of 26 April 1964. The Commission defined cultural heritage as the set of all-important assets, tangible or intangible, that represent civilization, history, culture, artistic value, as well as aesthetic education and they belong to the community. For this reason, such objects are considered worthy of enhancement and protection (Pacelli & SicaJul, 2020).

The economic dimension of cultural tourism is also important. The most recent data of CISET<sup>1</sup> showcase that 2017 demonstrated the highest average expenditure per cultural tourist:

<i>Type of destination</i>	<i>Average expenditure per tourist (€)</i>	<i>% of total holiday expenditure</i>
Seaside	89.00	20.5
Alpine	96.50	4.8
Lacustrine	77.60	9.3
Cultural	133.00	57.7
Cultural landscape	117.00	7.7
TOTAL (on holiday)	112.00	100

Table 3 Average expenditures of Tourist at national level

According to early definitions (WTO, 1985), cultural tourism is described as “the movement of persons who satisfy the human need for diversity, tending to raise the cultural level of the individual and giving rise to new knowledge, experience and encounters”. Cultural tourism is very often associated with education, some even describing it more narrowly as educational cultural tourism.

The search for the cultural identity of a place through direct contact with the traces of antiquity, the traditions of a population, its food and wine culture and craftsmanship, place the traveler/visitor in the conditions of touching the experience of a community and they create in him an inner gratification due to the immediate perception of enrichment of his

<sup>1</sup> CISET 2018

own self. Cultural tourism practically stands on the assumption that discovering new places is in effect a way to give further impetus to one's personal growth.

With Italy being one of the leading countries in cultural and art tourism the results are reflected on tourist demand which was the main travel motivation, exceeding half of the arrivals. More specifically, in 2017, cultural tourism has amounted to 51,7% of the total, while visitors for seaside resorts amounted to 21%. That is attributed mostly to two main reasons. Firstly, the fact that “cultural” visitors lend themselves more to a short break holiday, thus tending to spend more and secondly to the more even distribution throughout the year. Furthermore, according to data from the region of Puglia, the expenses for the cultural holiday are growing in 2017. Every cultural tourist has spent on average € 133 per day, while an average seaside tourist spent € 89.



Figure 1 Daily expenses/person/tourism type

In Puglia, visitors can find enchanting landscapes surround the historic villages and cities of art. From Romanesque to Baroque, cathedrals and monuments frame the squares, in the shadow of imposing castles and noble palaces.

From the Gargano to Salento, Puglia is a treasure trove of priceless treasures and architectural wonders, such as the UNESCO sites, the museums, realms of art and archeology, where craftsmanship and the sea are also reflected.

The region has been known in past years mostly as a seaside destination. However, in recent years the focus has been shifting towards its cultural heritage. Puglia is a region of great history and as such it offers a variety of fortresses and palaces watchtowers along the coast to visit. Moreover, the UNESCO World Heritage Site, **Castel del Monte**, a majestic fort of Frederick II of Swabia, stands as a crucial attraction supplemented by the Sanctuary of San Michele Arcangelo the trulli of Alberobello, the characteristic conical drystone constructions of prehistoric times. UNESCO heritage also includes the Old Beech Woods of the Umbra Forest, a Natural World Heritage Site and the Art of dry-stone walls, recently named Intangible Heritage of Humanity.

In addition, the region is famous for its popular Italian folk dance, originally from the Salento area, the **Pizzica**. In that regard, visitors can explore cultural events across the region, being part of the local life and experience first-hand the traditions of the area.

The following chart highlights the most prevalent cultural attractions, through the results provided by visitors' questionnaires.

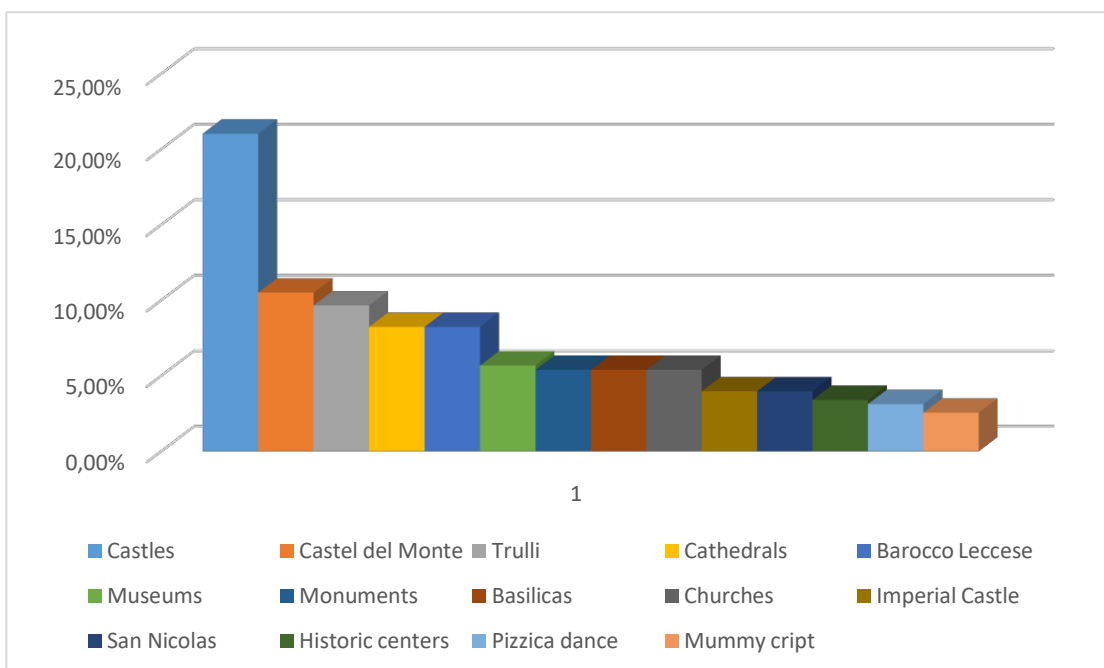


Figure 2 Regional Attractions according to visitors' preferences

Recently, due to the shift of attention towards cultural tourism the region of Puglia developed the **Strategic plan for the culture**. The most important projects and developments that will arise as part of the strategy are:



- **ECCLESIASTICAL GOODS:** For the enhancement and the expansion of the use of the assets of ecclesiastical property as an Apulian cultural asset,
- **WORKSHOPS OF DEVELOPMENT AND CREATIVITY / HISTORICAL THEATERS:** To enhance the knowledge and expand the use of the places of Apulian culture, supporting an innovative idea of museum and theater through interactive and multimedia modalities,
- **MURGIA EMBRACES MATERA:** For the enhancement and promotion of the Murgian culture and landscape heritage following the event “Matera Capitale European Culture 2019,
- **MONTI DAUNI:** For the enhancement and expansion of the use of the cultural heritage owned by the Municipalities included in the "Monti Dauni" internal area,
- **GRANDI ATTRATTORI** (*cultural and natural*): For the identification, enhancement and valorization of a limited number of natural and cultural attractions at regional and national level.

## Identification of environmental components

### Atmosphere

The characterization of the atmosphere, through the state of air quality and climatic conditions, allows to establish the environmental compatibility of any emissions, even from mobile sources, with current regulations, and of any causes of meteo-climatic disturbance with natural conditions.

In the assessment of impacts with the air matrix, the following parameters were taken into account:

- Weather conditions (wind regime, radiation, temperature, precipitation, relative humidity)
- Air quality (presence of pollutants)

The specialized literature is rich in publications that report the average values of the **main climatic parameters**; the characterizing parameters are, for example, extrapolable from different available databases, such as that of.

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
Medie Temperatura (°C)	9.5	9.6	11.8	14.5	18.8	22.9	25.5	25.7	21.9	18.2	14.5	10.8
Temperatura minima (°C)	7.3	7.2	9.1	11.6	15.4	19.6	22.2	22.4	19.1	15.7	12.1	8.7
Temperatura massima (°C)	11.7	12.1	14.7	17.4	21.4	25.7	28.4	28.7	24.6	20.8	16.8	12.9
Precipitazioni (mm)	62	57	57	49	31	23	18	18	54	65	74	67
Umidità (%)	74%	72%	72%	72%	71%	67%	63%	65%	70%	76%	76%	75%
Giorni di pioggia (g.)	8	7	7	7	4	3	2	2	6	6	7	8
Ore di sole (ore)	6.5	7.3	9.0	10.6	12.2	13.0	13.0	12.1	10.2	8.1	7.0	6.4

Table 4 Climate data of the city of Bari ([www.climate-dat.org](http://www.climate-dat.org))

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
Medie Temperatura (°C)	8.3	8.5	10.9	14	18.1	22.5	25	25	21.1	17.4	13.4	9.7
Temperatura minima (°C)	6.5	6.5	7.5	10.5	14.6	18.8	21.3	21.5	18.1	14.5	10.7	7
Temperatura massima (°C)	11.1	11.5	14.2	17.2	21.1	25.4	27.9	28.2	24	20.2	16.2	12.3
Precipitazioni (mm)	79	58	55	53	37	38	25	28	65	67	82	88
Umidità(%)	75%	73%	73%	74%	74%	71%	68%	69%	71%	77%	76%	76%
Giorni di pioggia (g.)	8	7	7	6	5	3	3	3	6	7	7	9
Ore di sole (ore)	6.0	7.0	8.6	10.4	11.9	12.9	12.8	11.9	10.0	7.8	6.6	5.9

Table 5 Climate data of the city of Termoli (www.climate-dat.org)

The data characterize the climatic conditions that are homogeneous over the years in the various provinces of Puglia and Molise with low and concentrated rainfall in the months Of October-November-December-January, and very mild temperatures with higher values naturally in the summer months.

**The state of air quality** can be deduced from numerous available databases reporting data on ozone (O<sub>3</sub>),nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), carbon monoxide (CO), PM<sub>10</sub> (set of polluting dusts highly harmful to humans, being solid and liquid particles, with a diameter of less than 10µm) and PM<sub>2.5</sub>.

INQUINANTE PM10				
NomeCentralina	Comune	Provincia	Valore	n° giorni superamento
Altamura - Via Santeramo	Altamura	Bari	29	8
Bari - Caldarola	Bari	Bari	31	12
Bari - Carbonara	Bari	Bari	23	8
Bitonto - EN01	Bitonto	Bari	21	13
Casamassima - LaPenna	Casamassima	Bari	28	11
Molfetta - Verdi	Molfetta	Bari	36	11
Monopoli - Aldo Moro	Monopoli	Bari	29	12
Brindisi -Via Taranto	Brindisi	Brindisi	33	10
Ceglie Messapica - Via Martina	Ceglie Messapic	Brindisi	25	8
Cisternino - Via Croce	Cisternino	Brindisi	26	7
Mesagne - Via Udine	Mesagne	Brindisi	44	14
Foggia - Via Rosati	Foggia	Foggia	25	12
Monte S. Angelo - Ciuffreda	Monte Sant Ange	Foggia	21	6
Arnesano - Riesci	Arnesano	Lecce	33	7
Campi S.na - I.T.C. Costa	Campi Salentina	Lecce	32	11
Galatina - I.T.C. La Porta	Galatina	Lecce	32	12
Galatina-Colacem	Galatina	Lecce	31	7
Guagnano - Villa Baldassarri	Guagnano	Lecce	24	7
Surbo- Via Croce	Surbo	Lecce	22	7
Grottaglie - Via XXV Luglio	Grottaglie	Taranto	31	8
Martina Franca - Via Stazione	Martina Franca	Taranto	38	11
Massafra -Via Frappietri	Massafra	Taranto	37	8
Statte - Ponte Wind	Statte	Taranto	31	11
Taranto - Talsano	Taranto	Taranto	29	6

Table 6 Pollutant PM<sub>10</sub> – values in µg/mc (November 2021) - Puglia (www.arpa.puglia.it)

Ultimately, the characterization of the atmosphere component in the area of the Apulian and Molise municipalities shows a good quality due to the absence of disturbing factors (absence of emissions / immissions, temperate and mild local climate).

## Water

For the quality of bathing water, reference is made to the periodic monitoring carried out by the Regions, which performs samples along the regional coast by analyzing the samples taken and returning the results in relation to the parameters of interest.

The recent results of the samples taken attest to an excellent quality of bathing water along all coasts. As further evidence of the good state of conservation of the water asset we can mention the numerous blue flags that have been assigned both to the Puglia Region and to the Molise Region. As known, the blue flag of the *beaches certifies* the quality of bathing water and beaches, it is an international recognition, a voluntary eco-label assigned to seaside resorts that comply with criteria relating to sustainable management of the territory; the blue flag indicates that the quality criteria relating to bathing water parameters and the service offered are met.

In addition, Puglia is the most maritime of the Italian peninsular regions and not only for the exceptional extension of its coasts, with which it overlooks two seas; most of the most important centers are located mainly along the coast and this is demonstrated by the strong maritime cultural identity of the entire area of interest.

## Soil

In all the areas concerned, with particular reference to the coasts and coastal areas, there is a geoenvironmental structure dominated by a widespread anthropization, with peaks in some highly frequented tourist resorts during the summer season.

## Biodiversity and landscape

The area of reference directly concerned coincides with the inland areas along the Adriatic and Ionian coasts immediately adjacent to the project tourist routes.

The vegetational, floristic, faunal and ecosystem characterization denotes a high vastness of species, very often protected and within natural parks. In addition, the high number of naturalistic settlements extends for an equally vast geographical area of reference characterized by a very accentuated diversity going from Molise to the south of Puglia, and not only for the alternation of hilly or coastal territories.

At the landscape level, the components at stake are certainly the most significant as recognized by the numerous protected sites and strong identity of the historical-cultural realities.

No less important was the provision by the Puglia Region of a *statutory and identity* document such as the Regional Territorial Landscape Plan (PPTR), which represents an essential model for the planning and programming of the territory in relation to its historical, cultural and environmental heritage. With regard to the Molise Region, the presence of the Regional Landscape-Environmental Territorial Plan (PTPAAV) is underlined, a mandatory sector plan drawn up by the Region in order to prevent urban-building interventions from altering the landscape.

### Public health

This structure concerns the state of human health in the areas covered by the project, also recalling that the World Health Organization defines health as a "state of physical, mental and social well-being and not simply the absence of diseases or infirmities", implying this definition the extension to psychological and social components.

The analysis was carried out considering:

- The possible causes of malaise such as noise, overcrowding, time of use of means of transport;
- The hygienic-environmental factors, that is, the chemical, physical, biological parameters significant from the health point of view, which are not necessarily direct agents of disease but can constitute an index of the presence of the effectagent, or in any case weaken the resistance capacity of man;
- Risk groups, i.e. groups of people who, due to their biological characteristics or specific conditions of activity, are most exposed to particular agents;
- Exposure, that is, the intensity or duration of contact between a human being and a disease agent or a hygienic-environmental factor.

The analysis of the environmental parameters that undergo alterations resulting from the project, of the environmental hygienic factors significant from the health point of view

(chemicals, microorganisms, higher organisms, energy quality, noise, vibrations) connected with the work in the project, of the territorial distribution of the resident communities, of the risk groups potentially affected by the project, allow the characterization of this component.

For the Apulian area we cannot speak of a consistent and effective state of risk for public health, that is, for the safety of individuals, the resident community, and groups at risk.

### Socio-economic activities

The component of socio-economic activities in an area is certainly influenced by the demographic structure, the economic structure and the social order.

With regard to the *demographic structure*, the state of the population settled in the areas in which the project interferes is the current result of evolutionary processes that took place in the past, but also at the base of future ones, affecting above all the possible activation of incoming or outgoing movements.

As a rule, migratory movements are induced by the creation of new jobs: if this happens in the area, it can create an immigration of labor and possibly of families from outside; if, on the other are created in a nearby area but with unacceptable commuting conditions, an emigration of individuals and possibly families may take place.

It is undoubtedly more appropriate, within this project, to evaluate the demographic trend related to specific periods (and therefore linked to tourism) in order to search, more easily, the standard of potential users of the services offered.

In any case, they produce changes in the quantities of the present population, in its composition, in its functional structure, and, therefore, the natural tendencies of its evolutionary dynamics are altered.

The *economic structure* of the areas covered by the project is the overall structure of the production structures, the labor market, the level and distribution of income and tax revenues, the market of soils and real estate (especially residential) and the demands and social tensions connected to all this, in a dynamic and evolutionary framework.

By *social structure* we mean the structure of the community affected by the intervention and its evolutionary tendencies, the elements of its cohesion, its culture, its attitude to change, its attitude towards a possible migratory movement induced by the intervention itself, and in particular the disposition of the different interest groups towards it.

In the case of the project, migratory flows and the variability of these flows is the main component of the entire environmental impact study since the itineraries and areas of interest

are the result of a careful market analysis related to the tastes and trends of boaters who are preparing to discover the regional territory.

### Demographic structure

The demographic trend of the territories directly or indirectly involved in the project activities is, for the purposes of this study, a relatively marginal component as it has very little influence on both the environmental impact and the logistics related to the tourist itineraries.

In any case, and by way of example, the demographic trend of the Puglia Region appears to be descending with a constant decrease in the population present between the years 2014-2019; only in 2019 there was a decrease of 22,223 units with a decrease of 0.56% compared to the previous year.

BILANCIO DEMOGRAFICO (ANNO 2019)		TREND POPOLAZIONE		
<b>Popolazione al 1 gen.</b>	3.975.528	Anno	Popolazione (N.)	Variazione % su anno prec.
Nati	27.586	2014	4.090.105	-
Morti	39.140	2015	4.077.166	-0,32
<b>Saldo naturale<sup>[1]</sup></b>	<b>-11.554</b>	2016	4.063.888	-0,33
Iscritti	69.336	2017	4.048.242	-0,39
Cancellati	80.005	2018	3.975.528	-1,80
<b>Saldo Migratorio<sup>[2]</sup></b>	<b>-10.669</b>	2019	3.953.305	-0,56
<b>Saldo Totale<sup>[3]</sup></b>	<b>-22.223</b>	Variazione % Media Annua (2014/2019): <b>-0,68</b>		
<b>Popolazione al 31° dic.</b>	3.953.305	Variazione % Media Annua (2016/2019): <b>-0,92</b>		

Table 7 Demographic balance (2019) – Puglia (www.regioneuglia.it)

### Economic structure

In the economic structures of the Puglia Region and the Molise Region, the tourism sector is predominant, with all the activities and branches related to it.

If for the Puglia Region this is a consolidated figure in the last decade, for the Molise Region this sector is in full expansion; for example, thanks also to the change in the behavior of Italian tourists, based on the perception of safety, in 2020 Molise recorded a tourist increase of 150%. Moreover, since 2019, for the first time tourism with city destinations has equaled the purely marine one, especially thanks to a diffusion and publicity of the varied offer of the Molise territory.

It is very important to remember that about a quarter of leisure or leisure holidays are characterized by having more places of interest (17.4% for two destinations and 5.7% for at least three).

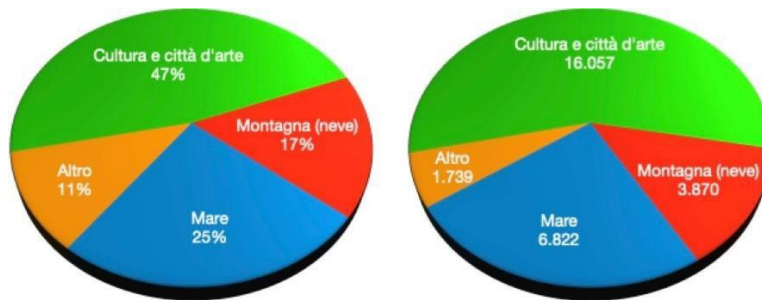


Figure 3 Evolution of national demand

The tourist offer specifically linked to coastal territories, in fact, is to be completed and enriched by food and wine resources linked to typical products (oil and wine above all) and to the authenticity of the food culture that characterizes each destination.

In the light of the project and the tourist itineraries it does not seem superfluous to underline the offer of the territory, composed of unrepeatable environmental, historical-architectural values and the natural vocation of the population to hospitality; these elements can be considered as factors of endogenous advantage, around which the international image of the Puglia region has been successfully built, for example.

In the following considerations we want to highlight the tourist trend of the regions with particular attention to the phenomenon of boaters.

In Puglia, as can be seen from the graph shown, the overall incoming grew by 23% from 2015 to 2019, the international one only even by 60%; there was a +44% of international overnight stays and +15% overall.

At the absolute level, there were 15.5 million presences in 2019 (with an increase of 2% compared to the previous year), 1.2 million arrivals from abroad (+11.5%) and 3 million arrivals from Italy (+0.1%).

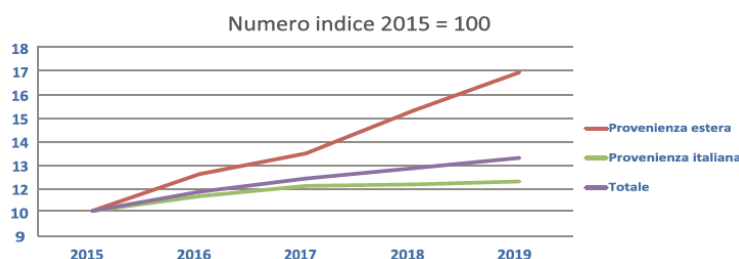


Figure 4 Trend of arrivals in Puglia



These data show very clearly the centrality of the tourism sector in the regional economy so as to impact for about 6.5 billion on final consumption, 9 billion in terms of added value and 135,000 employees directly or indirectly involved in the tourism chain formed by 52,000 companies.

It is also interesting to evaluate the fluctuations in arrivals and consequently in overnight stays in Puglia; this clearly confirms the tourist seasonality of the region all the more accentuated by the difference between Italian and foreign overnight stays spread over the entire calendar year.

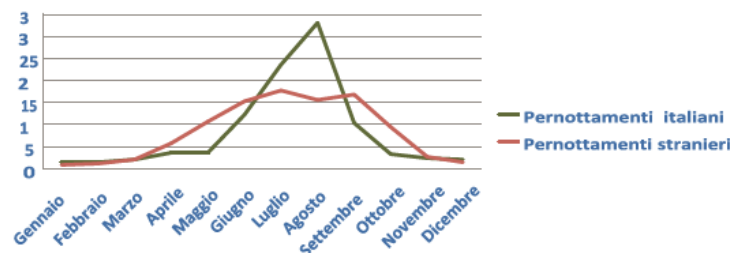


Figure 5 % monthly share of overnight stays in Puglia (2019)

With regard to this structure and with a view to defining the potential users of the services offered, it is useful to compare the age groups of tourists who reach the region.



Figure 6 Age of tourists

The overall figure of tourism in Termoli (including hotels and non-hotel facilities) is attested to 132,028 presences of travelers; arrivals in 2020 were 37,021 of which 95% were Italian nationals.

In order to facilitate the assessment of the environmental impacts of such projects, it is necessary to briefly describe the **phenomenon of nautical tourism**.

At present, the sector is growing strongly both internationally and nationally and is a concrete opportunity to be seized for the socio-economic growth of Italy;

With particular reference to Puglia, this phenomenon is also demonstrated by the existence, as of 9/2019, of 13,656 points divided between marinas, tourist landings and mooring points.

The analysis of the context shows that the destination Puglia can be characterized according to a modality attributable to the great nautical itineraries with regard to the Adriatic coast and for the boating of the medium and short routes on the Ionian coast; moreover, during the summer the occupancy rate of berths often reaches 100%.

The downside of these data consists in the purely sedentary nature of the demand met by nautical tourism: only 5% of the total berths are intended for transit.

**Despite the need and the direct convenience of increasing the number of berths not intended for local tourists or residents, this figure is, for the purpose of this study, an excellent starting point for assessing the scope of potential users of the project and therefore of the tourist itineraries. It can in fact be estimated as 50% of the 5% previously reported, therefore corresponding to about 270 daily boaters, corresponding to about 1000 people, within the entire Puglia Region in the period of maximum presence, to be spread along the entire coast.**

**The data, compared to the vastness of the Apulian territory, is decidedly small especially when compared with the number and trend of arrivals described at the beginning of the paragraph.**

### Social structure

As far as Puglia is concerned, the current social structure is typical of coastal areas where activities are concentrated especially in the summer, consequently also generating a social offer oriented in that period. In Molise, the phenomenon of coastal tourism is also flanked by that of the autumn and winter seasons due to the presence of renowned hill and mountain resorts.

In recent years, with strong representation and will of the regional authorities, both the significant improvement of the infrastructural endowment for the social, the associations and the spread of collateral recreational activities have led to a change in trend compared to the years before 2010.

## Potential significant effects of the project on the environment

### Project actions

In order to identify the likely effects that the project may have on the environment, an overview of the specific actions relating only to the operational phase must be made in advance.

They can be summarised as follows:

- Consumption of water, energy and waste resources
- Local governance
- Direct and induced vehicular traffic
- Tourist activities and related flows
- Waste generation
- Cleaning, safety and maintenance activities

### Environmental components

As already exhaustively listed in the previous chapter, the environmental components taken as the basis of the assessment are those dictated by the current legislation on the subject.

They can be summarized as follows:

C1) Atmosphere

C2) Water

C3) Soil

C4) Biodiversity and landscape

C5) Public Greeting

C6) Socio-economic activities

### Potential effect factors on the environment

In relation to the type of project and related actions, and to the targets represented by the environmental components, the potential factors of effects on the environment relating to the operating phase alone are identified, summarized as follows:

ID	Potential effect
E1	<b>Alteration of the quality of water due to the introduction of hydrocarbons, waste water from moving and/or stationary vessels:</b> due to possible relapse into the sea of harmful substances arising from maintenance and washing of boats
E2	<b>Disturbance to the presence of fauna:</b> linked to phenomena of noise and light pollution that represent a possible disturbing factor to the presence of fauna
E3	<b>Changes in vegetation and flora:</b> linked to the eventualities that the works could make changes to the existing vegetation and flora
E4	<b>Presence of pollutants for the health of users:</b> essentially linked to the possible presence of pollutants and / or dust.
E5	<b>Effects on the mental well-being of users (stress):</b> linked to the possible improvement of all tourist-commercial activities and services, which positively influence the psychic conditions of the users.
E6	<b>Variation in the enjoyment of yachting:</b> linked to the possible modification of maritime works that could determine the increase in the enjoyment of yachting.
E7	<b>Direct and induced tourist flow:</b> due to the construction of structures capable of determining an increase in the flow
E8	<b>Economic repercussions in terms of income and employment:</b> due to the possible increase in tourist presences that generate economic benefits both in terms of income and in terms of employment.
E9	<b>Improvement of commercial activities:</b> linked to the diversification of possible activities in the area.
E10	<b>Accident risk:</b> related to the safety of people and / or things.
E11	<b>Alteration of the scenic (visual) landscape structure:</b> linked to the possible variation of the landscape component and its biodiversity.
E12	<b>Modification of traffic flows:</b> linked to a possible increase in traffic flows as a result of the implementation of interventions capable of exerting strong public attraction.
E13	<b>Increase in waste production:</b> as a result of the interventions carried out and the presence of users in the area.
E14	<b>Consumption of energy resources:</b> linked to the presence of the public user of the services offered.

Table 8 Potential effects

### Correlation between effect factors and environmental components

It is necessary to correlate the environmental components with the identified factors of potential effects, to take into account their global influence and overall influence. In the present case, 4 levels of correlation (A, B, C, o) were considered where:

A = high flu

B = average influence

C = low flu

o = null influence

ID	Correlation levels (A,B,C,o)	C1	C2	C3	C4	C5	C6
E1	Alteration of water quality	o	C	o	o	C	o
E2	Disturbance to wildlife presences	o	o	o	o	o	o
E3	Changes in vegetation and flora	o	o	o	C	o	o
E4	Presence of pollutants for the health of users	o	o	o	o	C	o
E5	Effects on the psychic well-being of users (stress)	o	o	o	o	A	A
E6	Change in yachting use	o	B	o	o	o	A
E7	Direct and induced tourist flow	o	o	o	o	A	A
E8	Economic impact in terms of income and employment	o	o	o	o	A	A
E9	Improvement of commercial activities	o	o	o	o	A	A
E10	Accident risk	o	o	o	o	C	o
E11	Alteration of the scenic (visual) landscape structure	o	o	o	C	o	o
E12	Modification of traffic flows	C	o	o	o	C	o
E13	Increase in waste production	C	o	o	o	C	o
E14	Consumption of energy resources	o	o	o	o	o	B

Table 9 Correlation levels

### Effects of the project on individual environmental components

This phase represents the fulcrum of the evaluation presentation and we move on to identify the effects of the project on the individual environmental components, on the basis of the correlations attributed, the project actions and the characterization of the components made in the previous paragraphs, carrying out a qualitative analysis integrated by quantitative considerations.

## **ATMOSPHERE**

The typology of the project already made it possible to exclude a priori significant effects or conditioning on the atmosphere at the air level, and the considerations carried out have confirmed this.

In fact, among the possible factors of effects hypothesized, it is easy to deduce that none of them has any impact compared to those already present and due to the presence, more or less, seasonal tourists.

The only effects directly related to these components are the modification of traffic flows (E12) and the production of waste (E13).

## **WATER**

During the operation phase of the activities envisaged by the project, no interventions will be planned that will modify the characteristic hydrological and hydrogeological characteristics and therefore there will be no impact on the groundwater component in terms of resource use.

The component is potentially influenced by the following effects: alteration of water quality (E1), the presence of pollutants (E4) and the variation of recreational use (E6) but considering the real operating conditions, the project has practically no impact.

## **SOIL**

In light of the characteristics of the project, in-depth geological studies are not required to bring out the characteristics of the soils and their compatibility since this component is not affected in the slightest; moreover, all the itineraries are, at present, definitively already completed and devoid of any need for intervention and therefore this type of component cannot be considered influential.

The potential effects on this component are due to changes in vegetation and flora (E3) and the presence of pollutants (E4) but, by design, no land consumption is expected and all interventions will not alter in any way the surface hydrology, nor the soil and the subsoil.

The vegetal soil present on site will be entirely preserved as well as the flora and on the existing vegetation and in particular for all the paths the permeability will be guaranteed without any alteration of the morphology of the place.

## **BIODIVERSITY AND LANDSCAPE**

This component plays a fundamental role in this environmental assessment as the main protagonist of the project interventions.

The areas affected by the project will not undergo substantial changes, much less negative, of the original landscape structure; changes in vegetation and flora (E3) are null and void.

For the aesthetic-visual aspect it should be noted that the planned works do not alter in any way the current scenario, indeed all the planned routes have as their objective, if anything, to enhance areas of considerable public and naturalistic interest. Moreover, particular attention will be paid to the respect of the characteristics of the sites also with regard to the trees and in general of all the vegetation variety.

The impact on this component is to be considered insignificant.

### **PUBLIC HEALTH**

It can be said with certainty that the operation phase of the project will not affect specific aspects of this component except as a natural consequence of the natural presence of users within the territory, regardless of their interest in tourist itineraries.

If anything, given the geographical positioning of the routes themselves (hinterland) it will make it possible to decongest the vehicular flow by reversing, in part, from the hinterland to the coastal strip during the summer periods; the effect of the modification of traffic flows (E12) is therefore positive in relation to current conditions.

Considering also, the small, in relation to the totality of the presences in the region, number of users of the services in the project, mobility and side effects (noise, risk and pollution) are to be considered negligible for the purpose of defining environmental impacts.

Finally, bearing in mind the possible compensatory and mitigation effects that can be implemented at the same time as the start of the activities envisaged by the project (as better described below), the overall effect on this component can be defined as even positive.

### **SOCIO-ECONOMIC ACTIVITIES**

It is without a doubt the most important component for the evaluation carried out, and the one that is most affected by the proposed project and that generates the greatest positive effect on it.

Bearing in mind the numerous tourist-commercial settlements and the consequent generation of income and employment (direct and induced) linked to tourist use, the project generates certain positive effects resulting from the possible increase in tourist flow (E7), for the economic increase in terms of income and employment (E8), resulting from the development of maritime connections (possibly public). Another significant positive effect may be represented by the development of market activities directly related to the activities envisaged by the tourist routes.

Ultimately, during the operation phase, there is no doubt that the project will determine a direct benefit on local economies and in particular on the economic activities of the areas, greatly benefiting both the tourism and food and wine sectors. That observation is very pertinent. This is because most of the proposed routes will allow the lightening of the pressure on the Apulian and Molise coast during daylight hours; in fact, to enjoy the warm Mediterranean sun and cool off in the Ionian and Adriatic waters in the summer both tourists and the local population move from the hinterland to the coast. The project in question reverses this phenomenon, as mentioned in daylight hours, considering that it could potentially generate benefits even if moderate to the economic activities of the hinterland in terms of food and wine consumption, purchases of gadgets rather than typical products rather than shopping.

The large-scale development of the phenomenon of cultural tourism inextricably linked to the present project will also increase the presence of tourists, hotels and non-hotel companies and the demand for catering, which will determine as a logical consequence an increase in the turnover induced (trade, crafts, services, etc.) and also in the number of employees.

### Case studies

To better understand the characteristics and effects of the project and to quantify numerically the variables that come into play in the definition of risk levels, 3 of the 17 paths proposed (one for each macro-area) by "REGLPORTE – Nautical Tourism Development and Promotion of Regional Ports" have been chosen, by way of example and not exhaustively:

- "*Along the serre salentine*" path that develops from the hinterland of the city of **Gallipoli** for a total length of 67.80 km passing through the municipalities of **Cutrofiano, Supersano, Ruffano, Taurisano and Casarano**;
- "*Along the Adriatic*" route that develops along the Adriatic coast for a length of 53.80 km from the municipality of **Giovinazzo** to Margherita **di Savoia** through the municipalities of **Molfetta, Bisceglie, Trani, Molfetta**;
- "*Through Islands and Trabocchi*" route that develops mainly along the Adriatic coast for a length of 90.00 km through the municipalities of **Vasto, Fossacesia, Rocca San Giovanni and Ortona**.



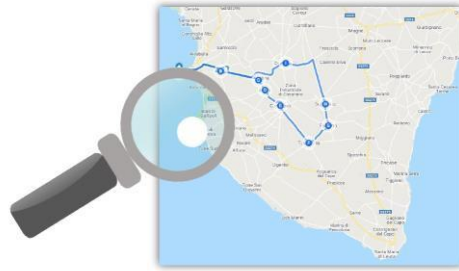


Figure 7 Path type "Along the serre salentine"

The study of the environmental impact of the typical path allows easy to identify macro areas of *observation*, namely:

- Consumption of primary resources (water and energy)
- Direct and induced traffic
- Tourist activities and flows
- Waste generation
- Cleaning, safety and maintenance

The indicator examined for the estimation of the environmental impact, considered prevalent and more incisive, is the **emission of pollutants into** the atmosphere for the use of means of transport.

The examination was carried out considering as a working hypothesis the use of light means of transport and compliant with current legislation on emissions, in particular the Euro 6 standard according to which the following limits are set:

- Maximum permitted CO of 0.5 g/km for diesel vehicles and 1 g/km for petrol vehicles;
- Maximum permissible NOx of 0.08 g/km for diesel vehicles and 0.06 g/km for petrol vehicles;
- Maximum permissible PM10 of 0.005 g/km for both types of vehicles.

Starting from these data and evaluating the results obtained as the type of fuel (petrol, diesel or electricity) and the type of transport change, the different impacts for the selected type route can be easily obtained, as visible in the following table.

**ALONG THE SERRE SALENTINE – 67,80 km**

Type of transport	CO2 g/km	CO2 g/pers	CO2 Tot	Nox g/km	Nox g/pers	Nox Tot	PM g/km	PM g/pers	PM Tot
PETROL MACHINE	0,50	67,80	339	0,06	0,81	4,07	0	0,06	0,31
DIESEL MACHINE	1	135,60	678	0,08	1,08	5,42	0	0,06	0,31
MINIBUS DIESEL	1	135,60	678	0,08	1,08	5,42	0	0,06	0,31
ELECTRIC VEHICLE	0	0	0	0	0	0	-	-	-
BIKE/FEET	0	0	0	0	0	0	-	-	-

**ALONG THE ADRIATIC – 53.80 km**

Type of transport	CO2 g/km	CO2 g/pers	CO2 Tot	Nox g/km	Nox g/pers	Nox Tot	PM g/km	PM g/pers	PM Tot
PETROL MACHINE	0,50	53,80	269,00	0,06	0,81	3,23	0,00	0,06	0,24
DIESEL MACHINE	1,00	107,60	538,00	0,08	1,08	4,30	0,00	0,06	0,24
MINIBUS DIESEL	1,00	107,60	538,00	0,08	1,08	4,30	0,00	0,06	0,24
ELECTRIC VEHICLE	0,00	0,00	0,00	0,00	0,00	0,00	-	-	-
BIKE/FEET	0,00	0,00	0,00	0,00	0,00	0,00	-	-	-

**THROUGH ISLAND AND TRABOCCHI – 90,00 km**

Type of transport	CO2 g/km	CO2 g/pers	CO2 Tot	Nox g/km	Nox g/pers	Nox Tot	PM g/km	PM g/pers	PM Tot
PETROL MACHINE	0,50	90,00	450,00	0,06	0,81	5,40	0,00	0,06	0,41
DIESEL MACHINE	1,00	180,00	900,00	0,08	1,08	7,20	0,00	0,06	0,41
MINIBUS DIESEL	1,00	180,00	900,00	0,08	1,08	7,20	0,00	0,06	0,41
ELECTRIC VEHICLE	0,00	0,00	0,00	0,00	0,00	0,00	-	-	-
BIKE/FEET	0,00	0,00	0,00	0,00	0,00	0,00	-	-	-

Table 10 Pollutants depending on the type of transport – Standard routes 1/2

The comparison highlights the negative effects related to the project under consideration but at the same time allows to implement a series of interventions to mitigate the effects.

A similar criterion may apply to the links between the three areas of study included in the project, which are desirable for an integrated use and a multi-day experience of the territories.

The hypothesized routes are Gallipoli-Giovinazzo (km213) and Vasto-Margherita di Savoia (km170)

<b>GALLIPOLI - GIOVINAZZO – 213,00 km</b>									
Type of transport	CO <sub>2</sub> g/km	CO <sub>2</sub> g/pers	CO <sub>2</sub> Tot	Nox g/km	Nox g/pers	Nox Tot	PM g/km	PM g/pers	PM Tot
PETROL MACHINE	0,50	213,00	450,00	0,06	1,91	12,78	0,00	0,06	0,97
DIESEL MACHINE	1,00	426,00 am	2130,00	0,08	2,55	17,04	0,00	0,14	0,97
MINIBUS DIESEL	1,00	426,00 am	2130,00	0,08	2,55	17,04	0,00	0,14	0,97
ELECTRIC VEHICLE	0,00	0,00	0,00	0,00	0,00	0,00	-	-	-
BIKE/FEET	0,00	0,00	0,00	0,00	0,00	0,00	-	-	-

<b>VASTO – MARGHERITA DI SAVOIA – 170,00 km</b>									
Type of transport	CO <sub>2</sub> g/km	CO <sub>2</sub> g/pers	CO <sub>2</sub> Tot	Nox g/km	Nox g/pers	Nox Tot	PM g/km	PM g/pers	PM Tot
PETROL MACHINE	0,50	169,20	846,00 am	0,11	1,52	10,15	0,00	1,13	0,77
DIESEL MACHINE	1,00	338,40	1692,00	0,15	2,03	13,53	0,00	1,13	0,77
MINIBUS DIESEL	1,00	338,40	1692,00	0,15	2,03	13,53	0,00	1,13	0,77
ELECTRIC VEHICLE	0,00	0,00	0,00	0,00	0,00	0,00	-	-	-
BIKE/FEET	0,00	0,00	0,00	0,00	0,00	0,00	-	-	-

Table 11 Pollutants depending on the type of transport – Standard routes 2/2

More specifically, the interventions, as better specified in the following chapter, will have to encourage the use of electric mobility with the implementation of a network of charging

points, the use of rental services(*car or bike sharing*) and / or collective transport and no less important, the enhancement, advertising and signaling of pedestrian paths integrated with the itineraries of considerable scenic beauty.

## Possible measures to avoid or prevent adverse effects on the environment

Even if the analyses carried out previously have excluded significant negative effects that the project may cause on the environment, it is still considered useful to indicate and describe some measures that can be taken to avoid and / or prevent negative effects and better ensure the overall sustainability of the project.

In Italy, the transport sector is responsible for 49% of polluting emissions and most of them derive directly from **road traffic**.

The use of services of a public nature, the phenomenon of *car sharing*, the rental of bikes and motorcycles but also the enhancement, signaling and advertising of pedestrian routes and itineraries of landscape value are just some examples of what is called sustainable **mobility**, understood as the set of virtuous practices that mitigates environmental impacts by significantly reducing traffic, improving air quality, urban degradation and global energy consumption.

In light of the considerations of the previous paragraphs, these activities are well reconciled, for example, with the concept of **slow tourism** that aims at a more complete sustainability of the entire journey, starting from the type of means of transport up to the need to enjoy the entire landscape and nature from the starting point to the arrival at the destination.

The project, with the specificity of users such as boaters and given the nature of the movements, would allow to encourage initiatives of a municipal or inter-municipal nature of organization and planning of collective movements with means of transport (bicycles, motorcycles, cars, vans) non-polluting plug-in hybrid power or electric for travel to and from the coast.

In addition, to ensure a further enhancement of the landscape and meet the phenomenon of **bike tourism**, the creation of cycle paths and the publicity of the CY.RO project is foreseeable. N.MED. – Mediterranean cycle network.

Through these measures, the benefit consequently extends to socio-economic activities allowing, in fact, to decentralize and differentiate the offer of the territories close to the coast by favoring services related to cultural tourism and food and wine.

In the same way, **maritime traffic** represents an important and growing share of greenhouse gas emissions produced in our country and ports, often inserted in densely populated contexts, cause impacts related to the pollution of ships on the quay, noise and vibrations of all port activities.

It is therefore necessary to identify a series of activities to be implemented to ensure that these impacts are overcome and generate new development opportunities in this sector and in this historical phase.

The most easily practicable solution is the design of technologies by means of which it is possible to provide energy to the boats during the stop in port, through an electrical connection with the mainland, allowing the zeroing of pollution and emissions by the boats in port, defined as **cold ironing**.

This system consists in connecting the boat to the quay by means of an electric cable, comparable to an extension coming from the ground, in order to provide the necessary electrical energy and allow the on-board engines to stop.

## CONCLUSIONS

For the peculiarities of the project, and in particular:

the sectoral impact, focused on transport, a sector oriented towards the strong reduction of impacts thanks to the acceleration of technological innovation, the development of collective transport systems and infrastructures in the direction of soft mobility and the growing integration between services and carriers;

the lowest percentage of impact on the cumulation of effects with the total traffic generated by the territory;

Its extension and territorial and temporal dilution therefore on the total extent of the other factors with respect to the direct impact on the Points of Interest (POI), i.e. historical and cultural heritage and ecosystems;

minimal interference with other Projects and Programs due to the absence of new physical works planned by RegIPorts;

the coordination and optimization of services, the training of operators also in the direction of environmental sustainability being the primary purpose of the project itself;

**we can objectively conclude that the Project will not cause a significant impact.**

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