



DELIVERABLE 4.6.1:

REPORT ON SUSTAINABLE CRUISE DESTINATION TOWARDS CULTURAL HERITAGE-

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HERIT-DATA - 4MED-123-051

October 2021

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1. Introduction

HERIT-DATA, “Sustainable Heritage Management towards Mass Tourism Impact thanks to a holistic use of Big and Open Data”, project funded by the Interreg Med Programme, aims to reduce the impact of human activities (tourism-related ones) on cultural heritage, with a special focus on 2 kind of cultural destinations that can benefit from and be affected by mass tourism: Old towns and Sites of particular cultural heritage or archaeological interest for visitors, including UNESCO World Heritage Sites, so present in the MED territories.

HERIT-DATA consortium is composed of 13 partners from 7 countries (Italy, Greece, Portugal, Spain, France, Croatia and Bosnia-Herzegovina). This partnership is working on the development of plans for sustainable and responsible tourism management towards cultural heritage in MED regions, in particular by taking advantage of technology and innovation in management tools (Smart Cities), as well as other policy and social measures.

The partners will develop, test and transfer methodologies and solutions (Models, Strategy, Artificial Intelligence & Big Data based-on platform and App, etc.) that will allow to analyse and manage tourism flows and their impact on cultural heritage taking into account the ICMZ recommendations. In particular, 5 pilots will be developed in: Tuscany, Western Greece, Occitanie, Valencia and Dubrovnik.

As a starting point for the project, a Benchmarking study¹ was carried out by Turisme Comunitat Valenciana to analyse different experiences of tourist saturation in different European cities, with a special focus on the measures introduced to improve the management of tourist flows using information technology and Big Data.

Cruise traffic has grown very dramatically, increasing passenger numbers by more than 60% in the last decade, from 17.8 million cruise passengers worldwide in 2009 to **29.7 million in 2019**. In addition, the cruise sector has continued with a clear trend towards segmentation. This segmentation consists of the differentiation of the services offered both on board and ashore, the use of different types of ships with different equipment, as well as different itineraries, adapting the service offer to different target customers. In order to reach different types of customers, cruise lines, or specific brands of large corporations, offer and commercialise their presence in one or more of the main segments, such as contemporary, premium and luxury cruises. The cruise tourism sector is characterised by its, with traffic concentrated in certain months of the year. Furthermore, the cruise market is clearly dominated by an **"oligopolistic" concentration of cruise companies and ports**, in which a small number of ports account for a high percentage of inbound and outbound passengers. In contrast, a large number are available for the port of call.

¹ “Facing the Overtourism Challenge in Cultural And Natural Heritage Sites using Open/Big Data”

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According to CLIA data, the average **age of cruise passengers in Europe is 49 years old** on average and the average **length of a cruise is around 9 days**. The average length of **stay in port is 13.08 hours** (according to the data analysed in this report). Therefore, in view of the peculiarities of this type of tourism, in which destinations receive a significantly high volume of cruise passengers at each call and where the time of their visit is relatively limited, both ports and destinations are obliged to establish measures to improve the management of these passenger flows.

This deliverable corresponds to the activity 4.6 that defines a set of mechanisms for the evaluation of criteria and indicators for a Sustainable Cruise Destination towards cultural heritage. For this purpose, this deliverable will reply questions such as:

- ✚ What is a sustainable cruise destination?
- ✚ How can a cruise destination preserve its most visited cultural heritage sites and promote the discovery of less well-known sites?
- ✚ How are cruise destinations working to promote sustainability?
- ✚ What is the relationship between smart and sustainability in cities and tourist destinations? Can we talk about a sustainable smart cruise destination? (What is it? What does it need? What is it part of?)
- ✚ Is cruise tourism really the cause of overtourism in some destinations?

Answering the abovementioned questions required leveraging the knowledge gained from WP3 and 4 of HERIT-DATA and projects such as SIROCCO and CO-EVOLVE.

The document covers three main objectives:

1. Firstly, it seeks to conceptualize what is meant by a **sustainable cruise destination**, how it is integrated into a broader strategy for the sustainable tourist destination and what the link is with the based on the results of the study of several cruise destinations in Europe that are noted for suffering from overtourism.
2. Secondly, the aim of the study is to identify the configuration in terms of the structure of cruise tourism, determine whether this activity is the cause of overtourism, and which **solutions or actions targeted for ensuring the sustainability of tourism or smart destinations** that have been implemented or are planned to be developed. To achieve this second objective, data were collected from secondary sources and traffic evolution data were requested with the aim of performing an in-depth segmented analysis of cruise ship calls in the destinations.
3. Finally, the document provides **recommendations that can contribute to the sustainability of cruise tourism in Mediterranean destinations**, emphasizing the preservation of cultural heritage and what can be done to ensure it does not exacerbate the problems of overtourism that destinations may be facing.

A combined methodology was used to carry out this work. Establishing the conceptual framework required the selection, comparison and analysis of different national and international bibliographic sources, which were selected on the basis of their relevance to the subject and quality. A sample of cruise ports in Europe were then requested to provide information on their port calls in order to carry out a segmented analysis of traffic patterns. Information was then compiled on the measures taken in the selected destinations to reduce the negative impact of cruise traffic. Lastly, in view of the progress made by these destinations, recommendations for cruise destinations are presented, which can guide them towards adopting strategies that foster the sustainability of their destinations.

This deliverable contributes to the output orientated to the definition of criteria and suggested indicators for Sustainable Cruise Destination towards cultural heritage. This will allow to contribute to standards by taking into account the needs, opportunities and risks around massive crowd flows from cruisers planning to visit cultural heritage sites.

Finally, as the report was written in 2021 during the COVID19 pandemic, the authors consider of interest to include a specific section describing the measures developed in each cruise destination to address the great challenge caused by the pandemic for the restart of the cruise activity.

2. Cruise Destination

This chapter defines basic concepts to understand the scope of management in cruise destinations, preserving their cultural heritage and therefore contributing to their sustainability. Different elements that comprise it are analysed where the principles of sustainability are reinforced, mentioning the critical aspects that must be considered for its governance. Finally, this section refers to the new trends that are leading the cruise industry with special emphasis on the management of technologies and the integration of data to respond growing demands for sustainability with a clear focus on cruise passenger satisfaction and residents in smart destinations.

2.1. What do we understand for cruise destination?

Cruise destination could be defined as a geographical area where cruise passengers decide to visit for a period of time, during the ship call or before or after boarding or disembarking it.

Cruise destination has the following characteristics:

1. It is a unit or entity that encompasses various tourist resources and infrastructures, forming a value chain (system) with its actors.
2. It may or may not have the same limits as the administrative management of the territory where the cruise ship dock. There is often a tourist hinterland that invites to visit other attractions. This means that different organizations have to collaborate.
3. Cruise passengers perceive their vacations as a whole experience and, therefore, the services and products of the cruise ship, as well as the experiences at each level of the cruise destinations, must seek passenger satisfaction.
4. According to Bigné, Font and Andreu (2000: 30) "destinations are combinations of tourist products, which offer an integrated experience for tourists", also we can say for cruise passenger. Traditionally, destinations were viewed as a geographically well-defined area, such as a country, an island, or a city. However, it is increasingly recognized that a destination can be a perceived concept, that means, it can be interpreted subjectively by consumers, based on their travel itinerary, cultural background, reason for visit, level of education, and previous experience.

Cruise destinations are consolidated on the basis of pre-existing tourist destinations in most cases. This means, in most cases prior to the establishment of a cruise destination, the destination or its hinterland had geographical characteristics or a recognized tourist vocation, such as Urban, Rural, Coastal and Insular and Cultural. Aforementioned contributes that cruise tourism does not create per se an overtourism situation in the

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destinations, however, it is possible that mismanagement of it may accentuate the pre-existing problems in some of them.

According to Ejarque (2003: 27), "A tourist destination is made up of a set of components, a sum of natural and cultural or artistic attractions, and services". But it is not enough with the presence of natural resources or cultural heritage, it is necessary to know how to take advantage of the attractiveness of these destinations to induce travellers to make the necessary efforts to move around, as well as to manage these attractions so that those less known are visited and the popular ones are not saturated.

Figure 1: Basic Elements of a destination

Basic elements that make up a destination are the following (Rivas:2016):



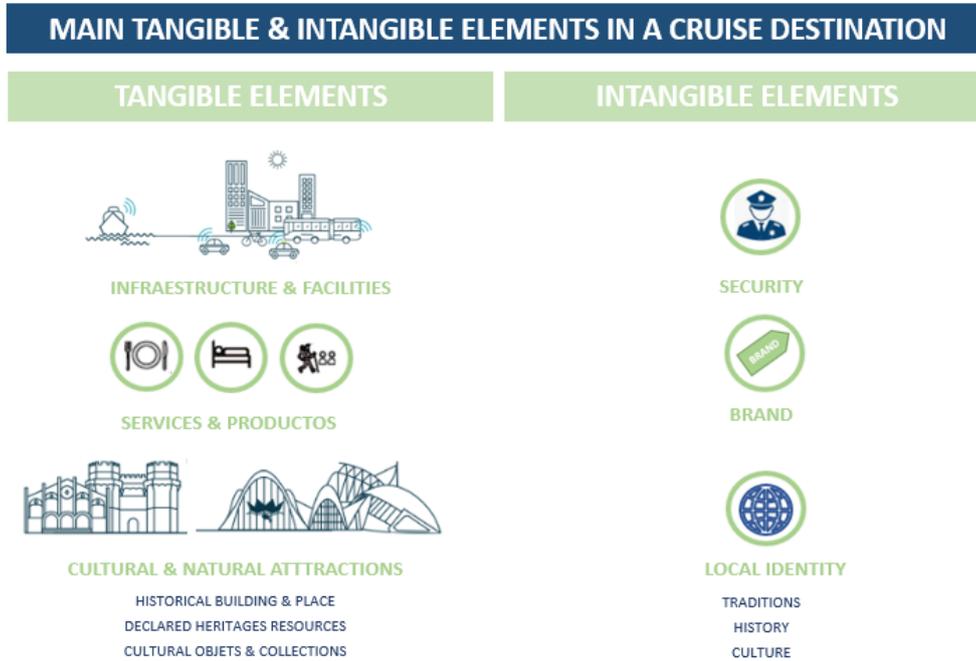
Other components that determine a destination:

Geographical environment | Political and administrative | Economic | Cultural and social

Source: Based on Rivas, 2016

Komppula (2001) posited tourism core products are the collection of tangible and intangible features where all of the features related to activities that tourists join or participate during their visit at the particular tourism destination. In this sense, tangible features refer to physical elements like natural resources or infrastructure while intangible features relate to hospitality, services, communication between tourist and local resident and brand. That being said we sum up that a cruise destination is made up of tangible and intangible elements, as identified in the Figure 2.

Figure 2 Main tangible and intangible elements in a cruise destination



Source: Own elaboration

2.2. Sustainable development of cruise tourism

Tourism is in general characterized by its dynamism and rapid expansion that puts increasing pressure on the environment, especially in some fragile areas as in coastal areas, generating impacts that alter territorial conditions and thereby deteriorate the destination. Turning to the detail, cruise tourism is the fastest growing segment of leisure tourism in the last decades. With its growth has come concern about the impact of cruise tourism on coastal environments, local economies, and on the sociocultural nature of port communities (Klein, 2011). There is no doubt that this industry is facilitating the improvement in the tourism potential, infrastructure, and the social development of a large number of Mediterranean port cities (Rosa-Jiménez, 2018). However, the increase in cruise activity in said port cities is overwhelming historic centres and tourist resources with implications in traffic congestion (Rosa-Jiménez, 2018).

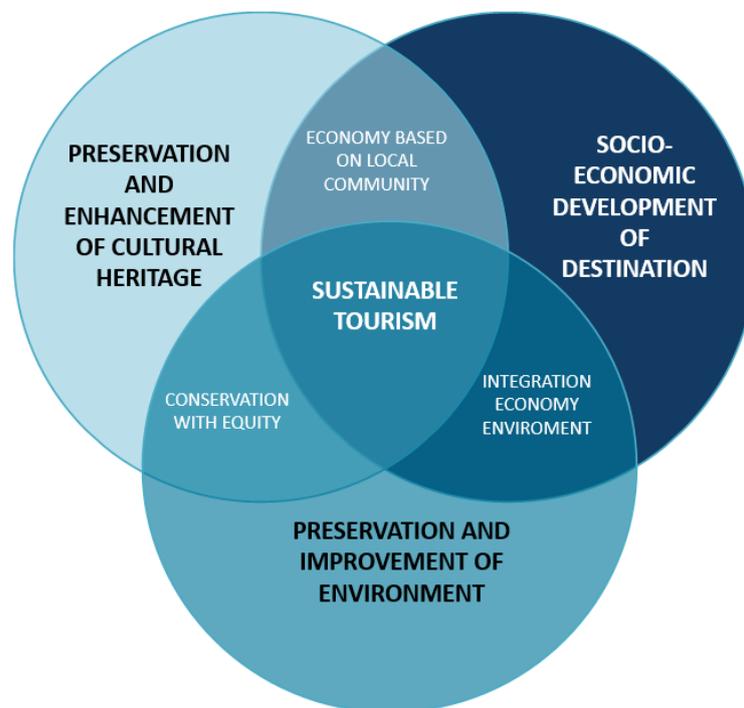
Therefore, destinations must adopt sustainability as permanent strategy to work on and the only option for tackling challenges such as the consequences of the intensive growth in visitor arrivals, and for ensuring their lasting appeal over time

According to the World Commission (1987), sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

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Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including cruise tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic and sociocultural aspects of tourism development, and a suitable balance must be established between these three pillars to guarantee its long-term sustainability. Thus, sustainable tourism should optimal use of **environmental resources**, Support for **protection of cultural and natural heritage** and traditional values. Ensure viable, long-term economic operations, providing **socio-economic benefits** to local people in host destination (World Commission;1987) (Figure 3).

Figure 3 Sustainable Tourism



Source: Own elaboration (Based on: World Commission, 1987)

It is well-known that tourism can have both positive and negative impacts on the area where it operates. Carrying up a sustainable tourism is required equilibrium of three pillars: socio cultural, environmental and economical. The Global Sustainable Tourism Council (CGTS), supported since its creation by the World Tourism Organization (UNWTO), suggests criteria that constitute the basis of sustainability to be implemented by the several actors in tourism sector, both public and private.

Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective

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measures whenever necessary. In this regard, sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them.

With particular emphasis on **cruise tourism**, it is important to consider that the contemporary segments, characterised by large ships, could be present inherent difficulty in applying sustainable tourism given its large-scale visitation in short periods if the traffic is not well managing. Therefore, it requires proper management depending on each host destination in order to reduce the potential negative effects on Cultural Heritage.

Controversial issues of sustainable tourism are brought to the forefront in cruise tourism (Rosa-Jiménez, 2018): the concentration of calls by cruise companies has increased the congestion of cruise port cities (Stefanidaki and Lekakou, 2014); cruise ship visitors arrive in large numbers, overloading dock facilities and buildings (Manning, 2006); the benefits derived from hospitality and transport are marginal compared to the “social costs” generated (Legoupil, 2013). Therefore, there is a need for a balanced approach that focuses on minimizing impacts and risks.

In the past few years many cities have recognized the importance of sustainable development in policy and planning for tourism. This indicates an awareness in the importance of sustainable tourism and the interest in the pursuit of its concepts. The current challenge is to adjust these policies and frameworks with each destination’s cruise tourism development strategies.

Therefore, in practice, the overall strategy is for destinations to promote the ethos and programmes for sustainable cruise tourism development. In this regard, different measures can be designed and implemented so as to achieve the sustainability of a tourism destination. These **Cruise Destinations require work towards ensuring that the benefits are maximised and the cost minimised for all actors involved and focus on people (cruise passenger, host community and stakeholders)**. Becoming to aim more sustainable, cruises port and destinations must address all three aspects of sustainability (**¡Error! No se encuentra el origen de la referencia.**) and the way in which they affect each other.

On account of this, the 17 Sustainable Development Goals (SDGs) developed by UNWTO constitute an ambitious global agenda for people, planet, prosperity and peace through partnerships. The SDGs aim to end poverty, fight inequality and injustice, and solve climate change by 2030. Tourism can play a huge part in achieving the SDGs and UNWTO is committed to provide the global tourism community with a space to come together and realize the 2030 Agenda (Figure 4). The economic relevance of tourism, representing up to 10% of the world’s GDP and employment, makes harnessing its full potential essential for the advancement of the SDGs.

Cruise industry has impact on six of the Sustainable Development Goals including (CLIA,2017):

- **7 Affordable and Clean Energy:** Ensure access to affordable, reliable, sustainable and modern energy for all.
- **8 Decent Work and Economic Growth:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- **9 Industry, Innovation and Infrastructure:** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- **11 Sustainable Cities and Communities:** Make cities and human settlements inclusive, safe, resilient and sustainable.
- **13 Climate Action:** Take urgent action to combat climate change and its impacts
- **14 Life Below Water:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Figure 4 The 2030 Agenda for Sustainable Tourism



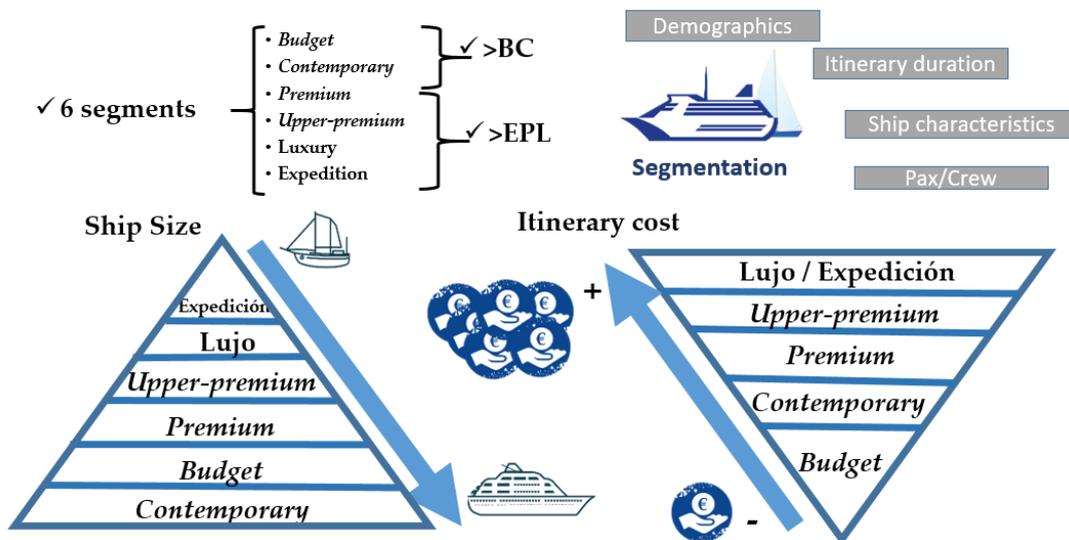
Source: <http://tourism4sdgs.org/>

2.3. Peculiarities of the cruise tourist sector: Segmentation and Value Chain

As said the WTO², to develop sustainable cruise tourism, the industry's segmentation and the experiences sought within the respective segments should be understood as well as the value chain within a destination. Cruise tourism is a general term that does not necessarily have a clear definition and classification. Currently, cruise tourism options are varied by size of ship and type of experience.

The growth of cruising has led to market segmentation. Different types of vessels, associated with different amenities offered on board and ashore, and itineraries, define types of cruises offered, in turn having as target different groups of potential cruisers. In an attempt to broaden the group of potential customers, cruise lines, or specific brands of the bigger corporations, provide and market its presence in one, in some case more, of the major segments, namely contemporary, premium and luxury cruises.

Figure 5 Cruise Tourism Segmentation



Source: Estebez et al., (2018)

As we have commented previously cruise tourism is a general term that does not necessarily have a clear classification. Socio-demographic segmentation is often used by organizations in the cruise industry, such as Cruise Lines International Association (CLIA),

² WTO ASIA (2016)

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GP Wild, and the cruise companies (Gross & Lueck, 2011; Vogel, Papathanassis, & Wolber, 2012). Wood (2004) distinguishes between four segments according to similar criteria. Others authors such as Esteve-Pérez and others (2018) note in their studies that a common segmentation for cruise tourism can be applied using six categories (see Figure 5 Cruise Tourism Segmentation) as we are going to describe.

Cruise ships line can be structured in six market segments. The main differentiating characteristics between them are: size of the ship, ratio crew / passenger, ratio gross tonnage / passenger and cost of the itinerary. Nowadays market could be structure in following segments: budget, contemporary, premium, upper-premium, luxury and expedition (see Table 1). Also depending on total traffic and to facilitate analysis in some destinations, these segments can be grouped into two groups: BC (budget-contemporary) and EPL (expedition, premium-upper-premium and luxury).

Budget segment is the most economical of all, it uses medium-sized ships (1,000-2,500 passengers) and most of them are single-brand shipping lines and have a single ship. This segment could be defined as “low cost” concept for it characteristic. Contemporary segment employs large ships (2,500-4,000 passengers) and mega-cruise ships (4,000-6,000 passengers), whose cabins are generally small in size. This segment has applied intensively more economies of scale in new fleet where ships increase passenger capacity and make vacation more accessible to larger population strata. It could be defined with quantity as adjective. Additionally, supply chain of this presents a remarkable vertical integration and passengers seek to visit popular destinations, reason for why marquee ports are integrated into the itineraries as an attraction of it.

Premium segment uses medium-sized ships and large cabins, being defined by the adjective “quality”. Luxury segment is characterized for small ships (80-800 passengers) with a crew ratio per passenger close to 1, or even higher. Furthermore, their cabins are large or suite and it is characterized by “exclusivity” and the highest cost of itineraries. Upper-premium segment shares characteristics of the premium and luxury, generally using medium or small size cruise ships with large cabins with a ratio of crew per passenger higher than premium but without achieving the exclusivity of luxury. Finally, Expedition segment is characterized by shipping companies that offer expedition cruises, adventure cruises or, in general, something different than other shipping companies with a very personalized service. It uses small or very small ships (<100 passengers) that allow it to have access to unusual ports. For example, ships classify in this segments have combined motor and sail propulsion or ships designed and built to navigate through Arctic or Antarctic waters.

Table 1 Characteristic Cruise Tourism Segmentation

	BUDGET	CONTEMPORARY	PREMIUM	UPPER PREMIUM	LUXURY	NICHE/EXPEDITION
 Demographics	Youth and lower-income population segments	Target is very broad, offering "something for everyone", but especially attractive to first-time cruise passengers, families, couples and young people	Over 40 age group, often professionals, targeting repeat passengers	More than 55 years old	Couples and singles with a taste for super luxury resorts on land, with no facilities for children	Between 35-55
 Itinerary duration	3 - 7 days	3 - 7 days	Varied; more emphasis on cruises longer than 7 nights. Itineraries featuring rarely visited ports.	Between 7/10 days. Focused on unusual ports and places; shore excursions represent an important profit generator	More than 10 days. Focused on unusual ports and places; shore excursions represent an important profit generator	Exotic and particular destination, more than 10 days.
 Ship characteristics	Medium ships with minimum on-board facilities and services	Large, new ships; resort-type facilities with a strong emphasis on on-board activities and services (such as beauty shops, golf, spa, etc.), and family entertainment	Medium ships; More refined furnishings; On-shore excursions are important profit generators	Smaller/Medium Ships	Smaller ships, most spacious accommodations, with a high percentage offering views of the sea; Numerous suites; Highest crew-perpassenger ratio; More sophisticated interior design; and Exclusive atmosphere	Smaller cruises that do not generally fit the other categories. Cover a range from old to new cruise ship
 Pax/Crew	>3	2.4 - 2.8	1.8 - 2.3	1.6	1	1 - 2.3

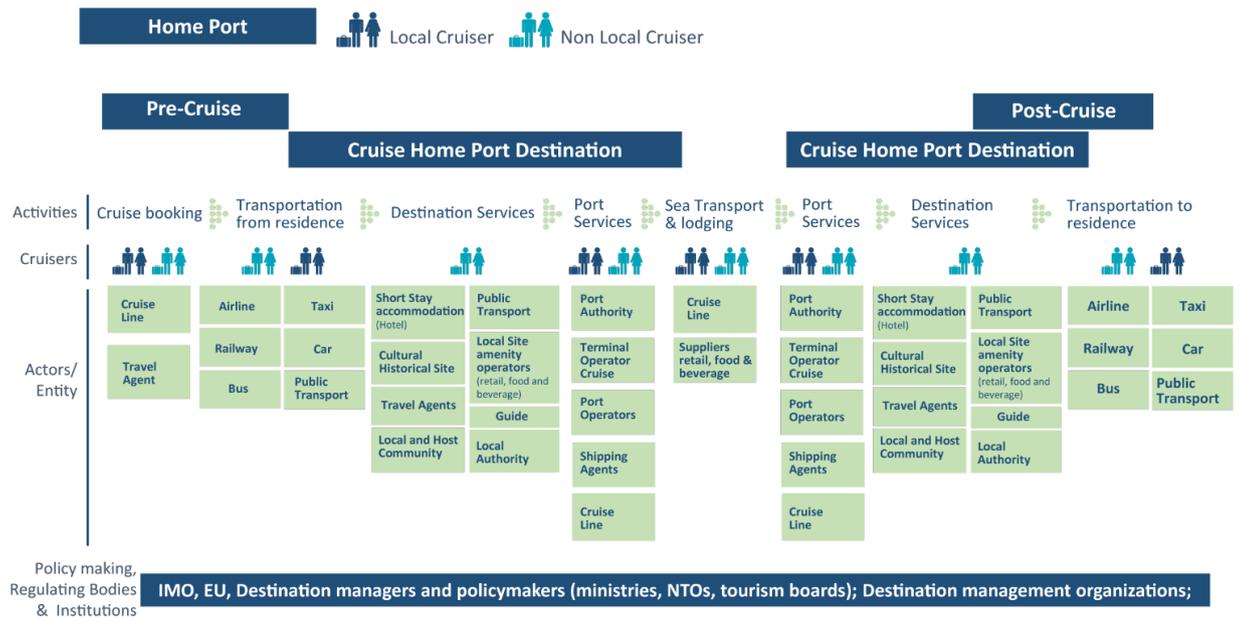
Source: Own elaboration



Typically, each shipping company is focused on a single segment and, by extension, each ship as well. However, certain trends are observed in which some shipping companies are combining two segments in the same ship, in order to diversify the offer. Accordingly, some shipping companies in contemporary segment offer a small part of their cabins as if they were in the luxury segment. As an example, MSC Cruises has MSC Yacht Club and the subsequent diversification with the new construction of ships for the luxury segment. Given the trend for horizontal integration that characterizes the cruise ship market, the strategies of each multi-brand group have been aimed at integrating ships from different segments and thus ensuring that they can provide for many different types of cruise ship passengers. In this way, each cruise/shipping company represents a different value proposition for the potential cruise passenger.

As we said in last section, cruise tourism has a complex set of direct and indirect impacts in destinations. There are many different types of organisations involved in cruise tourism, supplying and procuring various types of goods and services. The product includes transportation, accommodation, food and beverage outlets and it seeks to provide the visitor an experience (Figure 2).

Figure 6 Mapping Value Chain Cruise

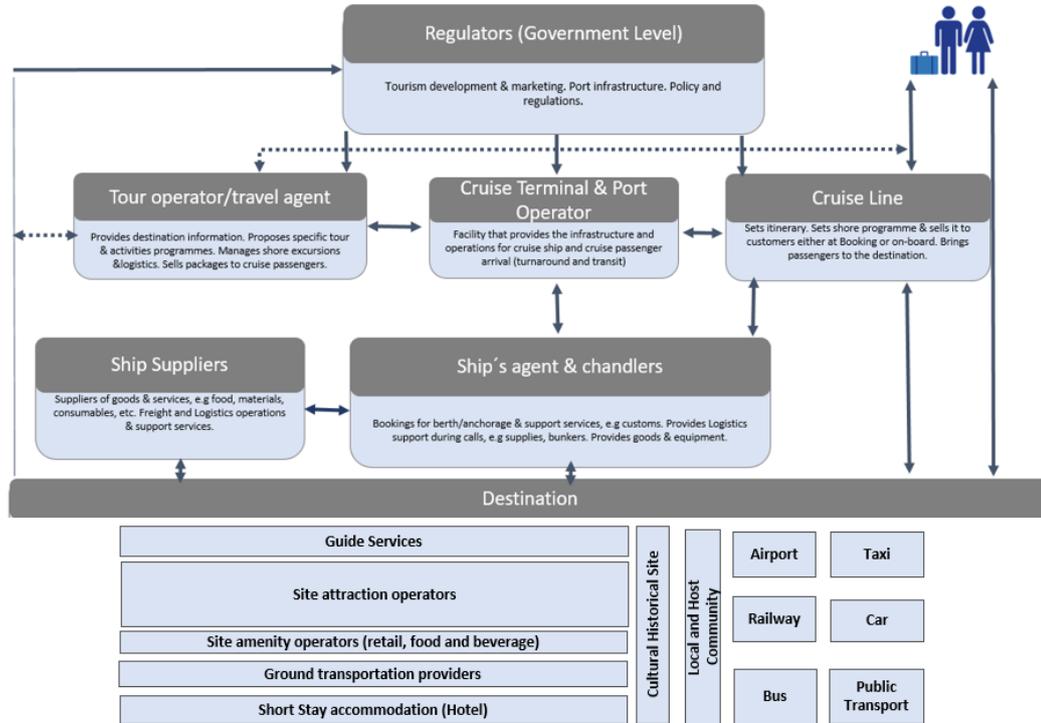


Source: Fundación Valenciaport. (Based on: SIROCCO project)

The concept of **value chain** can be applied to examine the various entities, suppliers and stakeholders that participate in cruise tourism and interrelationship among entities. According to UNWTO (2017) understanding and mapping a destination's cruise tourism value chain is a key first step for destination managers and policymakers to initiate programmes to address sustainable cruise tourism development. (Figure 6)

- For sustainable cruise tourism development is important to consider:
1. Every destination will have a value chain.
 2. Value chains will grow, consolidate and shift as cruise tourism develops within a destination.
 3. Destinations exist in cruise tourism as part of itineraries, and the destinations form part of the value chain among themselves within each cruise itinerary.
 4. Every entity within the value chain has a relationship to sustainable development.
 5. Sustainable tourism requires collaboration among several different entities for a common purpose.

Figure 7 Value Chain Linkages in Cruise Destination



Source: SIROCCO project

Especially in the Mediterranean area, cruise tourists demand for a destination is derived from the experiences it can offer visitors. They decide to visit a destination because of its natural and cultural heritage, not because of its infrastructures. Each entity within the value chain helps to provide the visitor an experience. Within their own business model, each entity can embed respective best practices in sustainability to enhance product development, planning, operations and management. This will contribute to the protection of the destination's value.

Finally, regarding onshore activities there is a different behaviour of cruise passenger when they arrive at destination. Broadly, passengers fall into three categories:

1. Those who have **booked organised excursions via the cruise companies** and their contracted ground handlers. (destinations can have information about where they go, total number, movement and rout of coach previously to ship stopover. For this information is mandatory a coordination between port authority, tour operators and destination managers). There is available information known by port authority in most cases days before stopover.
2. Those who have researched and **booked their own onshore excursions** and experiences. (as independent passenger we can't have information nerveless port authority require information to independent excursion providers before access to pick up cruise passenger)
3. Those with **no fixed excursion plans**, but who may come onshore to explore at their own pace. (having information about their behaviour require a monitoring system)

Those who come onshore are increasingly seeking unique experiences which allow them to get 'under the skin' of the places they visit and take part in more active pursuits. The cruise companies have responded to this trend by offering a more diverse range of active experiences.

Taking into account previous studies carried out in the framework of Co-evolve project in Valencia, we can indicate that near to 90% of cruise passengers in luxury segment make contracted excursions on the ship itself. However, near of 75% cruise passengers from contemporary segment visit the city on their own.

2.4. How to assess sustainability in cultural heritage in cruise destinations?

In this section, a set of indicators have been developed for the purpose of measuring the sustainability of the cruise destination. The present report shows two different groups of quantitative indicators. On the one hand, some general indicators developed by SIROCCO project are included to measure the overall sustainability. On the other hand, specific indicators are developed by HERIT-DATA project to assess the sustainability of Cultural Heritage in cruise tourism destination. To this end, tourism indicators enable an assessment of the current status of a given variable and its positive or negative evolution over time. The indicators capture aspects that are key to understanding the sustainability status of the destination, in addition to being able to measure what state the tourism development process in, according to the objectives that local actors have proposed.

In this regard, the proper assessment of a destination's value chain will enable to understand cruise tourism's potential benefits, risks and impacts. Assessments form an empirical, quantitative and situational foundation for policy-makers and managers to determine optimal levels of cruise tourism development. They can be used in planning processes, setting of policy and regulation and ongoing monitoring to create feedback loops and improvement.

Diverse sustainability certification systems were analysed in the framework of SIROCCO project (deliverable 3.4) with the main proposal to define the Sustainable Cruise Tourism System (SCTCS). We sum up in Table 2 four of them.

Table 2 Sustainable Certification Systems

THE EUROPEAN TOURISM INDICATOR SYSTEM (ETIS)		THE GLOBAL SUSTAINABLE TOURISM COUNCIL (GSTC)	
Description	Indicators	Description	Indicators
<p>Aims to serve as a toolkit for destination stakeholders to measure and monitor their sustainability management processes, and enable them to share and benchmark their progress and performance in the future. The basic principle of the ETIS is that destination responsibility, ownership, and decision-making is shared. Therefore, engaging different stakeholder groups to structure, collect and report information is a powerful way to undertake effective destination management. ETIS is made up of a set of Indicators, a Toolkit, and a Dataset. These can be used on a voluntary basis, together or integrated into existing destination monitoring systems. The system is flexible, as it can be expanded or contracted to meet the needs of the specific destination.</p>	<p>27 core and 40 optional indicators grouped into four categories: destination management; economic value; social & cultural impact and environmental impact.</p>	<p>Has established two sets of criteria to encourage sustainable practices in tourism. These include Destination Criteria (GSTCD) and Hotel & Tour Operator Criteria (GSTC-H&TO).</p>	<p>The GSTC criteria and indicators for destinations are grouped into four categories: effective sustainable management (14 indicators) economic benefits & negative impacts to the host community (9 indicators) benefits & negative impacts to cultural heritage (6 indicators) benefits & negative impacts to the environment (12 indicators)</p>
<p>Relevance</p> <p>Its coverage of all three sustainability components, i.e. economic, environmental and social sustainability. However, customisation of its individual indicators will be required as these refer to the tourism industry overall and cannot be applied in their present form to the cruise tourism segment.</p>		<p>Relevance</p> <p>GSTC covers all three sustainability components, i.e. economic, environmental and social sustainability.</p>	
THE TRAVEL SYSTEM		THE ECOPORTS SDM SYSTEM	
Description	Indicators	Description	Indicators
<p>Certification system that allows tour operators, travel agents and accommodation providers to monitor and self-assess their sustainability performance. The system is operated by ABTA, the UK's largest travel association.</p>	<p>Eight most relevant categories for tour operators:</p> <ul style="list-style-type: none"> <input type="checkbox"/> sustainable management <input type="checkbox"/> internal management <input type="checkbox"/> sustainable supply chain management <input type="checkbox"/> sustainable transport <input type="checkbox"/> sustainable accommodation <input type="checkbox"/> sustainable excursion <input type="checkbox"/> destination <input type="checkbox"/> customer satisfaction. 	<p>The EcoPorts network is part of the ESPOS (European Sea Ports Organisation) structure and aims at creating a level playing field on port environmental management in Europe</p>	<p>SDM incorporates a number of criteria in the form of yes/no questions, grouped into eight categories:</p> <ul style="list-style-type: none"> <input type="checkbox"/> environmental policy <input type="checkbox"/> management organisation & personnel <input type="checkbox"/> environmental awareness & training <input type="checkbox"/> communication <input type="checkbox"/> operational management <input type="checkbox"/> emergency planning <input type="checkbox"/> environmental issues & monitoring <input type="checkbox"/> review & audit.
<p>Relevance</p> <p>Travelife incorporates two sets of criteria, one for tour operators and one for accommodation providers.</p>		<p>Relevance</p> <p>Relevance for focuses directly to the port.</p>	

Source: Own elaboration from SIROCCO Project information

As so far no progress has been made in the implementation of SCTCS certification proposal by SIROCCO project, we will describe below the roadmap to be followed by the destinations for measurement under the GSTC framework. In this regard, we note that until February 2020, destinations and companies listed in Table 3 have been certified.

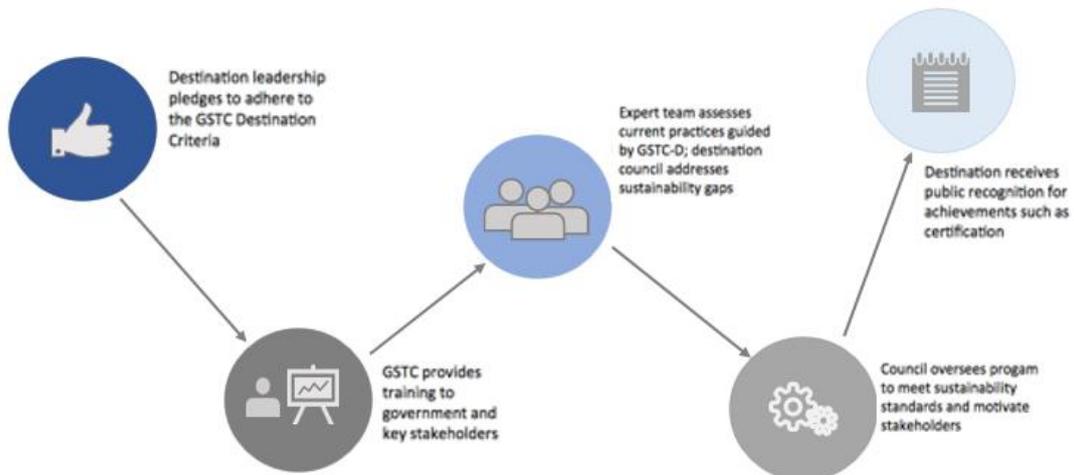
Table 3 GSTC-Accredited Certification Destinations

ORGANIZATION NAME	COUNTRY
Botswana Tourism Organization	Botswana
Tourism	Cayman Islands
Japan Tourism Agency	Japan
City of Suwon, Tourism Division	Korea, Republic of
Tourism Policy Team	
Ulsan Metropolitan City	Korea, Republic of
Malta Tourism Authority	Malta
Innovation Norway	Norway
NCE Tourism – Fjord Norway	Norway
St. Kitts Sustainable Destination Council (SDC)	Saint Kitts and Nevis
Turisme de Barcelona	Spain
Region Västerbotten Turism	Sweden
Taiwan Tourism Bureau	Taiwan
Vanuatu Department of Tourism	Vanuatu

Source: GTS Council

It is relevant to point out that destinations that are subjected to the measurement receive advice and training from the GSTC in the stages of sensitization of the actors, as well as mentoring in information gathering, gap assessment, supervision of the destination's sustainability standards program, to finally manage to certify it. See roadmap to sustainable destination in Figure 8 .

Figure 8 Roadmap to Sustainable Destination, GTSC



Source: Source: GTS Council

As we mentioned before in the framework of SIROCCO Project, was proposed the Certification System of Sustainable Cruise Tourism (SCTCS) based on the analysis of previously certification system (Table 2). SCTCS was proposed, to help cruise value chain actors make informed decisions to enhance cruise tourism’s sustainability (economic, environmental, social) in a balanced way. The proposed SCTCS includes an indicator structure linking each indicator to the respective cruise value chain actor who can provide the required data and proposing data sources and collection methods.

The proposed structure of the SCTCS includes the following components:

- cruise destination management
- cruise economic value
- cruise social & cultural impact
- cruise environmental impact

The proposed criteria and indicators of the SCTCS for SIROCCO project are presented in Table 4.

Table 4 Proposed criteria and indicators of the SCTCS in SIROCCO project

Section A			
Destination Management			
Criteria	Indicator Ref.	Indicator description	Assessment type
A.1 Sustainable Cruise Tourism Policy	A.1.1	Existence of a formal cruise stakeholders’ working group (including public & private entities)	Yes/no
	A.1.2	Existence of a formal sustainable cruise tourism strategy/action plan, verified by the cruise stakeholders’ working group	Yes/no
	A.1.3	Alignment level between cruise development strategy and other regional/local strategies (ICZM, MSP, RIS3, cultural/historical heritage)	Likert scale (1-5)
A.2 Sustainable Tourism Management in cruise VC actors	A.2.1	Percentage of cruise VC actors in the destination using a voluntary verified certification/labelling for environmental/quality/sustainability and/or CSR measures	% of local actors involved in cruise tourism
A.3 Cruise passenger satisfaction	A.3.1	Satisfaction of cruise passengers with their overall experience in the destination	Likert scale (1-5)
A.4 Information & communication	A.4.1	Share of cruise passengers who would consider this as an environmentally conscious destination	%
	A.4.2	Cruise passengers are provided with information on sustainable tourism and sustainable behaviour (e.g. respectful attitude regarding local socio-cultural and natural environment)	Yes/no
	A.4.3	There are established procedures in place for cruise value chain actors to exchange environmental information between them and with the local community?	Yes/no

4.6.1. Sustainable Cruise Destination

Section B

Economic Value

Criteria	Indicator Ref	Indicator description	Assessment type
B.1 Volume of cruise tourism at destination	B.1.1	Number of cruise passengers per month	Number of cruise passengers
	B.1.2	Number of cruise ship calls per month	Number of ship calls
	B.1.3	Number of home in/out cruise passengers per month	Number of cruise passengers
	B.1.4	Number of transit cruise passengers per month	Number of cruise passengers
	B.1.5	Seasonality of cruise activities	Cruise passenger shares (%) per quarter (Mar-May, Jun-Aug, Sep-Nov, Dec-Feb)
	B.1.6	Average length of stay of cruise ships	Hours
B.2 Value of cruise tourism at destination	B.2.1	Average spending of a cruise passenger per visit	Euros
	B.2.2	Average spending of cruise lines to destination enterprises (e.g. port, local agent, local guide, etc.) by ship call	Euros

Section C

Social & Cultural Impact

Criteria	Indicator Ref.	Indicator description	Assessment type
C.1 Community/ Social Impact	C.1.1	Number of cruise passengers visiting the destination, per 100 residents	%
	C.1.2	Satisfaction of destination residents with cruise tourism	Likert scale (1-5)
	C.2.1	Accessibility level of port infrastructure, for cruise passengers with disabilities or specific access requirements	Likert scale (1-5)
	C.2.2	Accessibility level of public transport at the destination, for cruise passengers with disabilities or specific access requirements	Likert scale (1-5)
C.2 Equality/ Accessibility	C.2.3	Accessibility level of excursion sites (cultural, historical) at the destination, for cruise passengers with disabilities or specific access requirements	Likert scale (1-5)
	C.2.4	Satisfaction of cruise passengers with the accessibility of the destination, for cruise passengers with disabilities or specific access requirements	Likert scale (1-5)
	C.3.1	Views of local residents on the (positive or negative) impact of cruise tourism on destination identity & cultural heritage	Likert scale (1-5)
C.3 Protecting & Enhancing Cultural Heritage, Local Identity & Assets	C.3.2	Share of the destination's five most important traditional/cultural events that are significantly promoted through cruise tourism	%
	C.3.3	Share of the destination's five most important cultural/historical sites that are significantly promoted through cruise tourism	%
C.4 Safety	C.4.1	Number of cruise passengers who register a complaint with the destination's police	Number of cruise passengers

Section D			
Environmental Impact			
Criteria	Indicator Ref.	Indicator description	Assessment type
D.1 Transportation impact	D.1.1	Average travel of cruise passengers between their residence and the cruise homeport (2-way)	Km
	D.1.2	Share of cruise passengers using sustainable (public) transport means between their residence and the cruise homeport (2-way)	%
	D.1.3	Share of cruise calls made at the destination by LNG-powered ships	%
	D.1.4	Average travel by cruise passengers at the destination	Km
	D.1.5	Share of cruise passengers using sustainable (public) transport means to get around the destination	%
D.2 Energy Usage	D.2.1	Availability of shore-side electricity at the port	Yes/no
	D.2.2	Share of cruise ship calls that receive shore-side electricity	%
	D.2.3	Share of port facilities' electrification provided by renewable sources at the destination	%
	D.2.4	Share of public transport fleet powered by electricity at the destination	%
	D.2.5	Share of excursion coach fleet powered by electricity at the destination	%
	D.2.6	Share of destination's electricity generated by renewable sources	%
D.3 Solid Waste Management	D.3.1	Availability of ship-generated waste reception facility at the port	Yes/no
	D.3.2	Ship-generated waste delivered at port per year	m ³
	D.3.3	Share of ship generated waste recycled at the port/destination	%
D.4 Water Usage	D.4.1	Fresh water consumption per cruise passenger (while at the destination) compared to general population water consumption per person day	%
D.5 Landscape & biodiversity protection	D.5.1	Views of local residents on the (positive or negative) impact of cruise tourism on the destination's natural heritage	Likert scale (1-5)
	D.5.2	Share of the destination's five most visited natural sites by cruise passengers that are designated for protection	%
	D.5.3	Share of the destination's five most important natural sites that are significantly promoted through cruise tourism	%

Source: SIROCCO project

Apart from the general SCTCS indicators, the Herit-Data project has developed a set of indicators oriented to measure the impact of cruise tourism on Cultural Heritage in the Mediterranean port cities.

In this regard, the indicators focus on measuring whether different sites and building of the cities under study are overcrowded, taking into consideration different environmental parameters (temperature, relative humidity, degree of humidity, luminosity, xylophagous detection, gases) (Indicator E.1 Building / Site Capacity Overcrowded). Moreover, tourists' city flows are analysed so as to measure the number of people at some sites and number of persons in transit between two tourist points in a given time (Indicator E.2 Tourist City Flows). In addition to this, it is worth highlighting the importance of capturing people perception of crowded places by using their comments made in social media profiles (E.3 People perception of overcrowded places). Finally, the importance of the port infrastructures and the cultural heritage areas is measured in order to determine the carrying capacity of these places (E.0 Characterization of areas of heritage value).

Table 5 Herit-Data indicators

INDICATOR SET	SET CODE INDICATOR NAME	INDICATOR CODE	INDICATOR COMPONENTS	Question Focus	DATA REQUIRED (variables)	DATA COLLECTION	NOTES	USE
E.1 Building / Site Capacity Overcrowded	(E1) I.3 Optimal levels of Tourists overnights	(E1) I.3.1	Overnights/(number of beds in official accommodation*30)	How much the tourism flows saturate the accommodation capacity? (official and un-official)	N. of beds in official accommodation facilities (georeferenced), N. of overnights in official accommodation facilities	MONTHLY		
		(E1) I.3.2	Overnights/(number of beds in un-official accommodation*30)		N. of beds in un-official accommodation facilities (AirBnB) (georeferenced), N. of overnights in un-official accommodation facilities overnights	MONTHLY		
		(E1) I.3.3	Tourists overnights in official accommodations / number of residents (monthly) (georeferred)	What is the socio-economic (population) impact of the tourist flows?	N. of overnights in official accommodation facilities, N. of residents			
		(E1) I.3.4	Tourists overnights in un-official accommodations / number of residents (monthly) (georeferred)		N. of overnights in un-official accommodation facilities, N. of residents			
		(E1) I.3.5	Tourists overnights in all types of accommodations / number of residents (monthly) (georeferred)		N. of overnights in official + un-official accommodation facilities, N. of residents			
		(E1) I.3.6	Ratio between the number of tourists overnights and the number of residents within a significant neighborhood (to be defined according to the characteristics of the place or building, for example the UNESCO center)	What is the socio-economic (population) and environmental (squared mile/meters) impact of the tourist flows around a specific site or building?	N. of overnights in official + un-official accommodation facilities, N. of residents, squared mile/meters around a specific site or building			
E.2 Tourist City Flows	(E2) I.4 Optimal levels of overcrowding of people transit	(E2) I.4.1	Detection real transit of n ^o people / area / time	How many people are there, where, when and with what trajectory?	"Number of persons in transit between two tourist points in a given time. Real time transit map - flows"		Continuous data acquisition over time by means of location and counting cameras or other similar system - Analytical mobile cards.	Sesory Estrategic
		(E2) I.4.2	Analytics anticipated reserves management: prediction of critical values agglomerations	How many people will we receive, where, when and with what planned itineraries?	Number of persons with anticipated reverva for each tourist itinerary X (tourist package or predefined tour) Tourist Itinerary X (predefined tour): sites included in the itineraries and visiting hours of each of them		Expected transit map	Predictive



4.6.1. Sustainable Cruise Destination

INDICATOR SET	SET CODE INDICATOR NAME	INDICATOR CODE	INDICATOR COMPONENTS	Question Focus	DATA REQUIRED (variables)	DATA COLLECTION	NOTES	USE
E:3 People perception of overcrowded places	(E3) I.5 Tourists perception about adequacy of Overcrowded site experience	(E3) I.5.1	Real time perception overcrowded: Social net	Are tourists and residents satisfied with comfort in heritage spaces?	Number and type of words-comments in social networks related to the concept of "massification", identified as a negative aspect in the tourist visit.	Twitter vigilance in different languages	"For example, a data source is: European Environmet Agency http://airindex.eea.europa.eu/#_blank https://www.eea.europa.eu/data-and-maps/dashboards/air-quality-statistics "	Sesory Estrategic
		(E3) I.5.2	Index perception post-experience overcrowded (sample)		Answers to questions of questionnaires made to real tourists to the perception of "overcrowding" or "tourist saturation" of the visited site.		Important to transcribe the question from the questionnaire where the query is made, and the rating scale used.	Estrategic
	(E3) I.6 Residents perception about adequacy of Overcrowded site experience	(E3) I.6.1	Real time perception overcrowded: Social net	Are residents satisfied with comfort in heritage spaces?	Number and type of words-comments in social networks related to the concept of "massification", identified as a negative aspect for the residents.	Twitter vigilance in different languages	"For example, a data source is: European Environmet Agency http://airindex.eea.europa.eu/#_blank https://www.eea.europa.eu/data-and-maps/dashboards/air-quality-statistics "	Sesory Estrategic
	(E3) I.7 Personal perception about adequacy of Security site experience	(E3) I.7.1	Real time percepcion Security: Social net	Do tourists and residents perceive the environment as safe?	Number and type of words-comments in social networks related to the concept of "insecurity" identified as a negative aspect during the tourist visit.	Twitter vigilance in different languages		Sesory Estrategic
		(E3) I.7.2	Index perception post-experience Security (sample)		Answers to questions of questionnaires made to real tourists to the perception of "insecurity" during the tourist visit made.		Important to transcribe the question from the questionnaire where the query is made, and the rating scale used.	Estrategic
	(E3) I.8 Personal perception about hygiene, sanitation and cleaning conditions site experience	(E3) I.8.1	Real time perception about hygiene, sanitation and cleaning conditions: Social net	Are tourists and residents satisfied with the cleanliness and hygiene of heritage spaces?	Number and type of words-comments in social networks related to the concept of "hygiene, sanitary conditions and cleanliness", in the tourist visit made.	Twitter vigilance in different languages		Sesory Estrategic
		(E3) I.8.2	Index perception post-experience about hygiene, sanitation and cleaning conditions (sample)		Answers to questions of questionnaires made to real tourists to the perception of "hygiene, sanitary conditions and cleanliness", in the tourist visit made.		Important to transcribe the question from the questionnaire where the query is made, and the rating scale used.	Estrategic
	(E3) I.9 Personal perception about cultural heritage preservation site experience	(E3) I.9.1	Index perception post-experience cultural heritage preservation (sample)	Do tourists and residents meet expectations for the conservation of the heritage space and experience?	Number and type of words-comments in social networks related to the concept of "conservation of cultural heritage", in the tourist visit carried out.	Twitter vigilance in different languages	Important to transcribe the question from the questionnaire where the query is made, and the rating scale used.	Estrategic



4.6.1. Sustainable Cruise Destination

INDICATOR SET	SET CODE INDICATOR NAME	INDICATOR CODE	INDICATOR COMPONENTS	Question Focus	DATA REQUIRED (variables)	DATA COLLECTION	NOTES	USE
E.5 Residential quality site	(E5) I.15 Optimal levels of access to housing in tourist areas by local population	(E5) I.15.1	Residential / tourist housing ratio	Degree of turistification of the area: do residents have access to housing and in adequate conditions?	Total number of dwellings in cultural heritage areas. Number of dwellings in cultural heritage areas dedicated to rental for tourists (tourist apartments).		Time series	Estrategic
		(E5) I.15.2	Housing value (m2): rent / buy		Average price per square metre of housing in cultural heritage areas: sale and rent (€).			Estrategic
		(E5) I.15.3	Population movement flow analysis: historic center - other areas		Number of residents in cultural heritage areas.			"Population displacements in or out of the tourist enclave Early series"
	(E5) I.16 Optimal levels of access to Employment quality in tourist areas by local population	(E5) I.16.1	Rate and quality employment in target areas	Degree of turistification of the area: do residents have access to employment and in adequate conditions?	"Direct tourism employment as percentage of total employment Total number of residents directly employed by tourism Total size of destination labour force"		ETIS Indicator, Indicator: B.3.1	Estrategic
					Temporary rate in the tourist industry (percentage of employees with temporary contracts as compared with the total number of employees).			
					Percentage of full-time/part-time contracts in tourism industry activities			
	(E5) I.17 Optimal levels of access to local stores and products in tourist areas by residential population	(E5) I.17.1	Analysis of the commercial offer in the target area	Degree of tourism in the area: do residents have access to basic products in local shops?	Number of retail stores by type of products on sale: food and beverages; household items; cultural and recreational items; other items.		"Indicators of Activity of the Trade Sector. Structural Business Statistics. Trade Sector. Annual series. Example of data in Spain: https://www.ine.es/jaxiT3/Tabla.htm?t=28354 "	Estrategic
	(E5) I.18 Higher prices in target areas	(E5) I.18.1	Local price index	Degree of turistification of the area: To what degree is life in the monitoring zones more or less costly?	"Consumer Price Index (CPI) in each of the 12 groups according to the international classification of consumption in the European Union (EU): ECOICOP (European Classification of Consumption by Purpose)."		"It is interesting to know at what territorial level is it possible to obtain the data: regional, municipal, neighbourhood? Example of data in Spain: https://www.ine.es/jaxiT3/Tabla.htm?t=22355&L=0 "	Estrategic
	(E5) I.19 Lack of identity of the traditional activities within the UNESCO area	(E5) I.19.1	Employees' number of traditional activities (historical shops, handicraft shops, etc.) / total number of employees within the UNESCO area	What's the impact of tourism on the commercial activities within the UNESCO area?	Demographics of economic activities by ATECO (Economic Activities Classification by ISTAT) sector in the Unesco area			



4.6.1. Sustainable Cruise Destination

INDICATOR SET	SET CODE INDICATOR NAME	INDICATOR CODE	INDICATOR COMPONENTS	Question Focus	DATA REQUIRED (variables)	DATA COLLECTION	NOTES	USE
E.0 Characterization of areas of heritage value (1/2)	E0) 0.20 Characterization areas / sites of tourist value and tourism profiles	(E0) 0.20.1	Delimitation and basic characteristics of sites subject to saturation : sites / spaces / heritage areas	Which heritage sites are likely to suffer from tourist saturation?	<ul style="list-style-type: none"> List of Tourist Areas (Hinterland + City) - heritage and historical areas List of main tourist attractions per area (geo referenciación) Area (km2) of each heritage area/historical centre List of Cultural Heritage buldings per area (geo referenciados) 		<p>It is suggested to indicate in each case the type of patrimony in question (the ILAM Foundation table can be used).</p>	Estrategic
		(E0) 0.20.2	Characterisation and types of routes - Tourist shops	Which itinerarios are most frequently offered to tourists?	<ul style="list-style-type: none"> List of points of visit (tourist attraction) that are included in the itineraries / tours that are offered to tourists. Top five most popular tourist attractions (heritage and cultural attractions) included in tours. 		<p>It will make it possible to identify the points of visit where a greater number of tourists are likely to be concentrated.</p> <p>Adapted from ETIS - Destination profile</p>	Estrategic
		(E0) 0.20.3	Characterization of tourist profile visiting heritage areas/ sites	How is it and the tourist who visits the heritage sites, how does he get there?	<ul style="list-style-type: none"> Number of tourists per country of origin Number of tourists per age Number of tourists travelling alone / with children Number of turists by means of transport used to reach the tourist destination 		It will allow to identify the ratio between national and international tourists	Estrategic
		(E0) 0.20.4	Characterization of tourist profile visiting heritage areas/ sites	What is the proportion of turistco packages sold in advance? (predictable)	<ul style="list-style-type: none"> Number of tourist packages sold (total) Number of pre-sale tourist packages 			Estrategic
		(E0) 0.20.5	Historical data tourism heritage areas	How much tourism have the heritage sites had?	<ul style="list-style-type: none"> Number of visitors per Turistic Areas/ year Number of tourists in the peak month and number of tourists in the least crowded month in the Turistic Areas (historical and heritage areas) 		Time series	Estrategic
		(E0) 0.20.6	Economic data tourism	How much does the tourism that visits the historical and heritage areas contribute economically?	<ul style="list-style-type: none"> Expenditure made by tourists (historical and heritagae areas) - average daily spending per tourist Expenditure made by cruiseship tourists (on land)-average daily spending per tourist Cultural heritage site attraction promotion (€/year) 			Estrategic

Source: HERIT-DATA Project

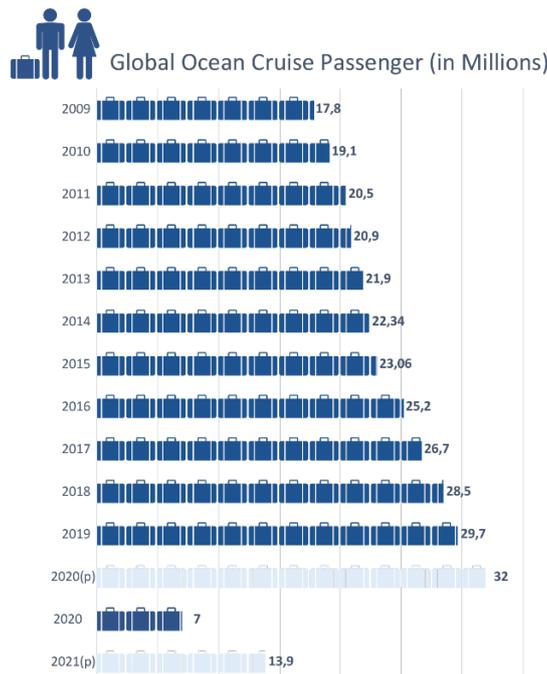


2.5. Trends in Cruise Industry

2.5.1 Global and regional cruise tourism

The cruise industry is one of the largest growing sectors in the tourism industry. Between 2009 and 2019 the number of cruise tourists worldwide rose significantly from 17.8 million passengers in 2009 to an expected 32 million in 2020 until coronavirus outbreak (Figure 9). More than 28.5 million tourists enjoyed a cruise holiday in 2018, contributing €150 billion to the global economy³. According to the 2018 Cruise Industry News Annual Report the global cruise tourism market is expected to grow incrementally between 2018 and 2022 by 6%. Unfortunately, the pandemic paralyzes growth forecasts for 2020 and mid-2021. While it is clear that the extent of the impact of the COVID-19 and the resulting economic crisis will be heterogeneous across the Blue Economy sectors and activities, said impact will also depend on the duration of the crisis, which is still unknown at the time of writing.

Figure 9 Global ocean cruise passengers, 2009-2020 (in millions)



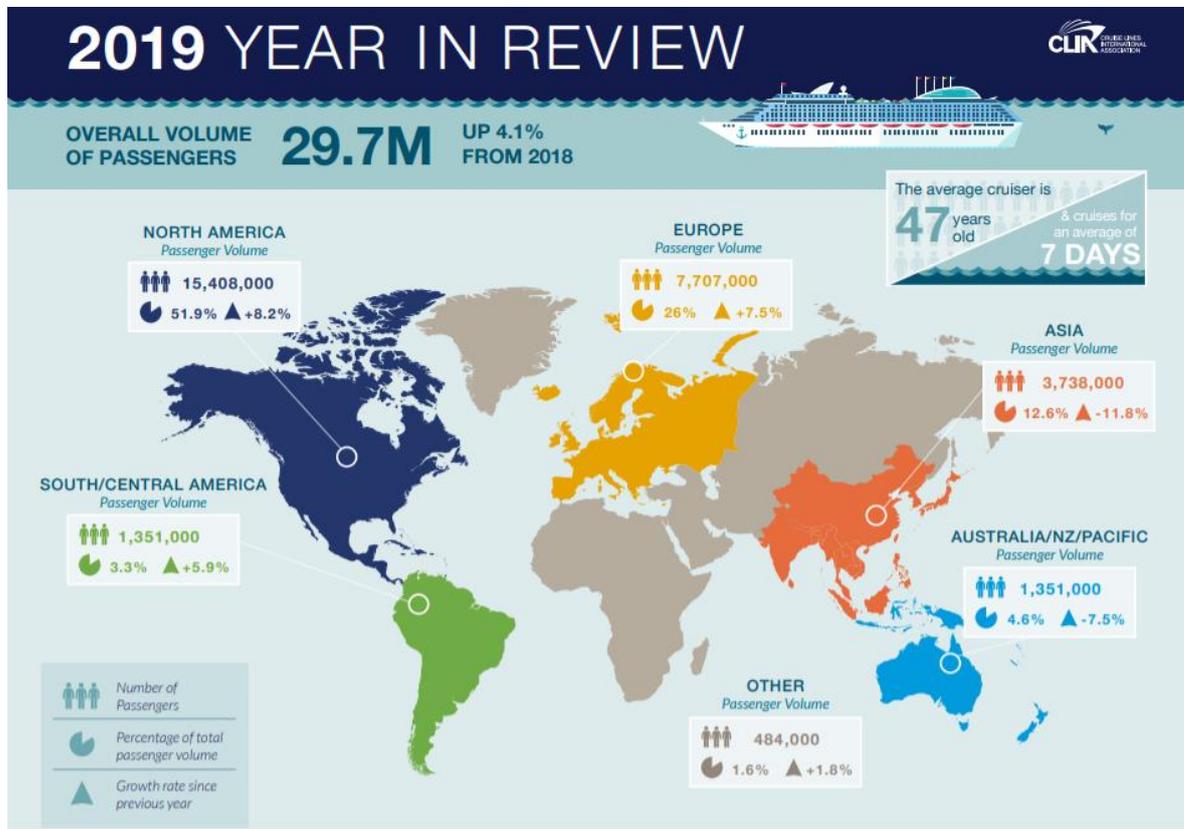
Sources: Own elaboration with information from CLIA, 2021 Cruise Industry Outlook and Cruisemarketwatch for 2020 r (real) and 2021 p (provisional)

4.6.1. Sustainable Cruise Destination

Three main regional cruise tourism markets can be identified: North America; Europe (with the Mediterranean as the most important sub-region); and Asia.

North America remains the largest regional market with a share of 52%, being the most stable and established destination. Europe is the second regional market with a global passenger share of 26% and with the Mediterranean being the top sub-region. Asia (and especially China) is becoming the central pillar of the sector's future growth, with its global passenger share of 12% (Figure 10)

Figure 10 Overall volume of passenger by region, 2019



Sources: CLIA, 2020 CLIA Infographic (<https://cruising.org/es-es/noticias-e-investigaci%C3%B3n/investigaci%C3%B3n/2021/february/2019-global-market-report>)

At the country level, the top-10 cruise source markets have remained unchanged in the last 3 years. North American travellers continued to embrace cruising with an annual passenger increase of 8,5% (14.1 million passengers) in 2019 follow by Germany passengers with an increase of 15%. As expected, due to a reduction in deployment in Asia and Australia, the number of cruisers in these regions was lower than in previous years. (Figure 11)

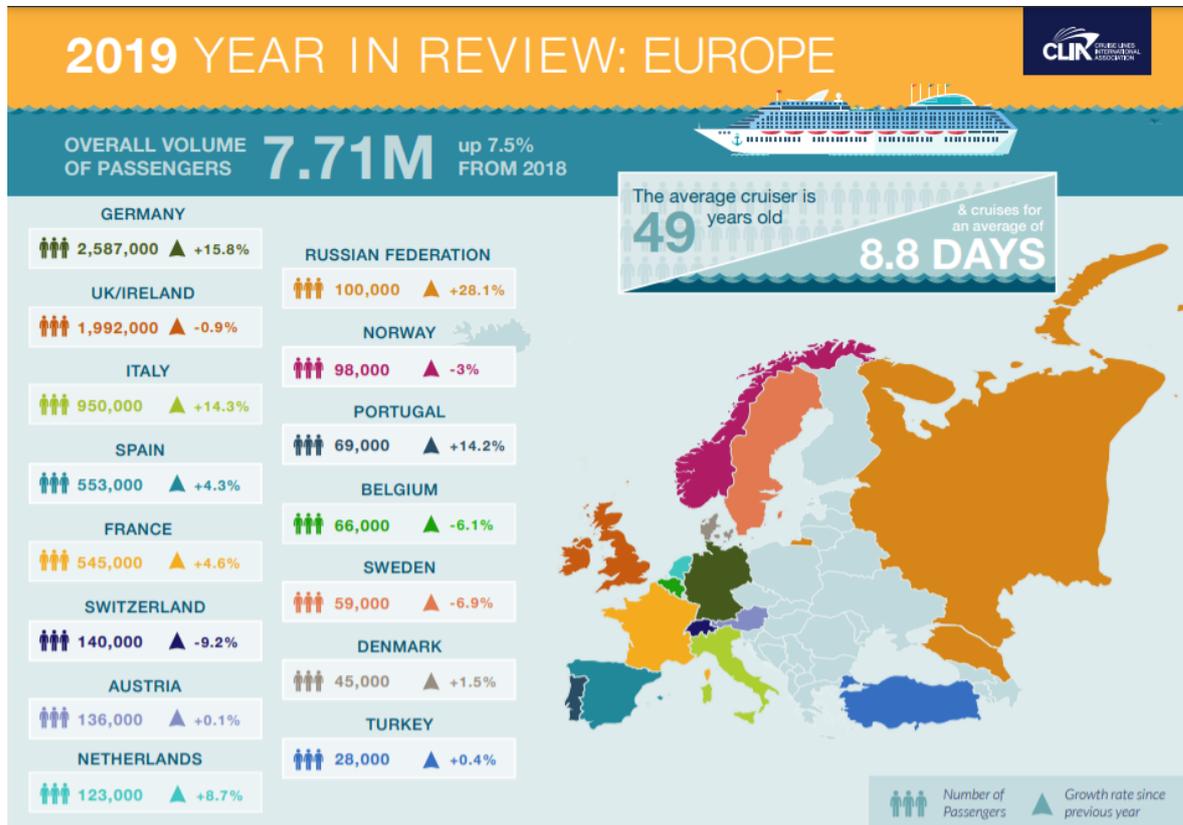
Figure 11 Top-10 cruise source markets (thousand sty

	2016	2017	2018	2019
United States	11.392	11.944 (4.9%)	13.091 (9.6%)	14.199 (8.5%)
Germany	2.018	2.169 (7.5%)	2.233 (3.0%)	2.587 (5.8%)
UK & Ireland	1.960	1.971 (0.5%)	2.009 (2.0%)	1.992 (-0.9%)
Mainland China	2.113	2.397 (13.4%)	2.357 (-1.6%)	1.919 (-18.6%)
Australia	1.281	1.333 (4.1%)	1.345 (0.9%)	1.241 (-7.7%)
Canada	865	921 (6.5%)	971 (5.4%)	1.037 (6.8%)
Italy	751	769 (2.5%)	831 (8.0%)	950 (14.3%)
Brazil	465	445 (-4.2%)	510 (14.6%)	567 (11.3%)
Spain	480	510 (6.4%)	530 (3.9%)	553 (4.3%)
France	554	504 (-9.1%)	521 (3.4%)	545 (4.6%)

Sources: CLIA Global Market Report 2019

Focusing on the European cruise source market, as shown in Figure 12 in 2019 7.7 million Europeans decided to take a cruise. The market has experienced a healthy 7.4% increase since previous year. Although the number of people deciding to take a cruise increases at the European level, the picture is different when looking at the national source markets in 2019. Four national markets (Germany, Russia, Italy and Portugal) showed a positive growth in double-digit and the first two source markets (Germany and UK/Ireland) have a share of 59% of the total source market (7.71 million of passengers).

Figure 12 The European cruise market by source country 2019



Sources: CLIA, 2019 Europe Market Report infographic

The major companies providing cruise services are depicted in Figure 13. These include Carnival Corporation & plc, Royal Caribbean Cruises Ltd, Norwegian Cruise Line Holding Ltd, MSC Cruises and Getting Hong Kong. Carnival holds 39% share market with Royal Caribbean following with close to 24% of the passenger global market (Figure 13). The top-4 cruise groups hold together 83.4% of the global cruise passenger market.

4.6.1. Sustainable Cruise Destination

Figure 13 Major cruise groups



Source: Cruise Industry News⁴

The top-3 cruise groups provide their services through a number of global, regional and national cruise brands (wholly-owned or through an ownership interest), as shown in Figure 14

In 2020, five European operators, two of which are multi-brand groups, held 50% of the market share: CCL (Carnival Corporation & plc) with 40%, followed by MSC Cruises with 31%, RCC (Royal Caribbean Cruises Ltd) with 11%, Thomson with 4.7% and lastly Celestyal Cruise with 1.8%. Costa Crociere and MSC Cruises sell their cruises across Europe, as do the America brands operating in Europe, but otherwise different brands source each national market. Carnival Corporation brands account for a market share of more than 40 percent, including Costa Cruises, the second largest brand in Europe, AIDA Cruises, which is the largest brand in Germany, and P&O Cruises, which is the largest brand in the UK.

⁴ https://www.cruiseindustrynews.com/pdf/wp-content/uploads/2020/03/CIN2020_101.pdf

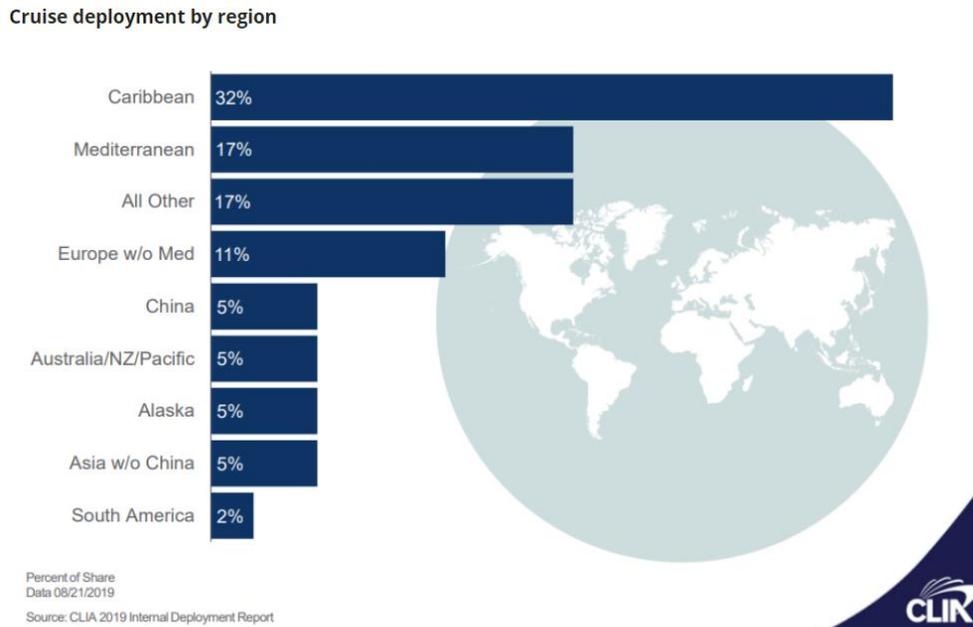
Figure 14 Major cruise groups and their cruise brands



Source: Own elaboration from information included in Cruise Industry news

More than one third (32%) of the **global cruise ship capacity** is currently deployed in the Caribbean, 17% in the Mediterranean and 11% in the rest of Europe (Figure 15).

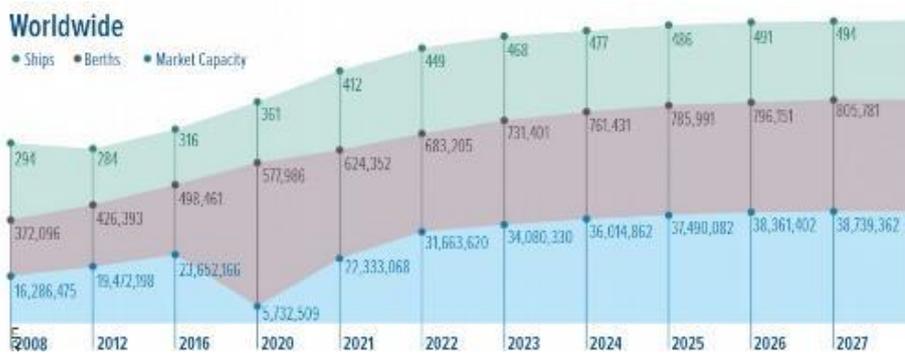
Figure 15 Global cruise ship capacity deployment, 2019



Source: CLIA

Looking at the future, global cruise ship capacity is expected to significantly increase in the following decade. The global ocean cruise fleet in 2020 consists of 361 ships with a total capacity of more than 577,000 berths. Based on the current ship orderbook, the capacity is expected to increase by 36% in terms of the number of ships and by 39% in terms of the number of lower berths until 2027 (Figure 16).

Figure 16 World cruise industry trends



Source: Cruise Industry News

Shipping lines continue to increase the number of orders to European shipyards for the construction of increasingly bigger and more efficient ships. Generally speaking, the next generation of ships will be over 200,000 tonnes and able to carry 5,400 passengers. Between 2021 and 2027, 105 cruise ships are scheduled to be built.

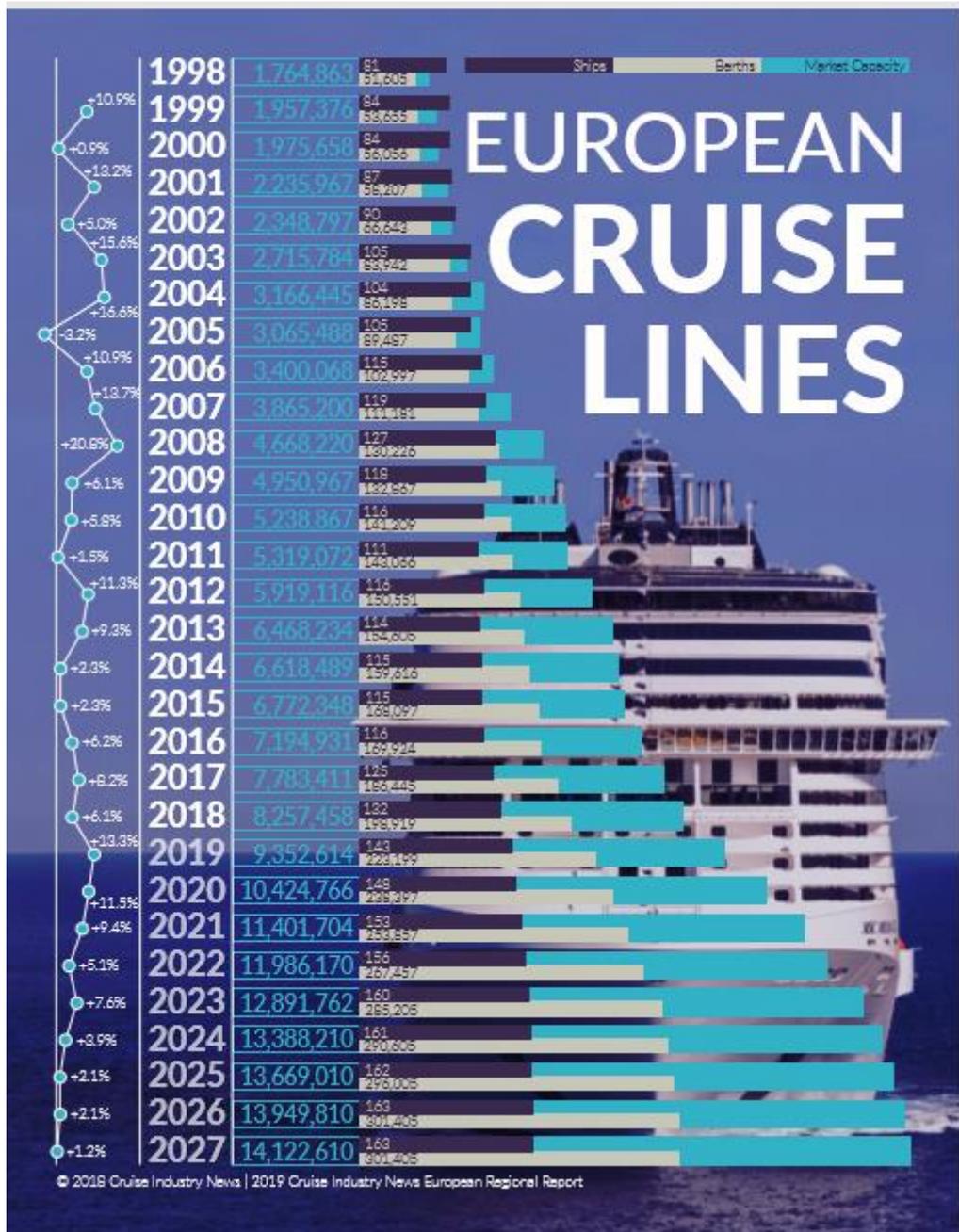
Figure 17 Ocean cruise ship orderbook 2021-2027



Source: Own elaboration with Cruise Industry News orderbook Report information⁵

⁵ https://www.cruiseindustrynews.com/pdf/wp-content/uploads/2020/12/CIN2021_Orderbook.pdf

Figure 18 European cruise line evolution, 1998 – 2028

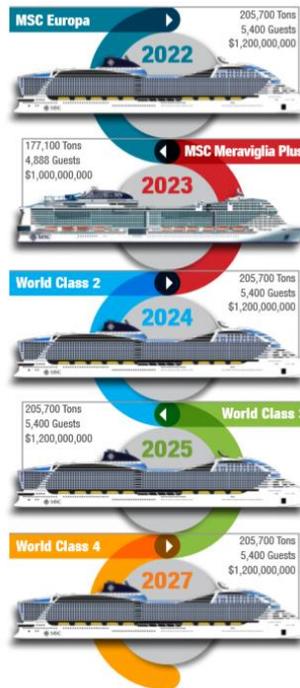


Source: Cruise Industry New

4.6.1. Sustainable Cruise Destination

The shipping companies want to ensure market growth and increase their revenue. To that end, this year's fall in fuel prices was a crucial element, together with the cost reduction undertaken by a number of operators. In the medium term, and in order to ensure revenue growth, some companies are advocating not only the construction of bigger ships to be able to increase the number of passengers transported, but also making these ships more efficient through the use of alternative fuels. Of the vessels on order, 25 of them are expected to be fuelled by Liquefied Natural Gas (LNG). The Carnival Corporation (CCL) group, MSC, Royal, P&O, Princess, TUI and Ponant are opting for this type of fuel, as can be seen from their ships on order. CCL is leading the way, ordering a total of 5 LNG ships after introduce 7 until 2019 in the market for its AIDA, Costa Cruises, Carnival and P&O shipping lines. MSC also plans on building five vessels powered by this fuel (Figure 19), and these will be delivered between 2022-2027. The availability of LNG in ports will be a major factor as many of the vessels scheduled to be built will use this kind of fuel⁶. At this point it is important to point out that between 2021 and 2027, over 30 new expedition ships will be delivered. There is no doubt the appetite for expedition cruising is growing and the new generation of ships are differentiated enough to provide options.

Figure 19 MSC LNG Delivery Schedule



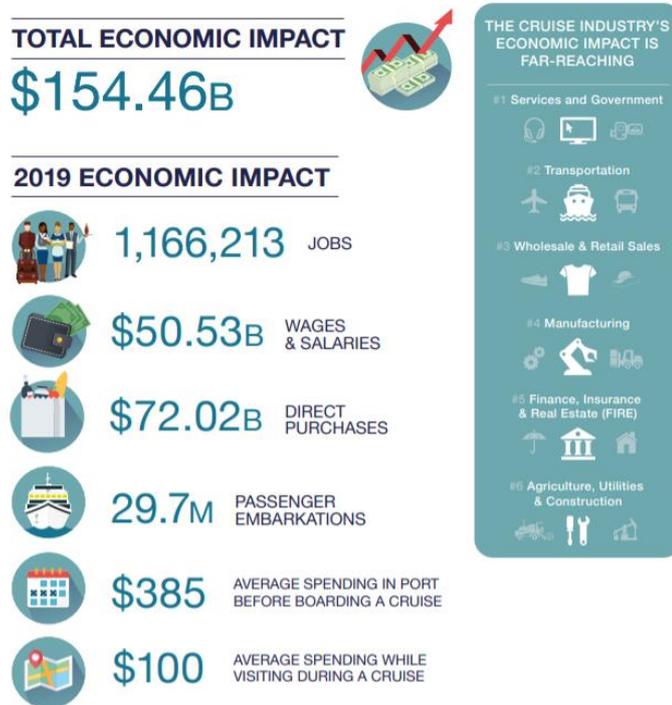
Source: Cruise Industry News

⁶ <https://www.cruiseindustrynews.com/cruise-news/cruise-ship-orderbook.html>

4.6.1. Sustainable Cruise Destination

Cruise tourism's economic impact in the world in 2019 is shown in Figure 20. According to CLIA (2020)⁷, an estimated 148.4 million onshore visits by passengers and crew helped generate \$72.0 billion in direct cruise sector expenditures at destinations and source markets around the world. This \$72.0 billion also includes the direct expenditures of the cruise lines for goods and services in support of their cruise operations. These expenditures generated total (direct, indirect and induced) global output of \$154.5 billion. The economic output due to the cruise industry continues to produce new jobs and income. For the third consecutive year, the cruise industry supported the employment of over 1 million employees, requiring nearly 1.2 million FTE⁸ employees in 2019. These employees earned \$50.5 billion in income. The details of this global contribution are discussed in the following sections of this report.

Figure 20 Contribution of cruise Industry to the Global Economy, 2019



Source: CLIA, 2020

⁷ The Economic Contribution of the International Cruise Industry Globally in 2019, <https://cruising.org/-/media/research-updates/research/global-cruise-impact-analysis---2019-final.ashx>

⁸ Full Time Equivalent

2.5.2 COVI-19 and Impact in Cruise Traffic

Two milestones mark the evolution of cruise sector in relation to the Covi-19 pandemic. First one, was the incident in the **Diamond Princess** cruise ship (Figure 21)

Figure 21 Diamond Princess cruise ship



Source: www.elindependiente.com

It has been anchored at the Yokohama port in Japan since February 3, 2020. A total of 691 cases of the coronavirus disease 2019 (COVID-19) infection had been confirmed as of February 23. The government initially assumed that the infection was not spreading aboard and therefore indicated that any persons who either tested negative for the virus or were asymptomatic should immediately disembark. However, on February 5, the government set a 14-day health observation period because of the severity of the infection. Passengers confirmed to be free from infection began disembarking on Day 15 (February 19) of the quarantine. The effectiveness and validity of infection control, justification for the timing of inspections, and even the nature of COVID-19 itself now are all in question⁹.

⁹ <https://pubmed.ncbi.nlm.nih.gov/32207674>

Secondly, on 13th of March the **Centers for Disease Control and Prevention (CDC)** in the USA announced its "no sail order" for all cruise ships. According to the CDC, the order will remain in effect until the "earliest of three situations:" occurs: Federal health officials determine COVID-19 is no longer a public health emergency, Redfield rescinds or modifies the order based on specific public health or "other consideration" or "100 days from the date of publication in the Federal Register.

These two events have resulted in the paralysis of cruise lines' activity worldwide. In mid-March 2020 all cruise departures are stopped. Originally this break in activity was supposed to last a month but over time it has proved to be longer. As a consequence, cruise companies start to send their staff to home (crews, administrative, directives) leaving ships layed up and with the minimum staff to maintain the ship to reduce operative costs. This implies that the resumption of activity according to company's estimations would take more than 40 days from the time it is announced as this is the time necessary for the preparation of the vessel.

Faced this scenario, shipping companies are considering survival. Even if operating costs are reduced, they still have to pay fixed costs which they must continue to meet. Cruise companies were forced to look for different formulas to guarantee their financing. Some of them resort to taking out credit lines, as NCL credit \$1.55b or RCL \$2,2 mil millions. Others, as Carnival Corporation sold 8% stake to Saudi Arabia's public investment fund or TUI¹⁰ that received the approval of the German government for a bridging loan of 1.8 billion euros from the KfW Bank. The funds of Germany's state-owned development bank are to be used to increase TUI's existing credit line with its banks amounting to 1.75 billion euros ("Revolving Credit Facility").

According to CLIA, economic impact of the suspension of cruise operations will assume a loss over 1.17 million jobs across a wide cross-section of industries and sectors, from ground and air transportation to food and beverage, lodging, manufacturing, hotels, professional services and a broad range of suppliers and service providers throughout the world. Unfortunately, the impacts of COVID-19 are being felt across this vast community, with up to 2,500 jobs lost each day that cruises are not operating. When the time is right for cruise operations to safely resume, cruising will be an important contributor to fuelling the global economic and societal recovery.

Following the global lull in cruise operations in mid-March, cruising resumed in parts of Europe, Asia and the South Pacific from July 2020. From July to December 2020 there were more than 200 sailings. The success of these first sailings demonstrates that the new protocols are working as designed, to mitigate the risk of COVID 19 among passengers, crew and destinations visited by cruise ships. The industry is on track to resume activity in the United States, Canada, Mexico, the Caribbean and elsewhere in 2021.

¹⁰ <https://www.tuigroup.com/en-en/media/press-releases/2020/2020-03-27-tui-ag-german-federal-government-approves-kfw-bridge-loan>

2.5.2.1 Post COVID-19 Future of Cruising

Given the importance of the industry, the reopening of the cruise sector was much awaited by all the stakeholders related to cruise activities: cruise companies, port authorities, port terminals, local businesses, hotels, tourist guides, transport services, cultural and food services, among others.

However, due to the disparity in the evolution and subsequent recovery from COVID19, the return of cruise ships is unevenly evolving across the globe. Moreover, it should be noted that the provision of these services was a priori based on cabotage maritime shipping, thus limiting their activity to national itineraries.

In this regard, Australian waters were one of the first countries to offer national cruise itineraries. For example, True North Cruises, which specialises in adventure cruises, launched its Australian itineraries in July last year, while Coral Expedition resumed operations in October last year offering expedition voyages. In both cases, cruises were offered to a limited number of passengers.

In this line, the Asian continent was another of the first geographical areas to resume its activity at the end of last year with some luxury or expedition cruises. Following this line, last summer Taiwan allowed Genting Hong Kong's Dream Cruises to start a national cruise programme. In addition, due to its success, other countries such as Singapore and Malaysia started to offer ocean cruises, operated by both Dream Cruises and Royal Caribbean International. Also from Japan, some cruisers were able to embark on itineraries offered by Asuka Cruises or Mutsui OSK in November last year.

In the Mediterranean area, Italy, Greece, Cyprus, Croatia, Malta and Israel were also among the countries most firmly committed to the return of cruise ships. Proof of this was that in summer 2021 ships belonging to the companies Costa Cruises, MSC Cruises, TUI Cruises, AIDA and Hapag-Lloyd were already sailing. At the same time, companies such as TUI Cruises and Hapag Lloyd also began to resume their activity in Northern Europe.

In parallel, some regions in America also timidly resumed some activity with luxury cruises such as the ones offered by Metropolitan Touring in the Galapagos or Celebrity Cruises which has just this month started offering cruises in the Caribbean.

2.5.2.1 Protocols around Cruise Activities

CLIA adopted COVID-19 Member Policy¹¹ as a condition of membership within CLIA, all ocean-going cruise line members with the capacity to carry 100 or more persons onboard are required to implement the COVID-19 Member Policy. The Policy is applicable worldwide, wherever there are not more stringent requirements in place from governments and health authorities. For example, the Policy would not apply inside the U.S. where more specific requirements will be imposed under the Framework for Conditional Sailing and

¹¹ <https://www.cruising.org.au/Regulatory/COVID-19>

associated technical instructions. The COVID-19 Member Policy entails comprehensive prevention, detection and response strategies from the time of booking through the cruise itinerary and at disembarkation. Highlights of the policy include:

- **Medical:** Augmented shipboard medical staffing, capacity to provide for intensive care of COVID-19 cases, illness reporting, diagnostic equipment, personal protective gear, daily temperature checks for staff and crew and a dedicated onshore entity to address all inquiries and aspects related to COVID-19 case management, among others.
- **Ship Environment:** Reserved cabins for isolation, physical distancing, air management risk mitigation strategies to increase fresh air flow and deploy enhanced filtration technologies, strengthened sanitation protocols, hand washing stations, signage, among others.
- **Measures for Crew:** Conduct 100% testing of all crewmembers, with a requirement for negative test results, prior to their departure from home, prior to embarking the ship, upon conclusion of a minimum 7-day quarantine and at least once monthly; daily symptom screening, mask-wearing in public spaces and service areas, limited cabin occupancy and access to mental health support resources, training in new protocols, among others.
- **Measures for Passengers:** Frequent communication from the time of booking including instructions for complying with public health requirements, staggered guest arrivals and departures, completion of a health declaration, requirement for a negative test result prior to boarding, health screening, physical distancing, mask-wearing, strict adherence to shoreside protocols at ports of call, tracking and tracing for at least 30 days following disembarkation to facilitate post cruise communication, among others.
- **Case Detection and Management:** Immediate isolation for possible or confirmed cases of COVID-19 in pre-designated, reserved isolation cabins, rapid implementation of response protocols to identify and quarantine close contacts, risk-based response plans, screening and testing of disembarking passengers who are close contacts of confirmed COVID-19 cases, among others.
- **Response Mobilization:** Pre-arranged response logistics for each itinerary for transportation providers, shoreside quarantine and medical facilities in the event infectious illness exceeds onboard management capability; medical priority to be assigned to disembark confirmed COVID-19 cases as soon as reasonably practical, among others.
- **Implementation, Audit and Review:** Verification of implementation by Member cruise line CEOs either prior to initial restart or during annual review of the CLIA Compendium of Member Policies; following any cruise on which COVID-19 is detected, Members are to conduct a review at the first opportunity to identify opportunities for improvements, among others.

- Supplemental Procedures Specific to Brands/Ships: Development of plans as needed to implement this Policy and to reflect all necessary details for ship or fleet-specific prevention, surveillance, and response protocols applicable in the ports and regions in which they operate. Such plans are to also address contractual services, if any, that provide for applicable medical response measures and procedures for transport and care ashore.

Figure 22 Cruise Ships Equipped for Health



CRUISE SHIPS EQUIPPED FOR HEALTH

Prepared and proactive when it comes to the health and wellness of passengers and crew.

Crew

- Onboard staff are trained in first aid and the ship's public health policies.
- Crewmembers regularly refresh their training on health and wellness responsibilities.
- Ongoing training is monitored through robust record-keeping by cruise lines.

Collaboration & Oversight

- Passenger and crewmember health is protected by a robust system of oversight and enforcement.
- CLIA and the cruise industry work collaboratively with the U.S. Centers for Disease Control and Prevention's (CDC) Vessel Sanitation Program (VSP) to implement comprehensive sanitation practices with at least two unannounced inspections per year.
- Public health authorities worldwide inspect cruise ships and enforce health requirements.
- Cruise ships undergo regular internal public health reviews throughout each year.
- CLIA Cruise Line Members implement health and emergency medical practices developed in partnership with the American College of Emergency Physicians (ACEP).

Passengers

- Passengers are screened for certain contagious illnesses prior to boarding.

Clean Ships

- Cruise ships regularly clean and sanitize facilities on board.
- Cabins are thoroughly cleaned at least once daily, while restaurants and other common areas are cleaned multiple times a day.
- After every cruise, crew members clean the ship from top to bottom to prepare for the next voyage.

Medical Resources

- Licensed physicians and registered nurses must be available on cruise ships.
- Clinical staff members must be certified in advanced life support.
- All ships must have defibrillators, cardiac monitors, X-ray machines and lab equipment.

The Cruise Lines International Association (CLIA) is the world's largest cruise industry trade association. CLIA represents the interests of cruise lines, travel agents, port authorities and destinations, and various industry business partners before regulatory and legislative policy makers.

www.cruising.org

CLIA CRUISE LINE INTERNATIONAL ASSOCIATION, INC.

Source: <https://safety4sea.com/clia-issues-new-measures-against-coronavirus/>

In January 2020 the EU HEALTHY GATEWAYS¹² joint action switched from operating under the interepidemic mode to operating in an emergency mode, at the request of the European Commission's Directorate-General for Health and Food Safety (DG SANTE). An ad-hoc working group was established with members from the EU HEALTHY GATEWAYS

¹² <https://www.healthygateways.eu/>

joint action consortium. The working group produced documents as guidance, considering the Communications issued by the Commission:

- a) “A European roadmap to lifting coronavirus containment measures”,
- b) “Towards a phased and coordinated approach for restoring freedom of movement and lifting internal border controls”,
- c) “COVID-19: EU Guidance for the progressive resumption of tourism services and for health protocols in hospitality establishments”,
- d) “COVID-19: Guidelines on the progressive restoration of transport services and connectivity”,
- e) “Tourism and transport in 2020 and beyond”

On June 2020 the EU Healthy Gateway published a document “Interim advice for restarting cruise ship operations after lifting restrictive measures in response to the COVID-19 pandemic”.¹³ It document provides general guidance to EU/EEA MS and to cruise lines about options for measures on travel and tourism that could be applied after lifting the restrictive measures implemented in response to the COVID-19 pandemic.

Many governments and local authorities across the EU and worldwide have developed their own protocols in order to allow for the cruise restart. Moreover, cruise lines have developed their own cruise ship health protocols and many have restarted cruising or are planning to restart. At the same time, each port must prepare their own COVID-19-specific public health emergency contingency plan (COVID-19-PHECP) in order to prepare and safely receive cruise ships. Some ports restarted cruising activities and some others are in the process of restarting. Many ports did not have the capacities, processes and procedures in place to manage COVID-19 events on cruise ships. The document “Tool for Contingency Plan Development and Assessment for Ports”¹⁴ is a guide in the form of a two level process map intends to provide the path, the processes and procedures that a port/local authority needs to follow in order for a cruise ship to be able to safely revisit the port.

Cruise restart Process Map – Level 1 (CRPM-L1) describes the process in a high level management/stakeholder view. (Figure 23). The process follows the logical paths and describes the stepped process needed for the cruise to be able to restart. Cruise restart Process Map – Level 2 (CRPM-L2) (Figure 24) describes the process at an operational

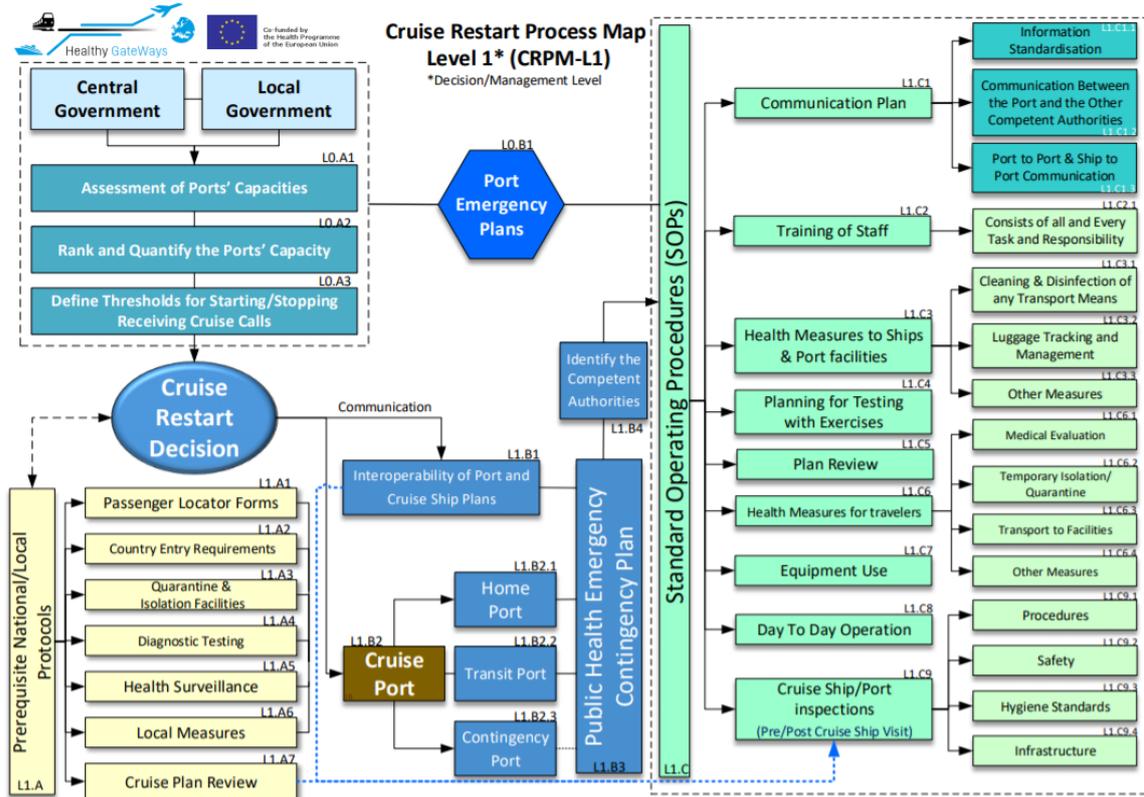
¹³ https://www.healthygateways.eu/Portals/0/plcdocs/EU_HEALTHY_GATEWAYS_COVID-19_RESTARTING_CRUISES.pdf?ver=2020-07-08-131911-653

¹⁴ https://www.healthygateways.eu/Portals/0/plcdocs/Annex_3_Explanatory_notes_CRPM_19_02_21.pdf?ver=2021-02-20-141857-727

4.6.1. Sustainable Cruise Destination

level All the processes described might not be suitable for all cases, but their suitability can be examined on a case by case basis. The instructions provided in the Healthy Gateway document aim to assist the competent authorities based on the local and national capacities and after considering the epidemiological situation in the necessary steps to be followed, in order to develop the essential capacities before restarting cruise ship activities in their ports.

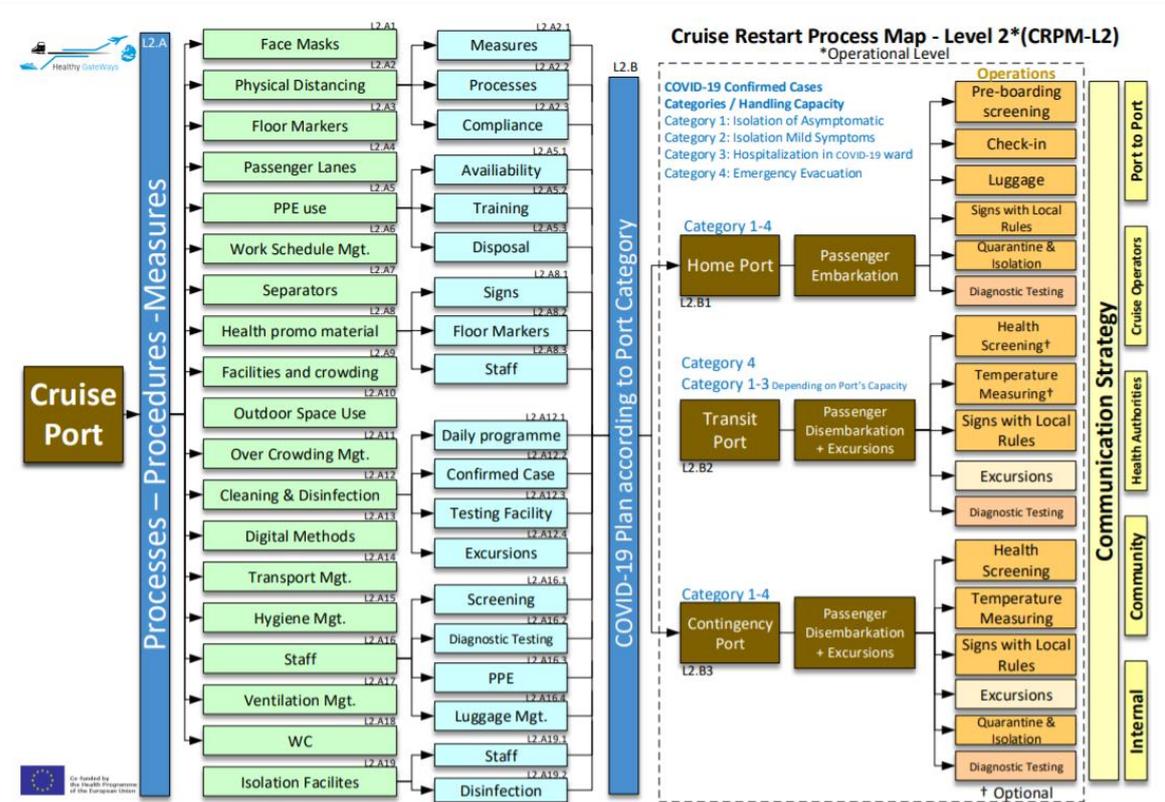
Figure 23 Cruise restart Process Map – Level 1 (CRPM-L1)



Source:

[https://www.healthygateways.eu/Portals/0/plcdocs/Annex_2_Cruise_Restart_Process_Map_\(CRPM\)_19_02_21.pdf?ver=2021-02-20-131047-997](https://www.healthygateways.eu/Portals/0/plcdocs/Annex_2_Cruise_Restart_Process_Map_(CRPM)_19_02_21.pdf?ver=2021-02-20-131047-997)

Figure 24 Cruise restart Process Map –Level 2 (CRPM-L2)



Source:

[https://www.healthygateways.eu/Portals/0/plcdocs/Annex_2_Cruise_Restart_Process_Map_\(CRPM\)_19_02_21.pdf?ver=2021-02-20-131047-997](https://www.healthygateways.eu/Portals/0/plcdocs/Annex_2_Cruise_Restart_Process_Map_(CRPM)_19_02_21.pdf?ver=2021-02-20-131047-997)

Following the document some points of the map are detailed below:

L0.B1 Port Emergency Plan

The COVID-19-PHECP should be linked with the port emergency plan and protocols and interoperability between the plans should be ensured.

L1.A1 Passenger Locator Forms (PLFs)

Passenger Locator Forms (PLFs) provide an appropriate method for rapidly collecting passenger contact information. During the COVID-19 pandemic, PLFs have commonly been used by countries globally as a simple and effective tool for contact tracing. Countries that require completion of PLFs are currently using paper-based formats or have developed national online systems.

A European Digital Passenger Locator Form (dPLF) system for all three transport sectors (air, maritime and ground-crossings) is being developed by the EU HEALTHY GATEWAYS Joint Action. For countries that will be using the EU HEALTHY GATEWAYS dPLF system, passengers on a cruise will only need to complete one dPLF through the European dPLF

web application. The system will then automatically give access to the dPLFs to competent authorities of all the countries that the ships will visit during the specific itinerary. The passengers will need to complete the dPLF before boarding and they will receive a QR code. They will be able to edit the dPLF up to the end of the trip. Depending on the local regulations the passengers may need to display the QR code when they are disembarking to a country.

L1.A3 Quarantine and Isolation Facilities

It is suggested that specific facilities are dedicated for quarantine or for isolation of exposed or confirmed (asymptomatic or mild symptomatic) cases of COVID-19, such as hotels. These are usually commissioned from central or local governments and used when needed. The arrangements for quarantine/isolation can be made by the cruise lines or otherwise according to the local rules and regulations.

L1.A4 Diagnostic testing

Diagnostic testing is an essential capacity of the competent authorities at the port to confirm/exclude infection among travellers and staff in case of a suspect outbreak or a single infection. Moreover, depending on the national policy it has been used as part of the health screening of incoming travellers to a country. Diagnostic testing should be conducted in cooperation with other points of entry, in order to avoid incidents where passengers are asked for a diagnostic test at multiple points of entry. WHO indicates that international travellers by default should not be categorized as suspected COVID-19 cases. Therefore, WHO does not recommend healthy travellers as a priority group for SARS-CoV-2 testing, in particular when resources are limited, to avoid diverting resources from settings and patients where testing can have a higher public health impact and drive action.

L1.A7 Cruise Plan Review

A cruise plan review committee should be established at a central level in the country in order to review the contingency plans of cruise ships planning to visit ports in the country and to provide advice to any issue related to health measures on ships. The committee should consist of persons who have competency and experience in public health event management on cruise ships.

L1.B1 Interoperability of port and cruise ship plans

Interoperability of the port COVID-19-PHECP¹⁵ with the cruise ship contingency plan/outbreak management plan should be ensured. Before cruise lines resume operations, the cruise plan review committee should ensure that the necessary prerequisites are met and have been fully addressed in this cruise ship contingency plan/outbreak management plan. Moreover, interoperability of port PHECP with (sub)national PHECP is essential.

¹⁵ PHECP Public health emergency contingency plan

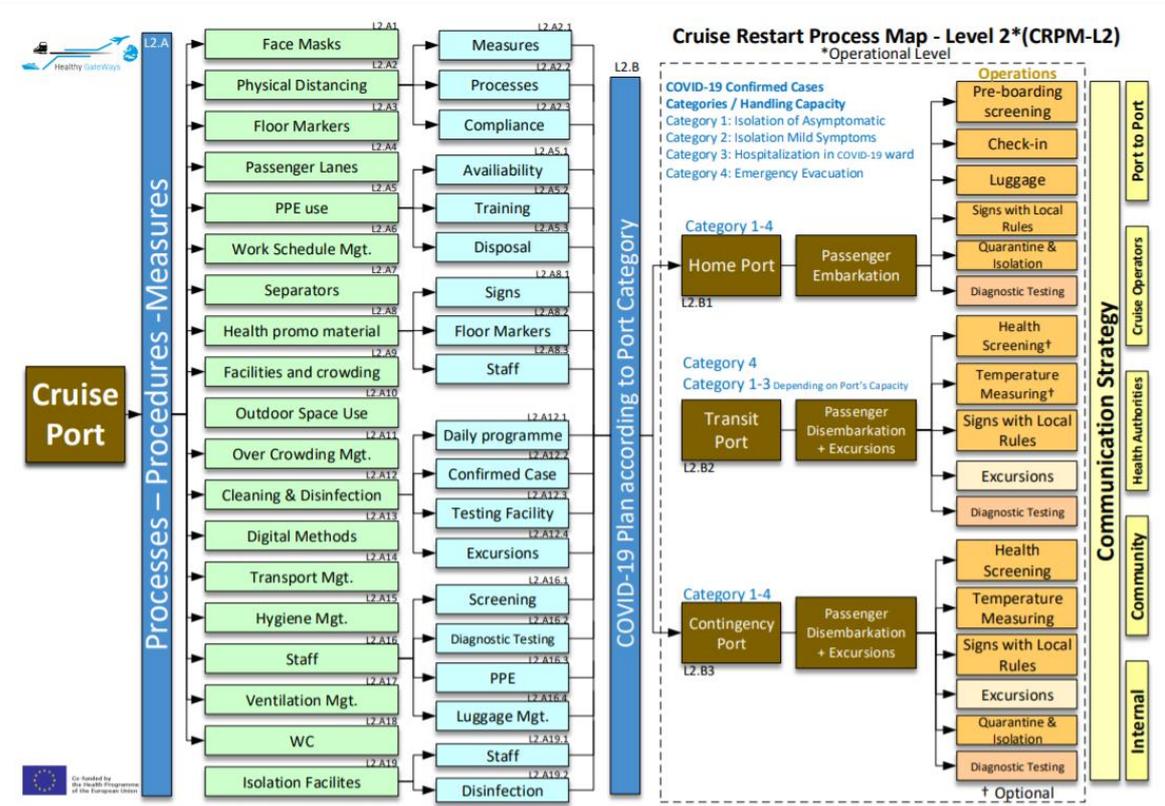
L1.B2 Cruise Port

It is very important to decide which category each port will belong to (home port or transit) and take the appropriate measures to prepare. The local/port level authorities should cooperate with the central/national level authorities in order to define the ports capacities in the country and considering other matters such as availability of facilities for isolation and quarantine such as “COVID-19 hotels”, hospitals and others. According to the core capacities, it should be defined which ports can safely manage public health events both on ships that are calling the port, as well as at the port facilities. This should be communicated to the relevant stakeholders so as to proceed with the agreements for ship calls respecting the port capacities.

As we said before, Cruise restart Process Map – Level 2 (CRPM-L2) describes the process at an operational level. All the processes described might not be suitable for all cases, but their suitability can be examined on a case by case basis. Each cruise port and according to its classification must prepare for the cruise restart procedures. The process below identifies the necessary steps and can be used as a checklist. More information about each step of the process could be review in the document¹⁶. Certain processes need to be jointly defined or agreed by the port and the cruise operators (i.e. passengers’ lanes, health promotion material, laboratory testing and checking of results, etc.).

¹⁶ See reference14

Figure 25 Cruise restart Process Map – Level 2 (CRPM-L2)



Source:

[https://www.healthygateways.eu/Portals/0/plcdocs/Annex_2_Cruise_Restart_Process_Map_\(CRPM\)_19_02_21.pdf?ver=2021-02-20-131047-997](https://www.healthygateways.eu/Portals/0/plcdocs/Annex_2_Cruise_Restart_Process_Map_(CRPM)_19_02_21.pdf?ver=2021-02-20-131047-997)

Many governments and local authorities across the EU and worldwide have developed their own protocols in order to allow for the cruise restart. Moreover, cruise lines have developed their own cruise ship health protocols (MSC¹⁷, Carnival Corporation¹⁸) and many have restarted cruising or are planning to restart.

At the same time, each port must prepare their own COVID-19-specific public health emergency contingency plan (COVID-19-PHECP) in order to prepare and safely receive cruise ship. An example of it is Canary Port where the Government of the Canary Islands has authorized cruises to begin sailing between the ports as last November, provided that the companies committed to a strict sanitary protocol established by the departments of

¹⁷ <https://www.msccruises.com/en-gl/MSC-Health-And-Safety-measures.aspx>

¹⁸ <https://www.carnivalcorp.com/Updates-on-Cruise-Operations/>

4.6.1. Sustainable Cruise Destination

Health, Public Works, Transport and Housing as a precaution for both tourists and residents. Among the conditions that the cruise lines have been had to meet is providing insurance in case of an outbreak of COVID-19 among the passengers as well as establishing agreements with local hospitals and hotels on each island in case a quarantine is required.

Despite COVID-19 and uncertainty over when sailing will reconvene totally, multiple report says that there has been increase in the booking for 2021 in comparison to 2019. This shows people are still looking forward to future travel on cruises, however, it may be harder to convince first-time cruisers. The poll conducted by CruiseCritic.com shows 75 percent of 4,600 cruise passengers are interested in cruising after COVID-19 ends (KPMG: 2020). Nevertheless, cruise destinations need a COVID-19 recovery plan.

As Bermello Ajamil & Partnert (2020) said: "...the pandemic has left immediate short-term impacts from which we will recover; but more importantly it has planted the seeds for profound social change. The shutdown of our social events and the limiting of people's lives to the confines of their homes and neighbourhoods has left people hungry to return to normalcy, to social events, entertainment, arts and to travel. In the long term, society might be moving to more work from home, retail by internet, healthcare by app. leaving an undeniable desire for more social interaction and travel. Ironically, the travel industry which has been impacted the most might be the largest beneficiary of the long term rebound, but only if it is safe. The cruise industry has the ability to meet that challenge better than most. The COVID 19 pandemic requires a robust unified and consistent response from the Cruise Industry as it seeks to restart its business, gain consumer acceptance, meet the public health needs of the communities and bring confidence back to the financial markets. Any approach that is not holistic will be counterproductive at the end".

As the cruise industry is the one travel product that can control its environment better than any other travel product on the market could be possible that take a recuperation as soon it has been impacted and will be able to be the most might be the largest beneficiary of the long term rebound. However, As cruise news said¹⁹, COVID-19 has changed – and will continue to change – the way we travel. To ensure passengers are comfortable with their return to cruising, operators will need to make the guest experience as smooth and safe as possible. Connectivity will play a key role in delivering that experience, helping vessels implement virus protection and prevention measures while providing a solid foundation for the outstanding guest experience that is essential to maintain cruisers' loyalty. The bottom line is that guests will feel safe if they know they are supported by a solid foundation.

Focus in a rebound, we need to analyse which were fuelled trends that growth market before pandemic (CLIA 2019-2020 Trends & Industry Outlook and Cruise Industry News) and after lockdown summarized below:

¹⁹ https://www.cruiseindustrynews.com/pdf/wp-content/uploads/2020/09/CIN2020_RTS.pdf

4.6.1. Sustainable Cruise Destination

- The age profile of the cruising market has lowered in recent years. A new generation (Millennials) are taking to cruising in increasing numbers and the future will be Gen Z.
- Responding to this rapidly changing market, cruise line companies have adapted their offers to meet the needs and expectations of today's increasingly sophisticated passengers.
- Secondhand market: the emerging group of new cruise lines and startups are looking at acquisitions of existing cruise ships, which may fuel a warm secondhand market, which saw a historical high in the number of transactions in 2019.
- New Brands: while 2020 will see a record number of new ships entering, two new brands will steal the show as Virgin Voyages and The Ritz-Carlton.
- Conscious Travel: travellers want to see the world in a conscious, mindful way. The cruise industry is more conscientious than ever, working to local destinations to local cultures, landmarks and minimize environmental footprints.
- Passengers expect online connectivity on board ships. Instagram photos are driving interest in travel around the world. Cruise passengers are filling Instagram feeds with diverse travel experiences both onboard and on land from several cruise destinations.
- On board smart tech: Travelers use tech in daily lives and are expecting smart tech when vacationing as well. Cruise lines have adopted technology for cruise travelers—including keychains, necklaces, bracelets, apps and more—in order to provide a highly personalized travel experience while on and off the ship.
- There is rising demand for luxury travel on cruise ships and expedition ships. ten expedition ships are scheduled to enter operation in 2020.
- Digitalizing the Passenger Experience: Digital kiosks supporting everything from check-in/check-out to excursion bookings to interactive gaming in the casinos have become a key tool for cruise operators to interact with passengers. Robust connectivity will allow cruise operators to transfer those service and entertainment functions to passengers' tablets and mobile phones, as well as deliver digital versions of programs and schedules.
- Revolutionizing Onboard Healthcare: While access to medical care for passengers and crew has always been a priority for cruise operators, it will take on an even more prominent role over the next few months. Telemedicine will enable onboard medical staff to consult with shoreside doctors and facilities, including rapid test results, sharing digital images and vital sign monitoring and coordinating hospital transfers in the event of an emergency.
- Smart Sensors for Passenger: Safety Tech-savvy cruise operators have begun to roll out wearable technology to enhance the guest experience; Carnival Corporation, for example, allows passengers on Princess Cruises Medallion Class ships to open

4.6.1. Sustainable Cruise Destination

cabin doors, order food and beverages and navigate the ship via a wearable RFID tag connected to a network of sensors throughout the vessel

- **Off peak adventures:** The off-peak season is rising in popularity whether travellers want to escape the cold in a tropical locale or embrace the chill in a new destination. Cruising offers some once in a lifetime experiences during colder months including excursions to see the Northern Lights, visiting a penguin colony and touring European Christmas markets.
- Cruise ships themselves are increasingly the passenger destination as their range of on-board amenities and experiences expands.
- **Green Push:** Cruise lines are racing to reduce single use plastics, not only including straws and water bottles, but working but through the supply chain to eliminate packing materials and others items. Modern and large cruise ship enter in services in 2020 with exhaust gas cleaning system enabling them to meet the latest air emission regulation while burning heavy fuel oil.
- Overnight stays at ports of call are increasing.
- Inter-generational cruising is increasing as on-board amenities cater for all age groups.
- Cruise ships are increasingly being designed to appeal to the cultures of their main passenger groups. Experiential travel has evolved into achievement travel as vacationers are looking for experiences beyond sightseeing. Bucket lists have become goal-oriented and cruise lines are meeting these demands.
- **Environmental Sustainability:** The development and identification of new technologies and cleaner fuels is a top priority for the cruise industry, which continues to make substantial investments in reducing its environmental impact.

Cruise tourism is very volatile and yet at the same time readily adaptable; indeed, in recent years these changes have made it necessary to repeatedly rethink the offer to adapt it to the new tastes and demands of cruise passengers, in light of this continuing expansion.

In this regard, the strategy of cruise destinations should be to present innovative and sustainable products that offer cruise passengers the possibility of new experiences. Therefore, it is crucial for the offer to keep up-to-date on trends in the design, distribution and marketing of various tourism products, as well as responding to new concepts in the living environment that reflect how the destination is perceived, felt, understood and portrayed. The implementation of tools that make it possible to identify cruise passengers' preferences and present them with a product offering suited to their tastes will not only help ensure their satisfaction but also have a positive impact on their visit.

2.6. Smart City and Destinations

According to AENOR²⁰ **smart city** is the holistic view of a city that employs ICT for the improvement of the quality of life and accessibility of its inhabitants, and ensures constant improvement in sustainable economic, social and environmental development. A smart city allows inhabitants to interact with it in a multi-disciplinary fashion and is adapted, in real time and in a quality and cost efficient manner, to their needs. It offers open data, solutions and services geared towards residents as people, to deal with the effects of growing cities, in public and private domains, through innovative integration of infrastructure with smart management systems. One of the fundamental vectors is **sustainable development**, understanding for this according to AENOR efficient resource management of a smart city must satisfy the economic, working, social and aesthetic needs of its residents, in addition to respecting cultural integrity, the environment and the biological diversity of the region.

Smart destination and its emergence is directly related to the smart city concept. SEGITTUR²¹ defined smart destination as “an innovative space, accessible for all, established on a cutting edge technology infrastructure which guarantees sustainable development of the land, facilitates the interaction and integration of the visitor with the surroundings and increases the quality of their experience in the destination, as well as the quality of life of residents”.

Sustainability is at the crux of the growth of smart tourism and more destinations are now prioritizing it as a strategic objective in the tourism planning process. A greater emphasis is placed on planning and implementation of sustainable measures through smart solutions involving various entities including government, and other such stakeholders that encompass private and public sector institutions. Such initiatives have impacted infrastructure development both from broader across various sectors and narrower perspectives, the latter being specifically related to tourism. This may be seen in the case of specific developmental projects encompassing smart ports and airports.

The smart city and smart destination concepts are closely related phenomena mainly due to their common foundational elements. However, a major difference between the two is that smart cities serve their residents while smart tourism is mainly oriented towards visitors/tourists (without perturbing residents). In essence, smart cities and smart tourism share infrastructure as well as facilities while providing solutions to residents and tourists.

The smart destination includes (Figure 26):

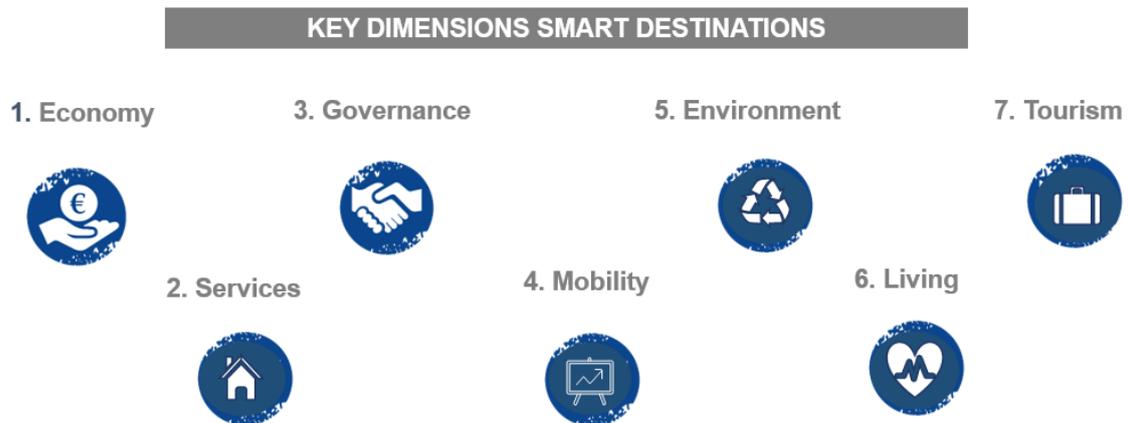
- Touristic planning of the territory
- Applying sustainability to the touristic value chain

²⁰ Agreed upon in the AEN / CTN 178 Technical Committee for Standardization of Smart Cities of the Spanish Association for Standardization and Certification, AENOR.

²¹ SEGGITUR (2015)

- Including technology in the tourist experience and services delivery
- Managing effectively and efficiently the resources based on existing capacities
- Being able to respond to the needs and behaviours of tourists
- There are seven integrated key dimension in smart destinations

Figure 26 Key Dimensions Smart Destinations



Source: Own elaboration

After evaluating smart city and destination's dimensions, and take into consideration need for integration in relations between ports and cities and coexistence between residents and cruisers, we consider relevant introduce the concept of Smart Cruise Destination²².

The growing number of cruise and passengers in cruise destinations requires an increase in diverse services offered and a greater coordination between all actors involved (agencies and service providers), both inside the port and between port and city. At the same time, cruise passengers will require an offer more adapted to their preferences and residents a positive impact of the activity.

A smart cruise destination should introduce functionalities that allow, through technological development and data integration, to facilitate and make more sustainable both port operations linked to cruise ship docking, integration between residents and cruise passengers and expectation of cruise passenger. A smart cruise destination should apply technological developments that allow, through technological development and data integration, to facilitate and make more sustainable both port operations linked to cruise ship docking, integration between residents and cruise passengers and expectation of cruise passenger.

²² Similar concept put forward by the project Green Port Cruise for the Baltic region (Hamburg Port 2016)

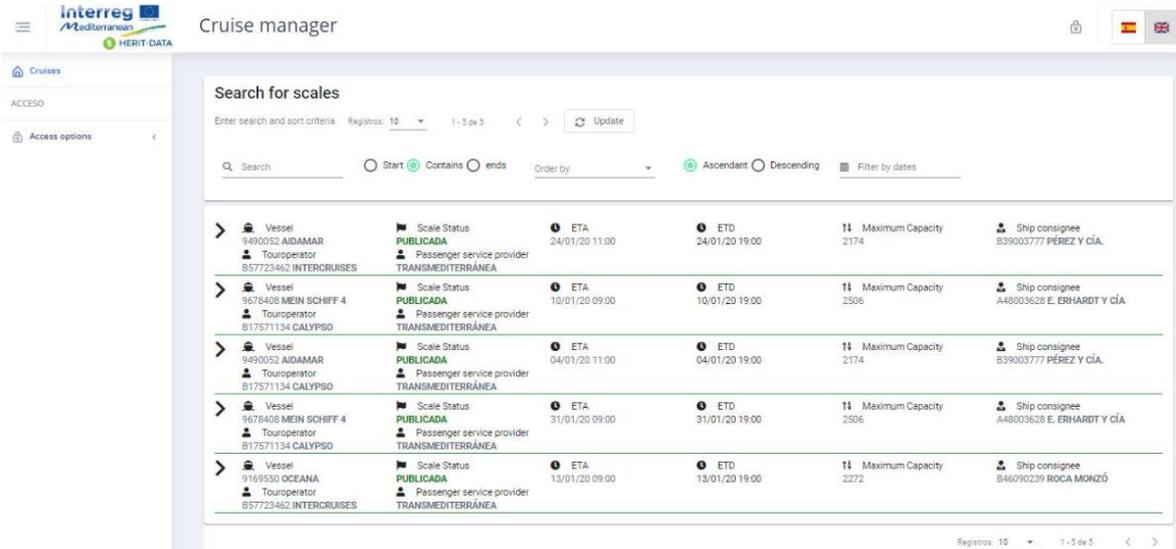
Smart Cruise Destination could be developed in two parts: one of them, a platform linked to port and²³ operations that collects information related to the scale and management of cruises (docking time, undocking, stopover forecasts), characteristics of the ships, number of cruise passengers, tour operators, excursion bus flow, automation of controls, security systems or the control of emissions from ships. The second part would articulate the integration cruise passenger and city linked to the intelligent mobility of the passenger.

In Valencia, in the framework of Herit-Data Projects. On the one hand it has been developed Cruise Manager Platform (Figure 27) relative to port operations (Smart port) that collects information about stopover and management of the cruises ship (docking time, undocking, forecasts), characteristics of ships, number of cruises passengers, tour operators and excursion bus flow. These information is sharing between all actors in the value chain of the cruise ship destination in Valencia. On the other hand, in relation to cruise-city integration and intelligent mobility of the passenger and data collection, Valencia has joined the snap4city platform along with other cities like Dubrovnik (Croatia), Pont du Gard (Région Occitanie, France), Ancient Olympia (Western Greece), Florence (Tuscany Region, Italy), Valencia (Valencia Region, Spain) and Mostar (Bosnia-Herzegovina). For the Valencia Pilot, the Snap4City platform (Figure 28) is used as a front-end application gathering the data necessary to calculate, report and disseminate the indicators and their components for the sets: Site Capacity Overcrowded (E1), Tourist City Flows (E2) and People perception of overcrowded places (E3). The Snap4City implementation for the Valencia Pilot includes a series of dashboards and views with real-time and historical data about these indicators. In this way, the users will be able to know the overall overcrowding situation in the selected sites for this pilot. These monitored sites are: El Mercado Central, La Plaza de la Virgen and the Micalet Street. For instance, in one dashboard, the user will be able to see a map view of the Valencia's old town (i.e. Ciutat Vella) with real-time measurements of number of persons and the average time spent in each monitored site. In another dashboard, there is a table which shows the list of indicators and their indicators components which will let the user navigate to dedicated chart dashboards plotting some real-time (e.g. pie, bar, etc.) charts and some statistics about selected indicator. It is worth to mention that Snap4City also allows the customization of notification alerts and alarms when an indicator overpasses a predefined threshold value. Moreover, if enough data is captured, there will be an experimental dashboard that will plot the short/medium term predictions of the number of persons per square meter in the Valencia Pilot sites.

²³ Tour operations as 'official' on shore tours offered by the cruise ship companies

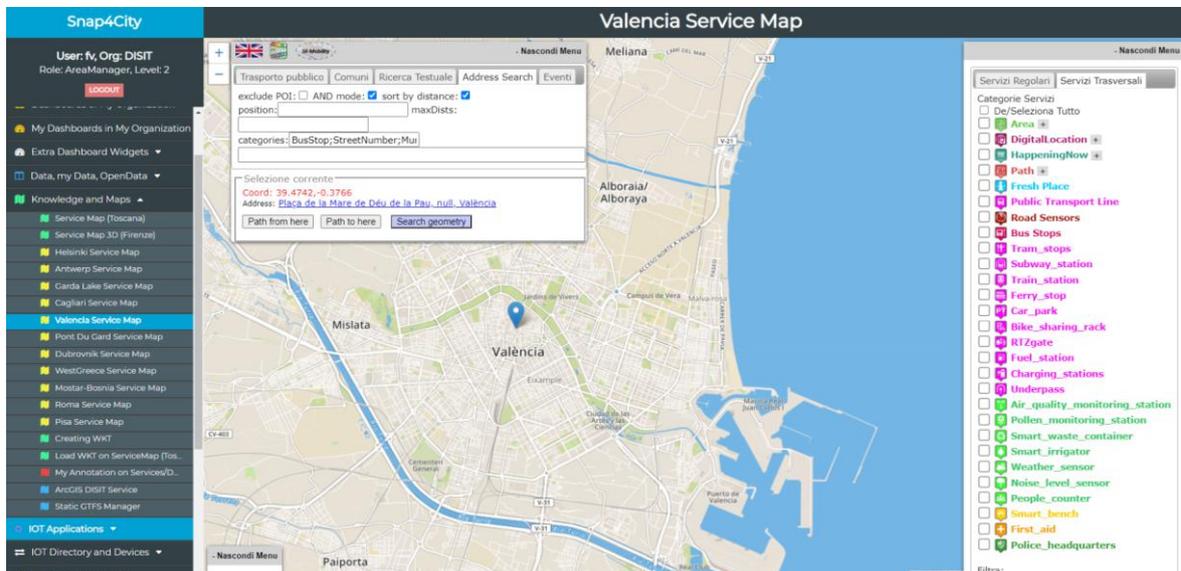
4.6.1. Sustainable Cruise Destination

Figure 27 Cruise Manager Valencia platform Herit-Data



Source: Cruise Manager Valencia platform Herit-Data

Figure 28 Snap4city Valencia Pilot



Source: www.snap4city.org

Developing a sustainable cruise destination (Figure 29) that addresses a strategic, sustainable and innovative vision based on the use of technology, would simplify specific impact produced by arrival of massive cruise passengers by applying tools such as a mobile

4.6.1. Sustainable Cruise Destination

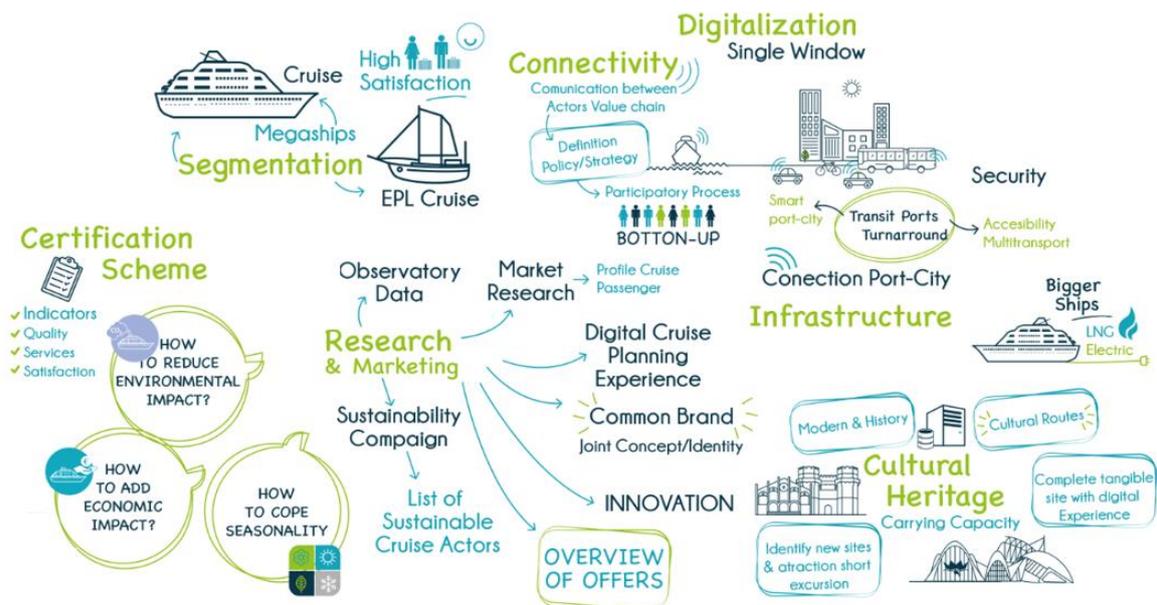
application that detects the flow of people directing tourist through less concentrated alternative routes and according to their preferences.

Examination of various documents from international organizations reveals that by the year 2030 the mega-trends in tourism (extendable to cruise ship tourism) will be strongly focused on the issues of quality, sustainability and personalized experience, which implies an additional task that today the destinations in most cases have not yet developed with all the intensity and dedication in time and budget that is required from market intelligence.

Tourist demand is increasingly segmented and changing. It will be necessary to know more details about: Who they are, how they move, what are their expectations for the selected destination and preferences to respond to their requirements. For this reason, handling of large volumes of data (BIG Data) is becoming more unavoidable.

Faced with constantly-connected tourists looking for personalized experiences, the data along with technologies like Big Data become essential allies in understanding behavioural patterns and improving tourism offers. It gets comprehensive knowledge of tourists, analyse points of interest and measure the impact generated by tourism at the destination. With better knowledge of cruise tourist profiles and behaviour, administrations can plan public services more efficiently and invigorate their tourism industry.

Figure 29 Sustainable Cruise Destination



Source: Fundacion Valenciaport elaboration

4.6.1. Sustainable Cruise Destination

Implementing Big Data technology, stimulates the participation and the collection of information of the users even before their arrival, during their stay and after their departure. Its physical deployment, based on a complete network of sensors and devices connected to the Internet, favours the development of a virtual platform of services that promotes the sustainability of destinations and improves destination management.

To sum up this chapter, we propose to define Sustainable Cruise Destination focus on people (cruise passenger, host community and stakeholders) that using new technology guarantees sustainable development of destination, facilitating the interaction and integration of the cruise passenger with the surroundings and increases the quality of their experience in the destination, as well as the quality of life of residents ensuring that the benefits are maximised and the cost minimised for all actors involved. Sustainable Smart Cruise Destination requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building.

3. Drivers for the sustainability preventing carriage capacity problems and damage of cultural heritage in cruise destination

This section provides an overview of the measures implemented in some of the most important European cruise destinations in order to evaluate and to reduce the consequences of tourist crowding.

Therefore, for the purpose of identifying the potential measures towards a more sustainable tourism, a review of a set of case studies was firstly carried out so as to have a depth knowledge on the measures already implemented. The abovementioned case studies were selected based on the findings of the study of the European Parliament (2018) "Overtourism: impact and possible policy responses". In this regard, six cruise ports were analysed in depth in order to pinpoint measures put in place to manage visitors. The main objective was to identify the most relevant measures that these six ports have been implementing in order to achieve sustainable objectives and become a sustainable cruise destination.

Having identified such measures, a survey to some European cruise destinations was launched in March 2021 in order to identify which measures are employed in a larger number of cruise destinations. The results are shown in section 3.2.

This section aims to answer the following questions:

- ✚ How is the destination addressing the high pressure of visitors and in particular cruise tourists?
- ✚ How does the destination balance the sustainability of cultural heritage with the benefits of tourism, not only in economic terms but also for the well-being of local communities?

3.1. Identification and classification of measures for sustainable cruise tourism destination

This section identifies and classifies the most important measures implemented in some European countries so as to become a sustainable cruise destination. To do this, two types of sources were used.

On the one hand, some were identified by a range of studies (UNWTO 2018; UNWTO 2016; Schmidt.J.2019;), with concrete measures and strategy aimed at reducing overtourism in general and in particular in cruise destination. Actions that have been adopted by destinations analysed are summarised below.

On the other hand, measures were derived from several case studies. Specifically, the study of six European cities is taken as a reference in order to identify some of the measures implemented: Amsterdam (The Netherlands); Barcelona (Spain); Dubrovnik (Croatia); Lisbon (Portugal); Palma de Mallorca (Spain) and La Valleta (Malta). These cities have been selected because all of them play a key role in managing cruise tourism.

Figure 30 Final selection of benchmarked cruise destination



Source: Own elaboration

On the other hand, in 2018 the European Parliament published the report “Overtourism: impact and possible policy responses”, this research aimed to address the complex phenomenon of overtourism in the EU. Focusing on a set of case studies, the study reports on overtourism indicators, examines management approaches applied in different destinations and assesses policy responses. Based on the above mentioned study, six cruise destinations in Europe were selected for analysis (This selection was made, firstly, from the list of cruise destinations with overtourism problems according to the study (see Secondly, based on this list, a preliminary analysis was carried out to evaluate cruise destinations that have included this type of tourism in their plans (such as the strategic tourism plan, the mobility plan, etc.). Thirdly, a review was made of whether these destinations have taken special measures that have an impact on cruise traffic. Once six case studies had been selected, the ports were contacted directly to request detailed information to analyse the evolution of cruise traffic for the period 2015-2019. It should be

noted that in all cases the ports are considered as large in terms of cruise traffic, taking into account the total movements in the region.²⁴

The final selection of the case studies was firstly limited to the ports identified in Figure 30 according to the following criteria:

- 1) Firstly, the size of the cruise port in terms of cruise passenger movement, in this sense although the port of Amsterdam may seem small compared to Mediterranean ports, it is considered a relevant port for this traffic between ports in Northern Europe.
- 2) Secondly, those ports that have adopted some measures or implemented instruments with a direct impact on cruise traffic have been selected.
- 3) Finally, as the aim of this work is to include a segmented analysis of cruise ship traffic, only those ports where disaggregated information by port of call (name of the ship, time of call) was available to enable this analysis²⁵ to be carried out were included.

Therefore, following such criteria, the ports included in our sample are the following:

✓ Amsterdam, The Netherlands

Amsterdam city is recognised as combination of urban and heritage destination and one of the biggest cruise port in the North of Europe. With 860,000 residents, Amsterdam received 9 million of tourist in 2019 and is sharpening for ways to better manage its immense popularity. Its reputation is not a coincidence, but the result of the evolution of Amsterdam from a small urban trading centre into a prominent tourism city and destination. According some authors (Colomb & Novy, 2016b; Milano, 2017b, 2018) the city is experiencing tensions caused by destinations' inability to adequately distribute the space among the residents and tourists.

Amsterdam has been positioned as important cruise port in the North Sea with up to 117 ocean cruise ships visiting the city in 2019. The ships arrive at the Passenger Terminal Amsterdam that is close to the city centre. The Terminal handles around 300,000 cruise passengers last year, mainly during the peak cruise season of May to September.

Figure 31 Summary of Amsterdam’s main measures implemented towards a better management of the cruise flows

Measures Implemented:

- Day Tourist Tax for cruise ship passengers (applied from 01-01-2019). Special tax for transit cruise passengers arriving within the municipal boundaries of Amsterdam.
- “Roadmap Digital Port” project, in which big data is at the heart of virtually all projects (measure occupancy rates of parking spaces; avoiding congestion).
- Promote sustainable sea cruises: Sustainability goals to be achieved by sea cruises within a given timeframe have been included in the Regional Memorandum on Sea Cruise (Sea cruises Memorandum).
- Discounts on port taxes for the environmentally cleaner cruise ships reporting their emissions according to the Environmental Ship Index (ESI).
- Move crowd-pullers to peripheral locations: Look for a new location PTA (Passenger Terminal Amsterdam) for large cruise ships.
- Reduce numbers of coaches: Developing strategy on pick-up and drop-off points between coaches and canal, river and sea cruises.
- Developing Strategic Agenda 2017-2021 by Amsterdam Cruise Port organisation:
- Developing several apps to manage the mass tourism flows (for example, “I am Port” app, Discover the City or implementation RFID chip inside the City Card).
- Increasing the relationship between stakeholders and sharing data information by amsterdam&partners.
- Sea cruise Amsterdam: aggregated number of passengers on board ships in the Passenger Terminal Amsterdam on a monthly basis.
- Conduct regular research among residents and other local stakeholders with objective to Monitoring and knowledge sharing by lamsterdam.



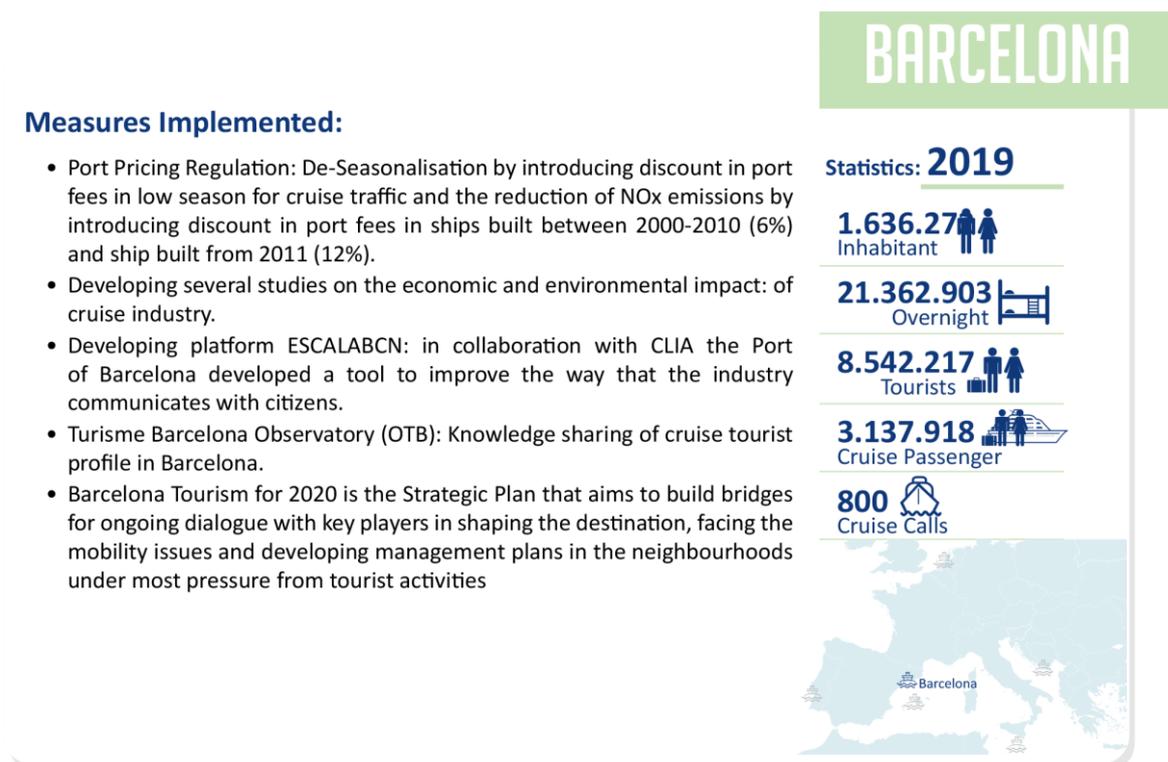
Source: Fundacion Valenciaport own elaboration

✓ Barcelona, Spain

By population (over 1,6 million) the city is ranked Spain's largest and Europe's 16th largest and the fourth in the ranking of the most visited European cities. The distribution of the city's tourist activity is very uneven. There is a high tourist supply and demand concentrated in the areas with the most popular and iconic sites. The neighbourhoods and spaces in those concentrated areas present a high tourism intensity while the rest of the areas are underdeveloped for tourism due to the lack of supply and demand.

Port of Barcelona is positioned to service cruise traffic destined for the city itself and the region of Catalonia, both of which offer many historic, natural and cultural attractions for tourists. In 2019, with 3.1 million cruise ship passengers and 800 stopovers, Barcelona held onto its position as the top base port in Europe and in the Mediterranean for cruise ships, and it is the fourth most important base port in the world.

Figure 32 Summary of Barcelona's main measures implemented towards a better management of the cruise flows



Source: Fundacion Valenciaport own elaboration

✓ Dubrovnik, Croatia

The World Heritage property Old City of Dubrovnik was inscribed on the World Heritage List in 1979. The City of Dubrovnik, as well as other case studies, has emerged last decade as one of the most popular tourist-attractive destination that records a significant increase in the number of tourists annually. Tourism is one of the fastest growing sectors, with a record increase of 13% in tourist arrivals in 2019 (compared to 2018) and 6% in overnight stays compared to same year, according Tourist Board reported.

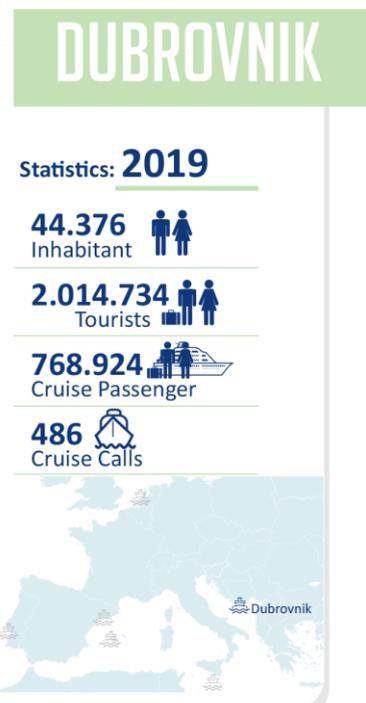
The reputation of Dubrovnik keeps bringing record number of visitors to the region in general, and to the town in particular, leaving the host community of 44,000 residents (2019) given with the challenge of managing a huge number of people (tourist national, international and cruise passengers) specially in the summer months. This testifies of the big pressure on the city's infrastructure and highly-seasonal tourism.

Dubrovnik has been positioned as one of the most attractive cruise destinations in the Adriatic and is still the first port in Adriatic for transit passengers. Arrival and stay of cruising passengers (in 2019 768,000) has a significant impact on quality of life and the quality of the visitor experience in Dubrovnik.

Figure 33 Summary of Dubrovnik's main measures implemented towards a better management of the cruise flows

Measures Implemented:

- Limitation of the number of cruise ships to two per day, carrying a total of 5,000 tourists per day, with an aim to reduce overcrowding.
- MOU signed between Cruise Lines International Association (CLIA) and City Council of Dubrovnik (2019) to cooperate in improving the tourism management flows.
- Defining Cruise Ship berthing policy for year 2020 and 2021 (2018) so as to
- limit the number of cruise passenger at the same time; prolong the stay of the ship in the destination; prolong the season and giving equal opportunity for booking to each cruise line.
- Dubrovnik smart city (DUSC), which applies innovative technologies to management issues from remote controlled city lighting to traffic safety and flows. These includes:
- "Respect the City" project (RTC) is a multidisciplinary strategic destination management project with focused on becoming the leader in sustainable and responsible tourism in the Mediterranean.



Source: Fundacion Valenciaport own elaboration

✓ Lisbon, Portugal

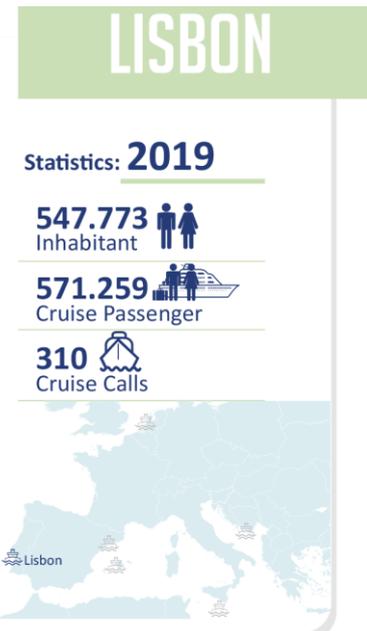
Lisbon is the second oldest city in Europe and comprises an extensive array of historical and cultural sites of exceptional value. The tourism in Lisbon has been intensified during the last decade, representing a prosperous and crucial sector for the local economy but also bringing new challenges. From 2015 to 2019, the number of nights spent by tourists in Lisbon increased 40% reaching the number of 14 million-night stays. It has 547,773 inhabitants (Statistics Portugal, 2019).

In 2019, with 575,763 cruise passengers and 313 stopovers, Lisbon cruise port held the second position in the Atlantic Europe region behind Hamburg in number of movement of cruise passenger

Figure 34 Summary of Lisbon's main measures implemented towards a better management of the cruise flows

Measures Implemented:

- Use big data sources to understand tourists behaviour in the cities of Lisbon and Porto.
- Observatory to determinate cruise passenger profile
- Develop Strategic Tourist Plan for the Lisbon Region (2015-2019) Priority: Creation of a wide-ranging product for different segments with a regional vision and focusing on promotion. No specific mention to a smart strategy but great emphasis in marketing intelligence and online communication.
- Lisbon Cruise Terminal aims to address a range of projects, including become a Green Port and obtain ISO 14001 certification; Implement environmentally-friendly LNG bunkering for cruise ships.
- Tourism Strategy 2027, which is a programme to drive economic, social and environmental development throughout the country and position Portugal as one of the world's most competitive and sustainable tourism destinations.



Source: Fundacion Valenciaport own elaboration

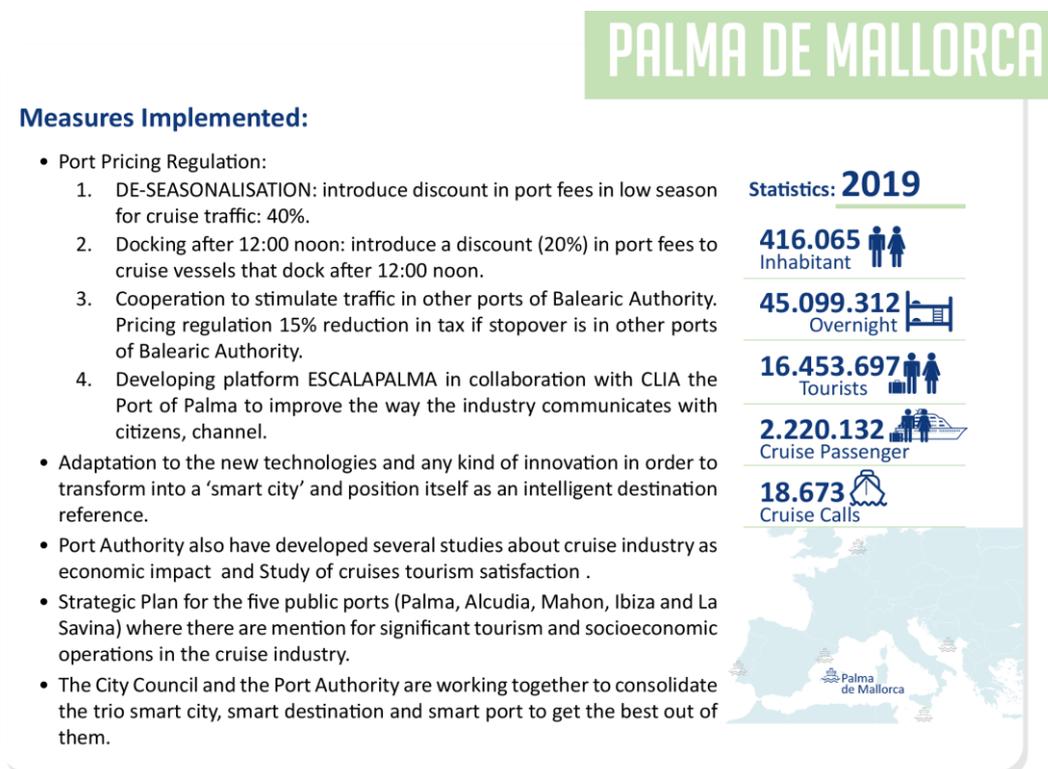
✓ Palma de Mallorca, Spain

Balearic Islands have a privileged geographical location on the western Mediterranean Sea, near the eastern coast of the Iberian Peninsula. Mallorca, Menorca, Eivissa (Ibiza) and Formentera are the four largest islands and with minor small islands and islets compose a prosperous destination which almost 1,500 kilometres of coastline embody the essence of the Mediterranean.

Palma de Mallorca is the capital of Mallorca Island and the Autonomous Government of Balearic Islands. It has a surface city area of 3,640 km² and a population of 416,076 people, according to the last municipal census. It is positioned as one of the main tourist destinations in the Mediterranean. In 2019, the total number of international tourists was of 10.2 million in Palma (CAIB, 2020)ⁱ. Mallorca offers cultural heritage like “La Serra de Tramuntana” that was declared a UNESCO World Heritage Site in 2011.

The Port of Palma is the best equipped in terms of cruise-dedicated infrastructure, and provides an excellent service as a home port and as a transit port. It received 2.2 million cruise passengers in 2019 and 590 cruise calls.

Figure 35 Summary of Palma de Mallorca’s main measures implemented towards a better management of the cruise flows

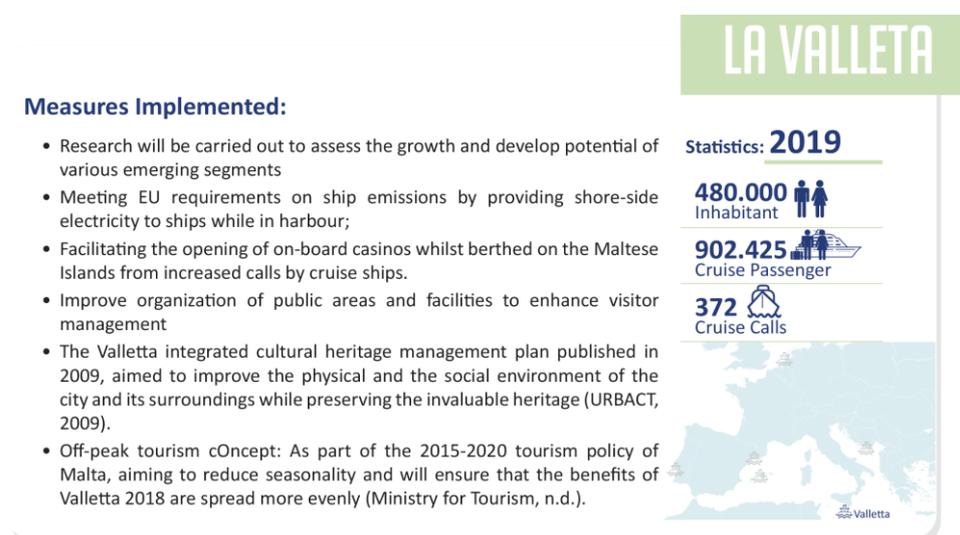


Source: Fundacion Valenciaport own elaboration

✓ Valleta, Malta

Valletta is the capital as well as the political and administrative centre of Malta and its port, including the historical waterfront, is the gateway to its rich historical and cultural experience that welcomes near a-million cruise passengers in 2019. The total annual revenue generated by the cruise industry is approximately €31 million (Ministry for Tourism, n.d.). Malta's tourism industry is highly seasonal. Most guest nights are recorded in July and August. Occupancy rates in the high season reach 86% (MTA, 2017).

Figure 36 Summary of Valletta's main measures implemented towards a better management of the cruise flows



Source: Fundacion Valenciaport own elaboration

The following is a summary table of the case studies analysed and whether measures specifically applied to improve cruise traffic management have been identified.

Table 6 Final selection of case studies

Country	Port	Europe region	Cruise PAX (2019)	Overtourism	Policy documents (*)	Measure to cruise traffic
Croatia	Dubrovnik	Mediterranean	808.936	YES	YES	YES
Malta	Valletta	Mediterranean	711.018	YES		
Netherlands	Amsterdam	North	294.200	YES	YES	YES
Portugal	Lisbon	Mediterranean	644.000	YES		
Spain	Barcelona	Mediterranean	3.041.963	YES	YES	YES
Spain	Palma de Mallorca	Mediterranean	2.220.132	YES		YES

Source: Own elaboration

After analysing these cases, possible measures to improve tourism management have been identified and grouped under 4 topics as shown in the following summary. (Figure 37):

Figure 37 Summary of measures towards a better management of the cruise flows



Source: Own elaboration

The **First Topic “Promote Sustainable Tourism Strategies”** focuses on the engagement of value chain actors and stakeholders for building a culture of sustainable tourism in destination. Many actions could be push in the framework of this topic such as the definition of strategic plan, promotion activities can be performed to stimulate cooperation, such as routine calls, facilitated roundtables and social media channels for cruise tourism sustainability professionals in destination to collaborate and support each other on common challenges. In detail following measure have been proposing.

The **Second Topic “Stimulate the deconcentration on the main tourist attractions”** focus on the assess and optimize of tourist attractions in destinations. Mediteranean has rich heritage resources that should be properly valued, some of them are high knowledge and other are unknowlege. Valuation should be embedded into the equilibrium between conservation and promotion efforts. Taking the perspective that some attractions and areas in the destination could take a high demand and exceed capacity, opportunities to promote other areas or interest point offer a mutually beneficial situation. Proper understanding of the destination’s existing and potential inventory of attractions and shore excursions will enable proper valuation. In detail following measure have been proposing for this topic.

The **Third Topic “Tourist Management Flows”** realize the value of routine collection and monitoring of segmented visitor arrivals and revenues and itineraries and source markets. As data collection systems and monitoring are being developed, opportunity exists to embed sustainability performance measurement. General efforts are underway to improve the systems and quality of data collection for tourism and specifically cruise tourism in many destinations. Following measure have been proposing for this topic.

The **last Topic “Incentives or taxes regulations”** takes in consideration measures adopting pricing strategies. Most of actors of the tourism value chain manages peak and off-peak seasons with taxes and incentives. In periods of high demand, prices increase. Conversely, periods of low demand are met with offers and discounts. Reception of cruise ships by a destination should follow the similar management approach to tourism under the premise of a perishable inventory and fluctuating demand. A form of dynamic pricing is to charge higher fees for excessively crowded ports. Charging demand fees can influence cruise ships to avoid high-peak seasons and balance demand. This ensures that adequate fees are received for maintenance and operation of facilities and municipal services that are often stressed during peak periods. During off-peak seasons, discounts can also incentivize cruise ships and tourists to avoid highly congested time period. In detail following measure have been proposing for this topic.

In order to collect the degree of implementation in cruise destinations of the measures identified and to validate the information gathered, a **survey of cruise destinations** was designed and launched. Section 3.2 presents the results obtained from the survey.

3.2. Identification of the measures implemented by cities towards a sustainable cruise destination: Analysing the HERIT-DATA Survey

To complete the above analysis of case studies, an survey was carried out in order to collect information from cruise destinations in Europe.

The aim of the survey (Annex 6.2) was to identify the measure adopted for a Sustainable Cruise Destination towards cultural heritage and evaluate the impact of the COVID-19 pandemic. The design and orientation of the questionnaire has been based on the information in section 3.1. **¡Error! No se encuentra el origen de la referencia.** The questionnaire has been divided in 30 questions.

The survey was sent to a total of 102 recipients and Medcruise, Cruise Europe and the Greek Ports Association (ELIME) were asked to assist on the dissemination of the survey in order to obtain a wider representation. The questionnaire was answered by 29 cruise destinations from 14 countries.

The **first section**, collects data regarding information of cruise destinations. Some data requested has been: tourist activity in the area; total number of cruise passenger, number of cruise ship calls; average stopover time of cruise ships, total number of tourist in the city, average cruise passenger with organised shore excursions; average Free Cruise Independent passengers and Passengers remaining on board.

The **second section** of the survey, pick up information of perception of cruise activity impact on the destination. Following questions has been presented to measure this:

- What is the opinion of the local communities on the impact of cruise tourism on destination identity & cultural heritage?
- Has your cruise destination experienced problems resulting from “overtourism” prior to the Pandemic?
- What were the main problems that your destination was facing related to the cruise activity?

The **third section** aims at collecting measures implemented by ports or destinations to better manage visitor pressure or cruise tourism. Measures have been grouped into topics as outlined in section 3.1. More than one reply could be selected by cruise destination. Also an assessment of the implementation was requested of the measure at each port destinations.

The **last section** aims to collect information on impact of Covi19 on cruise sector from a destination perspective. Questions such as the following were doing:

- How do you think the COVID 19 pandemic will influence cruise tourism in destination when it returns to normal?
- How will cruise be welcomed in destination after COVID 19? and
- What measures are being developed in port and destination to be prepared for attending cruise ships and passengers after the pandemic (such as protocols)?

The questionnaire has been divided into the following blocks and number of questions:

- ✓ General Information (13 questions).
- ✓ Cruise activity impact on the destination 2019 (3 questions).
- ✓ Measures (9 questions).
- ✓ COVI 19 pandemic impact on cruise activity (5 questions).

The survey was carried out in April 2021. The technical team of the has been in charge of monitoring the completion of the questionnaire to obtain as many responses as possible. The survey was also disseminated by 3 major associations linked to the sector in Europe, such as Medcruise, Cruise Europe and the Greek Ports Association (ELIME).

Total number of responses obtained amounted to 29 from 14 countries. This representativeness is reinforced by the fact that the questionnaire was answered by the main cruise destinations in the Mediterranean. Specifically, the number of responses per country was as follows:

HERIT-DATA survey has been answered by a representative number of cruise destinations in Europe, belonging to different port sizes in terms of cruise passenger volume.

Belgium	1	Italy	4
Bulgaria	2	Malta	2
Croatia	1	Morocco	1
España	2	Norway	1
France	3	Portugal	3
Germany	1	Spain	4
Greece	3	Sweden	1

The results, which are presented in the following pages, are divided into the following sections:

- ✓ Situation of Destination
- ✓ Cruise activity impact on destination
- ✓ Measures and valuation
- ✓ COVID Situation

The results of the online survey are presented in figures in the following sections. The data have been presented in a segmented way by port size. In the literature (Esteve, 2016), it is possible to find different classifications by size of port taking as reference the number of

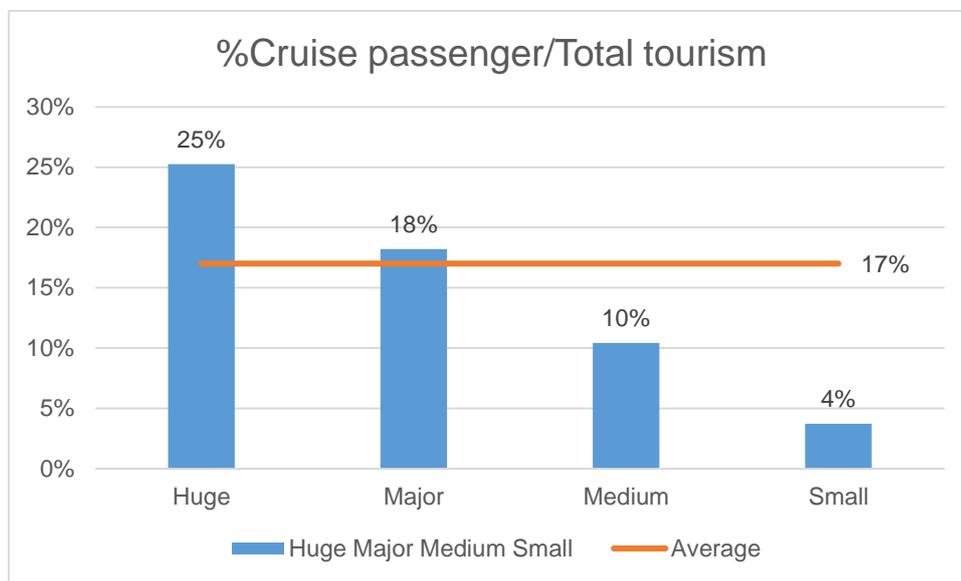
4.6.1. Sustainable Cruise Destination

cruise passengers. For example, in MedCruise (2008) it is applied the following classification, 'large' (over 500,000 total cruise passengers per year), 'medium' (between 200,000 and 500,000 total cruise passengers per year) and, 'small' (less than 200,000 cruise passengers per year). Moreover, in MedCruise (2019) is used a classification divided into two categories, Category A and Category B. Category A is composed of ports with traffic from more than 140,000 cruise passengers in 2019, and Category B is composed of ports with traffic from less than 140,000 cruise passengers in 2019. Rodrigue et al. (2013) proposed a classification that is divided into five sizes: 'small' (less than 100,000 passenger movements/year), 'medium' (100,000 to less than 250,000 passenger movements/year), 'large' (250,000 to less than 500,000 passenger movements/year), 'very large' (500,000 to 1 million passenger movements/year), and 'huge' (more than 1 million passenger movements/year). For the analyses of questionnaire, we applied classification is as follows, "small" (less than 140,000 cruise passenger in 2019), "medium" (between 141,000 and 499,000 cruise passengers in 2019), and "major" (between 500,000 and 999,999 cruise passenger) and "huge" (more than 1 million of cruise passenger).

i. Situation of cruise destinations

Based on the answers provided by the survey respondents, in general, **the percentage of cruise passengers over the total number of tourists in a cruise destination is around 17%**, while this figure is considerably higher (reaching 25%) on average in the ports classified as "Huge". By contrast, in Small cruise ports, this ratio decreases substantially to an average of 4% (Figure 38).

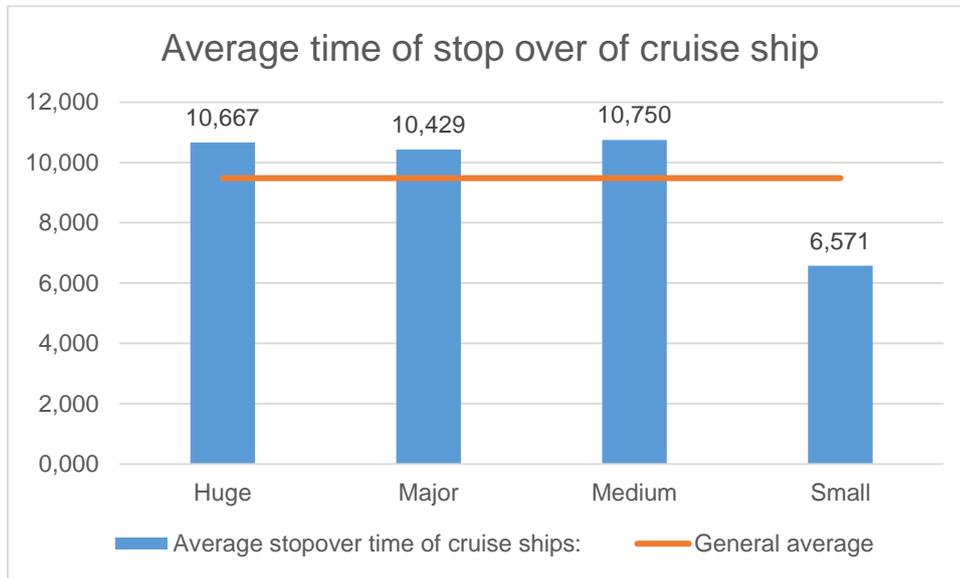
Figure 38 Relation between the total number of cruise passenger and total tourism by classification of cruise port according size, in 2019



Source: FVP own elaboration based on the survey replies

Regarding duration of stopovers at the destination, according to the data provided by interviewees, the average stopover time is around 10 hours, while, in the case of Small ports this average is lower (6.5 hours) (Figure 39).

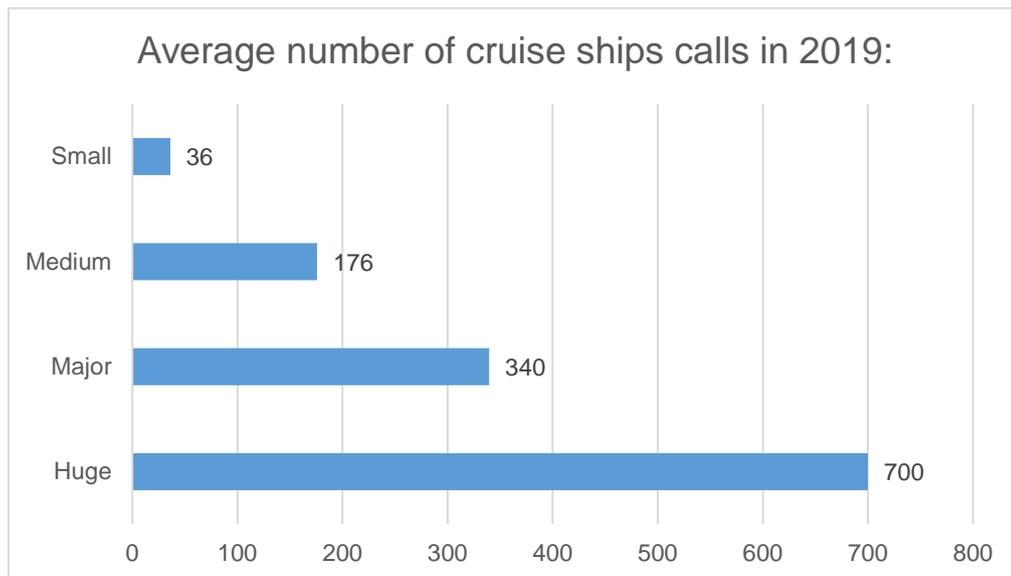
Figure 39 Average stopover time of cruise ships according cruise size



Source: FVP own elaboration based on the survey replies

Furthermore, the results of the survey also reveal differences in the number of port calls received by each of the ports: while the larger ports have an average number of calls of around 700 per year, in the case of the smaller ports the figure drops to an average of 26 calls.

Figure 40 Average cruise call by size port, 2019



Source: FVP own elaboration based on the survey replies

When analysing how cruise passenger flows move in a destination, it is important to know how they visit the destination. In the cruise sector, passengers can choose between visiting the destination on excursions organised by the cruise line itself (shore excursions) or Free Cruise Independent (FCI).

With regards to the shore excursions, on average, the ratio of passengers visiting the destination on shore excursions is almost 42%, and this figure is slightly higher in the case of smaller cruise destinations (49,57%) and and lower for destinations classified as Huge.(35%)

Table 7 Average % cruise passengers in organised shore excursions

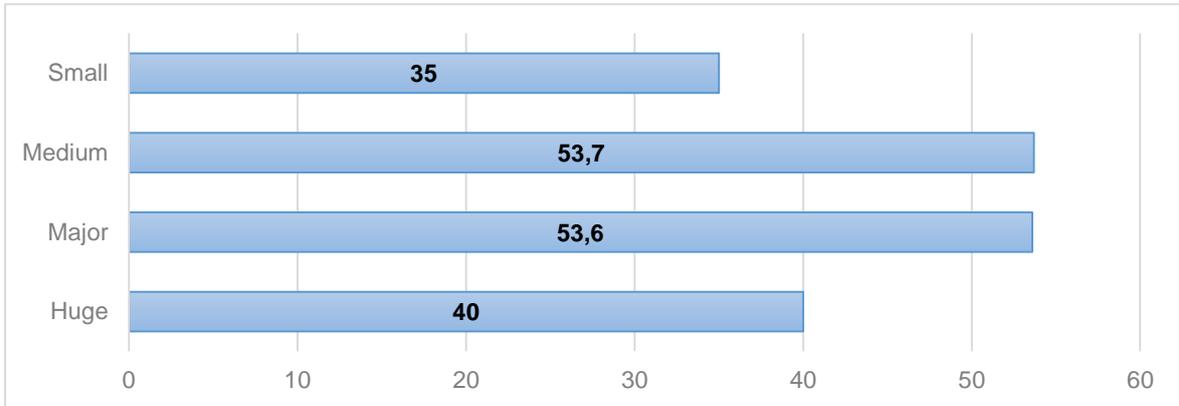
Port classification	Average % cruise passengers in organised shore excursions
Huge	35,00%
Major	39,00%
Medium	38,78%
Small	49,57%
TOTAL	41,78

Source: FVP own elaboration based on the survey replies

Meanwhile, as far as the Free Cruise Independent passengers (those who do not have a contracted excursion) is concerned, the average percentage of cruise passengers who visit the destination independently is around 46%. However, if this information is disaggregated according to the size of the port, the average value is reduced for Small ports to 35% and for Huge ports to 40% (Figure 41), while Medium and Major ports have higher percentages.

4.6.1. Sustainable Cruise Destination

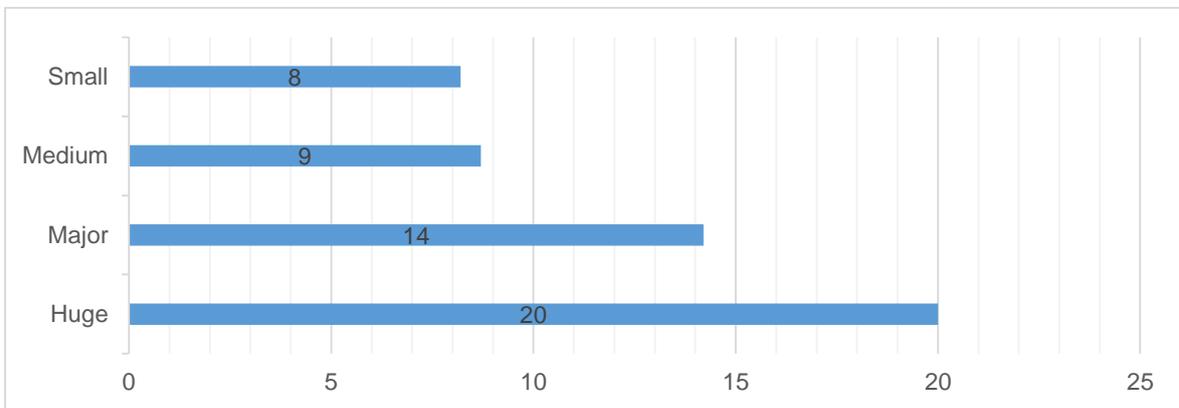
Figure 41 Average Free Cruise Independent passenger, according to the size of the cruise port



Source: FVP own elaboration based on the survey replies

Finally, regarding passengers who decided not to leave the ship during the stopover Huge ports are the ones that indicate the highest percentage (20%) followed by major ports (14.2%) (Figure 42).

Figure 42 Average of Passengers remaining on board according to the size of the cruise port

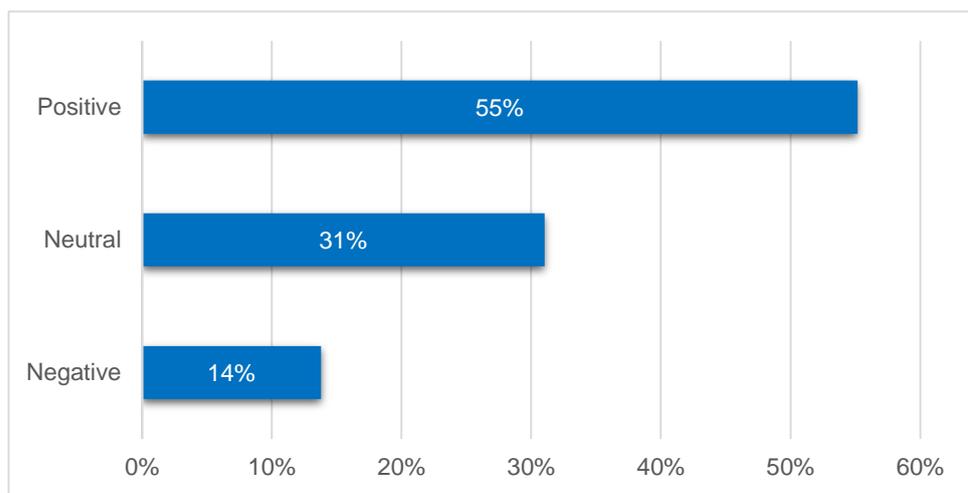


Source: FVP own elaboration based on the survey replies

ii. Cruise activity impact on destinations

Cruise tourism has become a highly controversial activity for some cities, where this type of tourism receives complaints and where its added value for the destination is questioned. In this section the opinion about the impact on the destination is collected. In this regards, the impact of cruise activity on the destinations surveyed was rated positively in 55% of the responses, with only 14% rating it negatively (Figure 43).

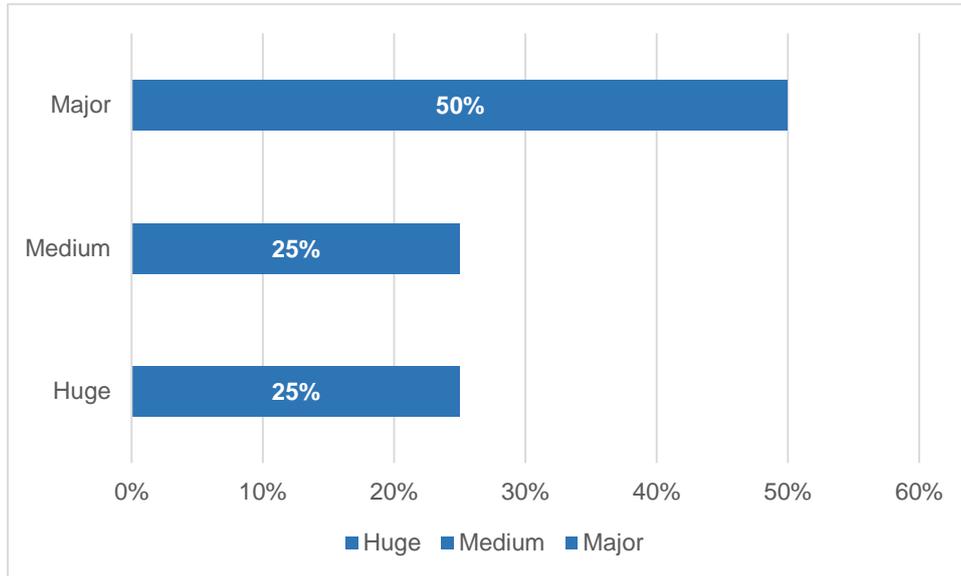
Figure 43 Opinion of the local communities on the impact of cruise tourism on destination identity & cultural heritage



Source: FVP own elaboration based on the survey replies

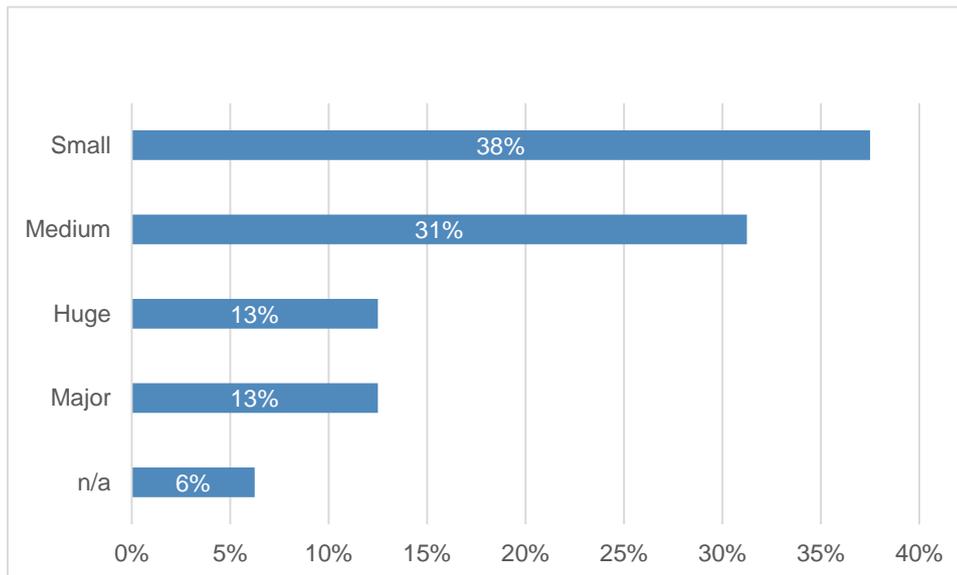
When analysing only the replies of negative impact in disaggregated form by type of ports, it can be underlined that 50% of those indicating that suffer a negative impact are classified as Major ports and 25% are the Huge and 25% Medium ports (Figure 44). Small ports, on the other hand, have the highest percentage of positive impact assessment with 38% (Figure 45).

Figure 44 Negative opinion according to size classification



Source: FVP own elaboration based on the survey replies

Figure 45 Who has a positive opinion according to port size?

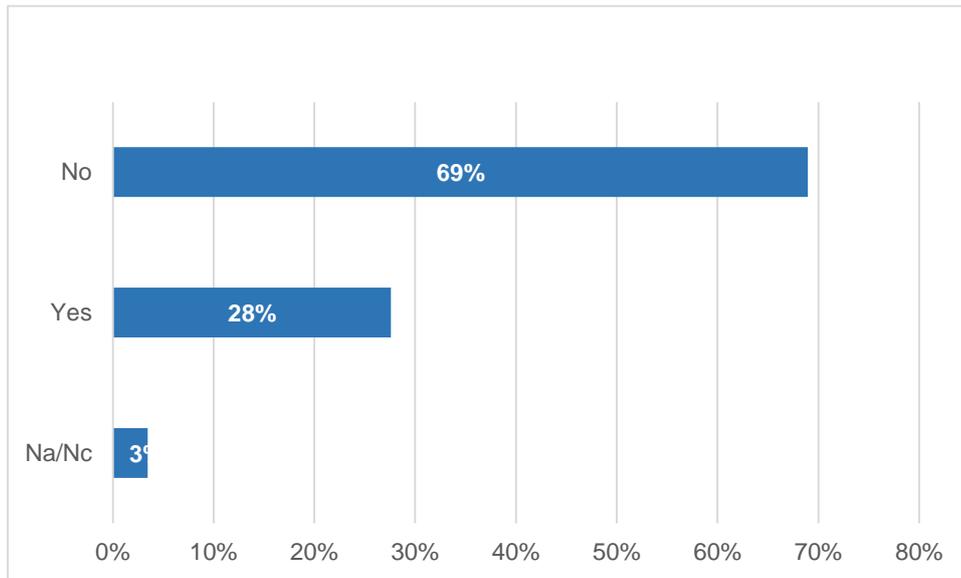


Source: FVP own elaboration based on the survey replies

4.6.1. Sustainable Cruise Destination

In relation to the question of whether the cruise destination had experienced problems of overtourism prior to the pandemic, 69% of respondents indicated that they did not experience problems of overtourism, while 28% indicated that they had suffered the consequences of overtourism (Figure 46).

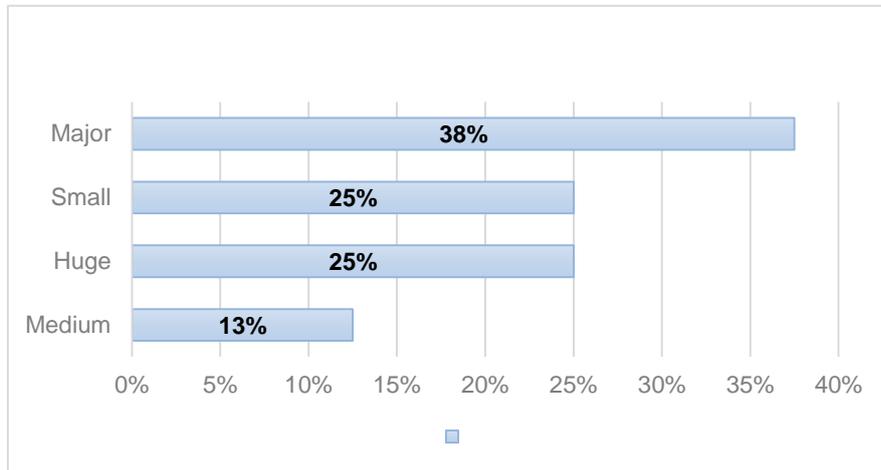
Figure 46 Has your cruise destination experienced problems resulting from “overtourism” prior to the Pandemic?



Source: FVP own elaboration based on the survey replies

Major ports are the most likely to have experienced problems of overtourism, with 38% of the respondents reporting that they had experienced problems of overtourism (Figure 47).

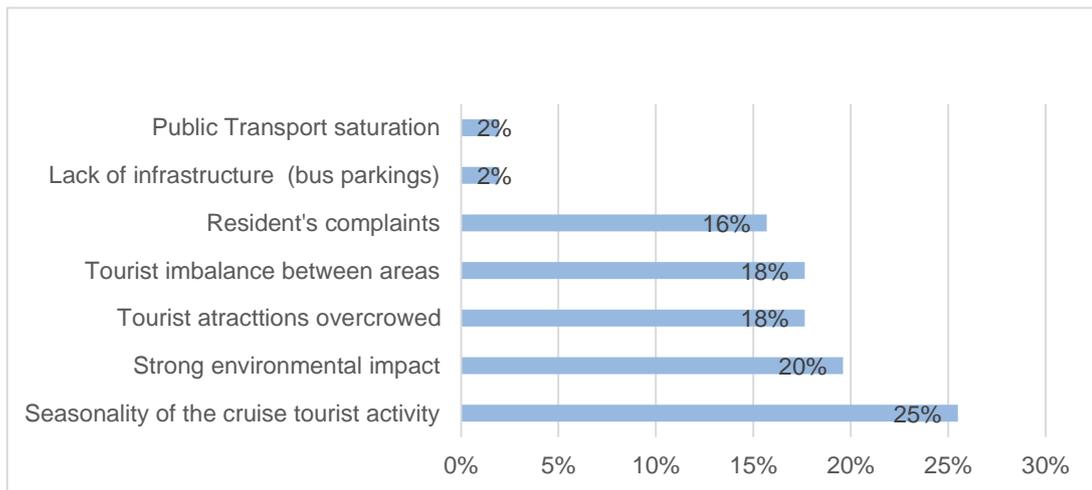
Figure 47 Which type of port size has experienced problems resulting from “overtourism” prior to the Pandemic?



Source: FVP own elaboration based on the survey replies

In relation to the main problems identified by respondents, we can see that 25% have identified the following as the main problem “seasonality of cruise tourism activity” with 25%, followed by the “strong environmental impact” (20%) and “tourist attractions overcrowded” and “tourist imbalance between areas” with 18% (Figure 48).

Figure 48 Main problems that cruise destinations face related to cruise activity



Source: FVP own elaboration based on the survey replies

iii. Measures and evaluation

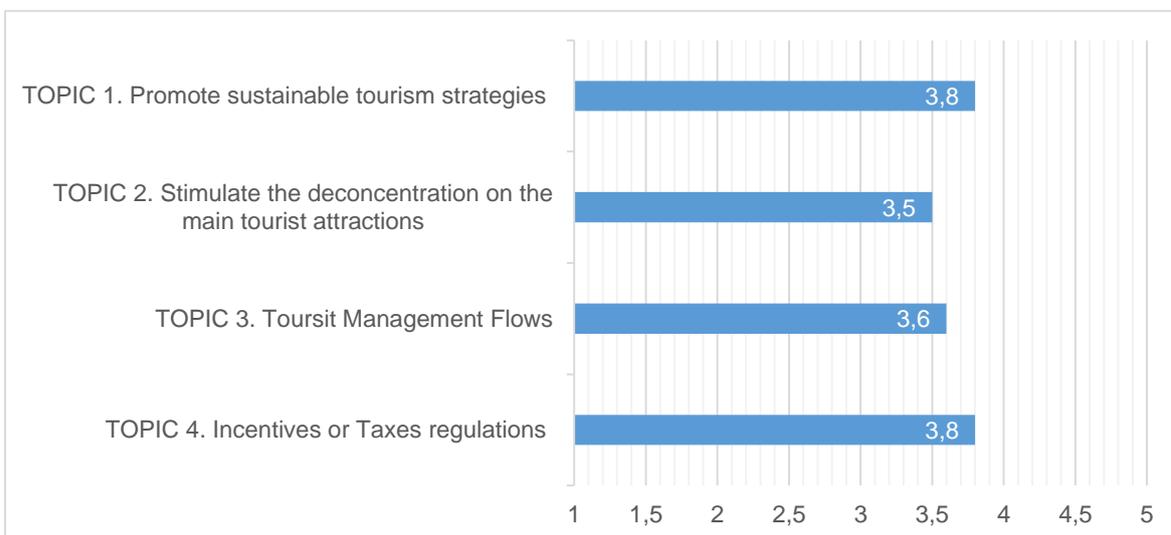
In order to address the problems linked to the management of tourists, destinations can implement a variety of different measures as explained in section 3.1.:

1. The First **Topic “Promote Sustainable Tourism Strategies”** focuses on the engagement of value chain actors and stakeholders for building a culture of sustainable tourism in destination.
2. The **Second Topic “Stimulate the deconcentration on the main tourist attractions”** focus on the assess and optimize of tourist attractions in destinations. Mediteranean has rich heritage resources that should be properly valued, some of them are hight knowledge and other are unknowlege.
3. The **Third Topic “Tourist Management Flows”** realize the value of routine collection and monitoring of segmented visitor arrivals and revenues and itineraries and source markets.
4. The **last Topic “Incentives or taxes regulations”** takes in consideration measures adopting pricing strategies. Most of actors of the tourism value chain manages peak and off-peak seasons with taxes and incentives.

In this section the results on the measures that the respondents have identified as, on the one hand, the most frequently used measures in their destination as a basis for their tourism management strategy and, on the other hand, the measures that they have rated as effective.

The measures related to Topic 1 (promotion of sustainable tourism strategy) and 3 (Tourist Management Flows) are the ones that have had the highest ratings regarding their implementation, while those related to Topic 2 (Stimulate the deconcentration on the main tourist attractions) have had the lowest rating, as can be seen in Figure 49.

Figure 49 Average rate implementation of the measures related to all topics (score 1 negatively, score 5 very positively)



Source: FVP own elaboration based on the survey replies

In general, a total of 25 measures are included into any of the aforementioned topics, analysing the total replies, there are , we see that the first 10 measures were mentioned by more than the 48% of the respondents (Table 8). In particular, “Regular meetings with (internal and external) stakeholders related to cruise tourism (such as Advisory Committees, Working Groups,etc) to foster communication, coordination and cooperation” within Topic 1 is the most mentioned by the 76% of the respondents.

Table 8 Measures implemented in destinations

Measures	Num. of Respondents	% respondents
Regular meetings with (internal and external) stakeholders related to cruise tourism (such as Advisory Committees, Working Groups,etc) to foster communication, coordination and cooperation	22	76%
Collaboration with tour operators and cruise company to offer tours outside of the city	19	66%
Identify and assess all natural and cultural heritage sites that are possible for shore excursion visits	17	59%
Organize guide excursions linked to the promotion of local culture knowledge and immersion in local customs	17	59%
Create awareness and knowledge of the sector amongst local communities (such as communication campaigns, targered training, publicity campaigns, conferences,..) and promote the dispersion of visitors to neighbouring municipalities by encouraging visits to their attractions	16	55%
Identify opportunities to spread cruise tourism visitors flows across activities and attractions	16	55%

4.6.1. Sustainable Cruise Destination

Adapt the offer of activities or shore excursions according to different cruise segments (contemporary, premium, luxury, expedition)	14	48%
Quantitative data collection on the impact of cruise activity on the destination	14	48%
Development of Sustainable Cruise Tourism Strategic Plan or Sustainable Tourism Strategy Plan including cruise traffic	12	41%
Liaising with cruise companies to encourage cruise passenger in quieter periods	12	41%
Monitor visitor numbers in cultural heritage sites	12	41%
Incentives cruise call outside the peak season through specific bonuses	11	38%
Assess and establish optimal level of cruise passengers capacity in relation to overall visitors to destinations	10	34%
Incentives for more sustainable cruise calls (depending of the year of ship construction, homeporting, etc.)	9	31%
IT systems to monitor tourist flows (mobile network data, sensors, etc.)	6	21%
Qualitative data collection on opinions of residents and entrepreneurs, which provide insight into the experience of tourism, crowdedness and their impact on liability	6	21%
Limitation of the number of cruise calls or cruise passenger per day or year (capacity limitation))	6	21%
Use of big data and new technologies to monitor and evaluate tourism performance and impact	5	17%
Install cameras and counting machines to regulate entrance to the historical centre of the destination	5	17%
Incentives for calls in other ports managed by the same Port Authority less popular in cruise traffic	4	14%
Introduce tourist taxes for cruise passenger	4	14%
Develop new technologies (apps and others) to stimulate dynamic time-based dispersal tourist and residents	3	10%
Implementation of crowd management systems (IT systems for instance)	2	7%
Introduce tourist taxes for cruise passenger	2	7%
Port incentives in taxes for those cruise calling during the afternoon	1	3%

Source: FVP own elaboration based on the survey replies

TOPIC 1: PROMOTE SUSTAINABLE TOURISM STRATEGIES

This first topic analyses in detail the measures implemented in cruise destinations related to the promotion of sustainable tourism strategies. For this purpose, the interviewees were asked to indicate which of the following measures are the most used in their destination to improve the management of tourists:

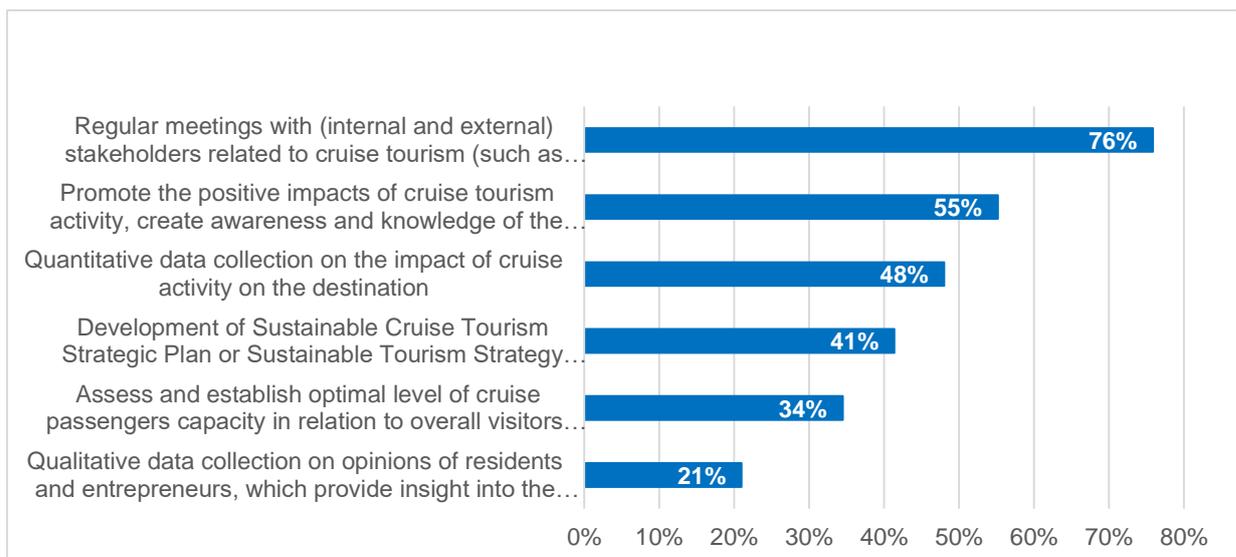
- Development of Sustainable Cruise Tourism Strategic Plan or Sustainable Tourism Strategy Plan including cruise traffic
- Regular meetings with (internal and external) stakeholders related to cruise tourism (such as Advisory Committees, Working Groups, etc) to foster communication, coordination and cooperation
- Assess and establish optimal level of cruise passengers' capacity in relation to overall visitors to destinations

4.6.1. Sustainable Cruise Destination

- Promote the positive impacts of cruise tourism activity, create awareness and knowledge of the sector amongst local communities (such as communication campaigns, targeted training, publicity campaigns, conferences,..)
- Qualitative data collection on opinions of residents and entrepreneurs, which provide insight into the experience of tourism, crowdedness and their impact on liability
- Quantitative data collection on the impact of cruise activity on the destination

In this topic, the main measures reported as implemented are: “Regular meetings with (internal and external) stakeholders related to cruise tourism (such as Advisory Committees, Working Groups, etc) to foster communication, coordination and cooperation” (76%), “Promote the positive impacts of cruise tourism activity” (55%) and “Quantitative data collection on the impact of cruise activity on the destination” (48%) (Figure 50).

Figure 50 Main measures implemented by cruise destinations in relation with “promote sustainable strategy” (Topic 1)



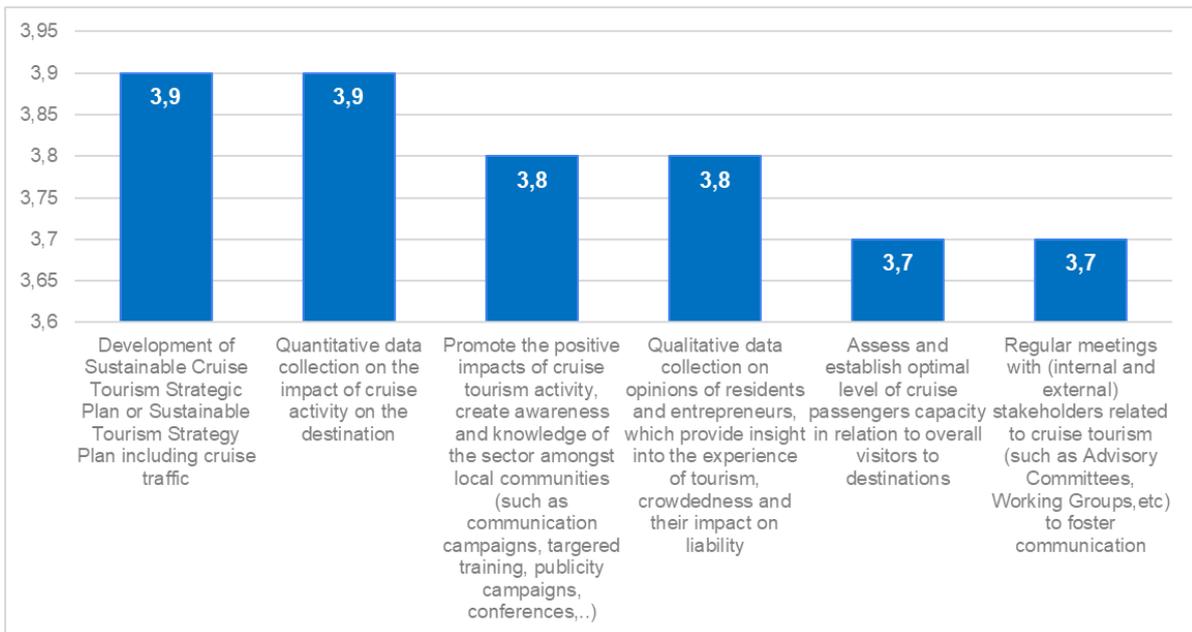
Source: FVP own elaboration based on the survey replies

Analysing different measures implemented by different sizes of cruise port destination, regarding Topic 1, it can be observed that measure linked to “Regular meeting with stakeholders” is among the most implemented for Huge, Major and Small ports, but not for Medium ports. It should also be noted that in the case of Huge ports, the measure “Quantitative data collection on the impact of cruise destination” has been repeatedly mentioned with 18%.

4.6.1. Sustainable Cruise Destination

When the degree of implementation of the measures is analysed, the “Quantitative Data collection on the impact of cruise destination” and “Development of Sustainable Plan” obtained the highest rating with a score of 3.9. (Figure 51).

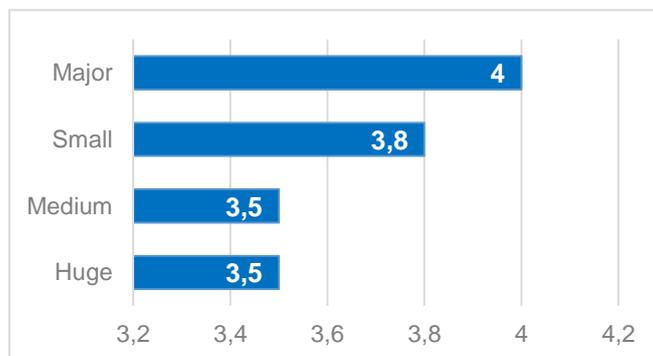
Figure 51: Rate of the measures implemented related to TOPIC 1 (score 1 negative, score 5 very positive)



Source: FVP own elaboration based on the survey replies

Taking into account the implementation of the measures under study when they are classified depending on the size of the port, it is observed the Major ports (4) and the Small ports (3.8) were the two groups with the highest rate.

Figure 52: Rate of the measures implemented related to TOPIC 1 (score 1 negative, score 5 very positive)



Source: FVP own elaboration based on the survey replies

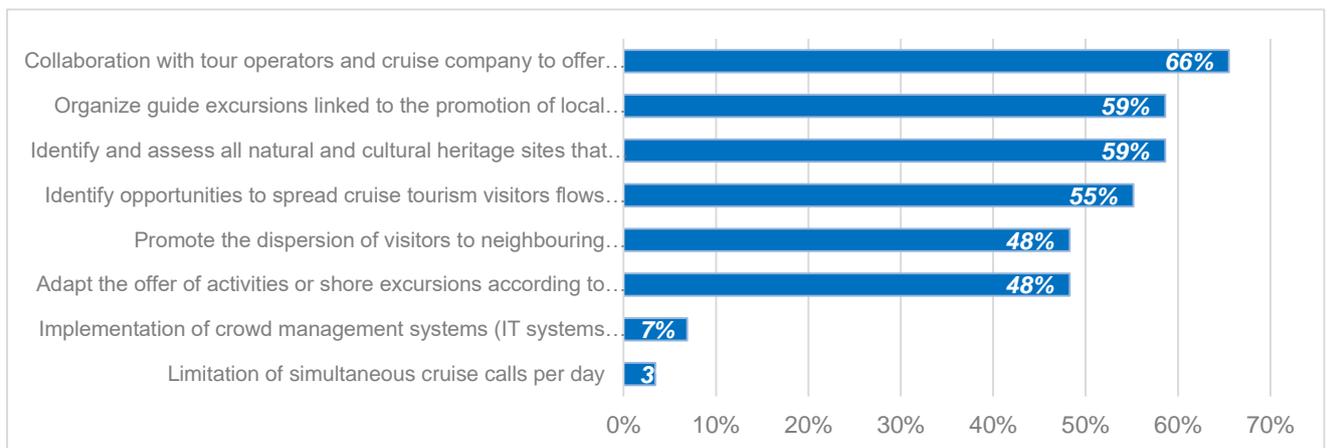
TOPIC 2: STIMULATE THE DECONCENTRATION ON THE MAIN TOURIST ATTRACTIONS

This second topic analyses in detail the measures implemented in cruise destinations for the stimulating the deconcentration on the main tourist attractions. For this purpose, the interviewees were asked to indicate which of the following measures are the most used in under this topic:

- Identify and assess all natural and cultural heritage sites that are possible for shore excursion visits
- Promote the dispersion of visitors to neighbouring municipalities by encouraging visits to their attractions.
- Identify opportunities to spread cruise tourism visitors flows across activities and attractions
- Adapt the offer of activities or shore excursions according to different cruise segments (contemporary, premium, luxury, expedition).
- Organize guide excursions linked to the promotion of local culture knowledge and immersion in local customs
- Collaboration with tour operators and cruise company to offer tours outside of the city
- Implementation of crowd management systems (IT systems for instance)

Regarding the measures implemented by the respondents under the Topic 2, (Stimulate the deconcentration on the main tourist attractions), “Collaboration with tour operators and cruise companies to offer tours outside the city” is most common measure selected (66%) followed by the “organisation of guide excursions” and “identify and assess all natural and cultural heritage sites for shore excursion” with 59% each of them (Figure 53).

Figure 53 Main measures implemented by cruise destinations in relation with “Stimulate the deconcentration on the main tourist attractions” (Topic 2)

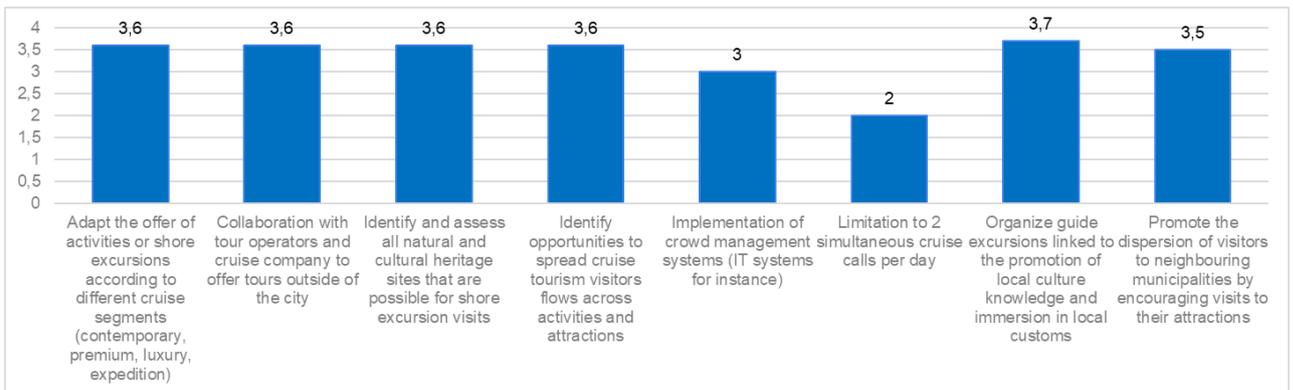


Source: FVP own elaboration based on the survey replies

4.6.1. Sustainable Cruise Destination

As regards as the rate of the implementation of the measures related to topic 2 (score 1 negatively, score 5 very positively), the average rate for topic 2 is 3.3, with the most highly rated measures being: “Organize guide excursions linked to the promotion of local culture knowledge and immersion in local customs” (3,7) while the selected as the measure with less impact is Limitation to 2 simultaneous cruise calls per day (Figure 54)

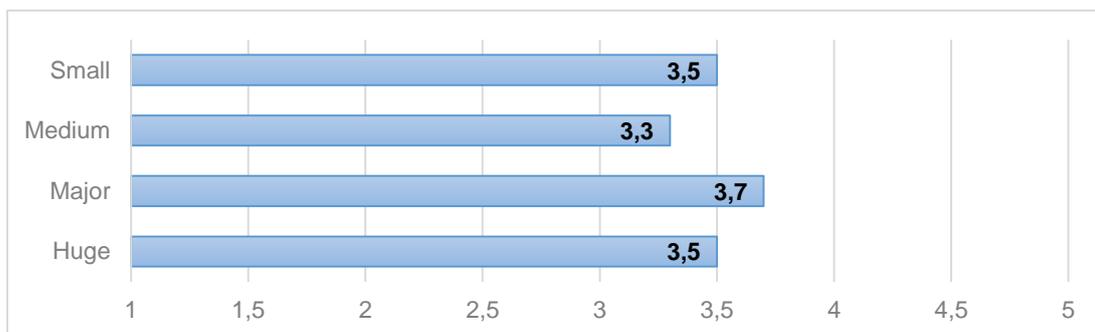
Figure 54 Rate of the measures implemented related to TOPIC 2 (score 1 negative, score 5 very positive)



Source: FVP own elaboration based on the survey replies

In general, the implementation of measures implemented within TOPIC 2 was higher ranked by Major ports (3.7) and lower in the case of the Medium (3.3) (Figure 55)

Figure 55 Rate of the measures implemented related to TOPIC 2 by type of cruise port (score 1 negative. score 5 very positive)



Source: FVP own elaboration based on the survey replies

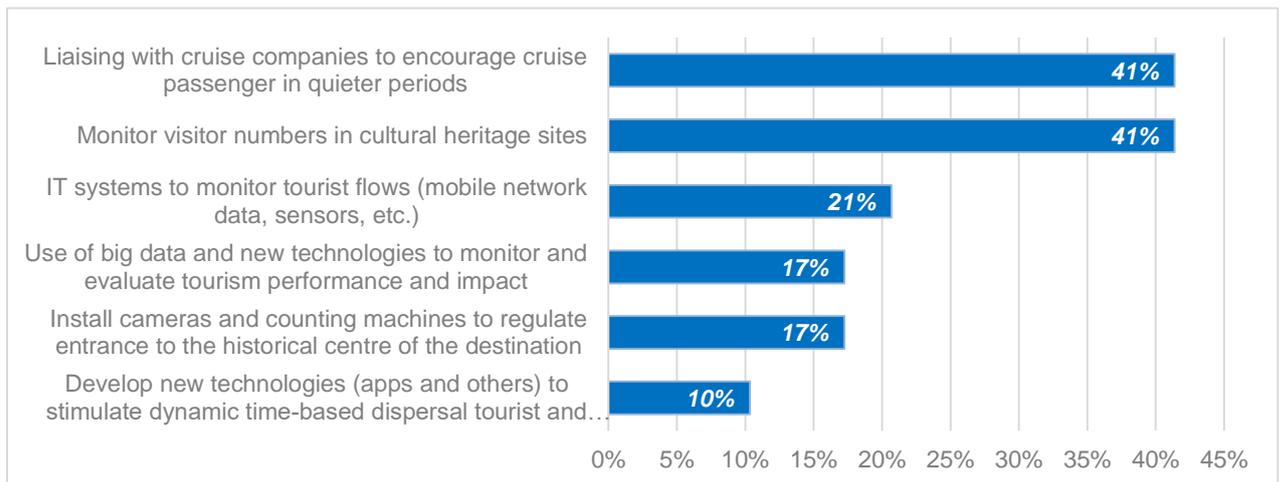
TOPIC 3: TOURIST MANAGEMENT FLOWS

The third topic analyses in detail the measures implemented in cruise destinations for monitoring the tourist flows. The specific measures analysed under this category includes the following ones:

- Monitor visitor numbers in cultural heritage sites
- IT systems to monitor tourist flows (mobile network data, sensors, etc.)
- Install cameras and counting machines to regulate entrance to the historical centre of the destination
- Use of big data and new technologies to monitor and evaluate tourism performance and impact
- Develop new technologies (apps and others) to stimulate dynamic time-based dispersal tourist and residents
- Liaising with cruise companies to encourage cruise passenger in quieter periods

When Topic 3 is analysed, we observe that the measures relating to "Monitor visitor numbers in Cultural Heritage Sites" and "Liaising with Cruise companies to encourage cruise passenger" have been the main ones indicated by the respondents with 41% each measure (Figure 56)

Figure 56 Main measures implemented by cruise destinations in relation with "Tourist Management Flows" (Topic 3)

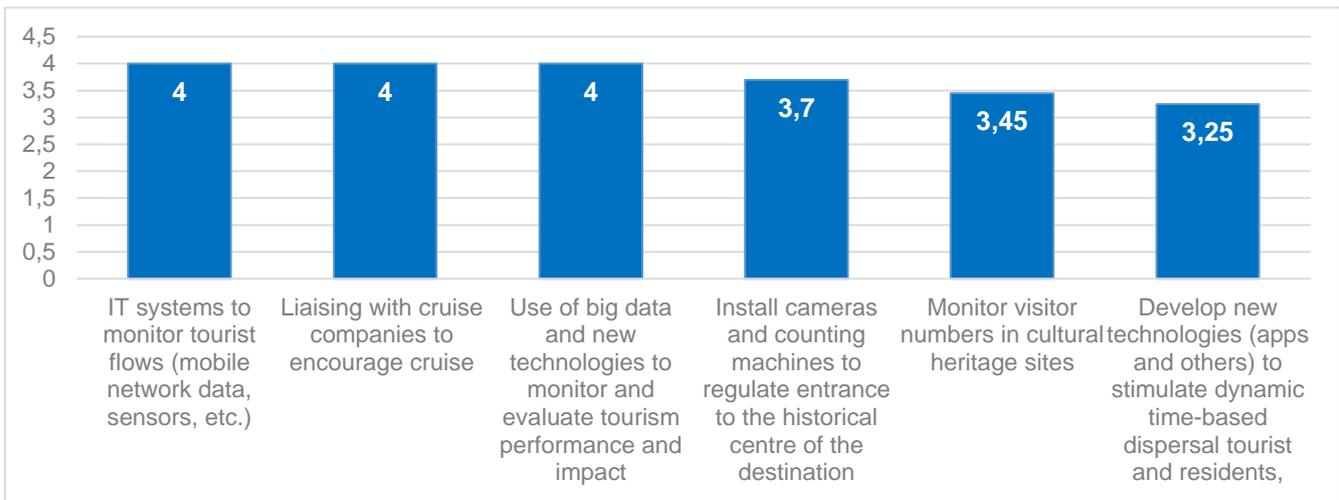


Source: FVP own elaboration based on the survey replies

4.6.1. Sustainable Cruise Destination

The average rating of the measures implemented by the respondents on this topic is 3.7, being the highest rated measures “IT systems to monitor tourist flows”; “Liaising with cruise companies to encourage cruise” and “Use of big data and new technologies to monitor and evaluate tourism performance and impact” (Figure 57)

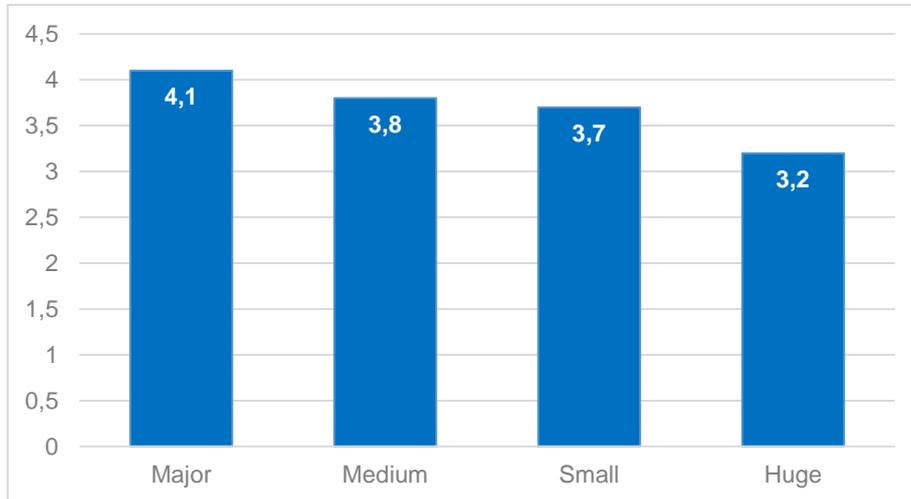
Figure 57: Rate of the measures implemented related to TOPIC 3 (score 1 negative, score 5 very positive)



Source: FVP own elaboration based on the survey replies

Finally, Major ports rated the highest degree of implementation of the measures under study included in TOPIC 3. On the contrary, huge ports are the ones with the lowest degree of implementation of such measures (Figure 58)

Figure 58 Rate of the measures implemented related to TOPIC 3 by type of cruise port (score 1 negative, score 5 very positive)



Source: FVP own elaboration based on the survey replies

TOPIC 4: INCENTIVES OR TAX REGULATIONS

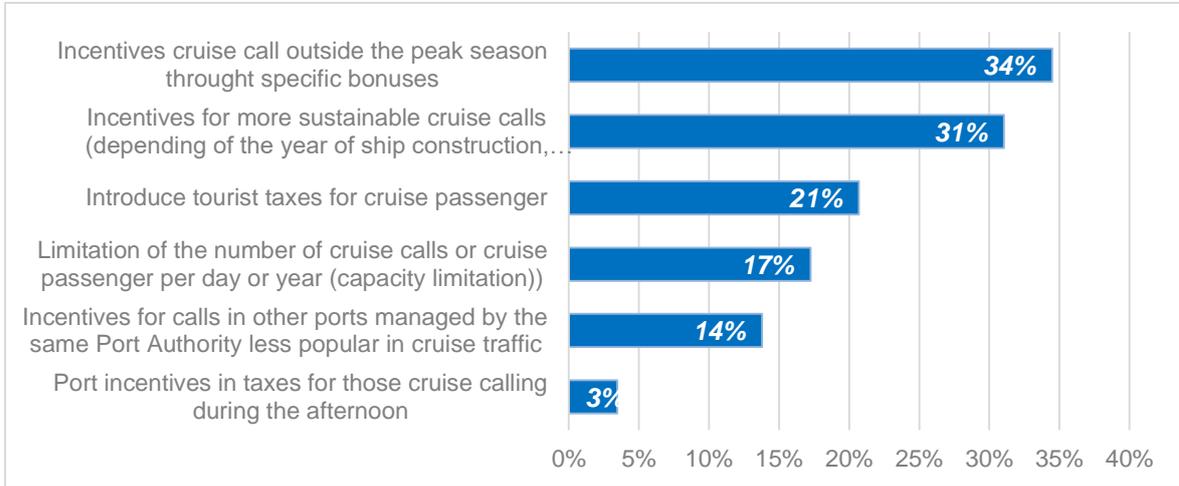
The last category of topics analysed in the questionnaire focuses on the measures implemented based on incentives or taxes to regulate/decongest cruise traffic. In particular, this category includes the following:

- Introduce tourist taxes for cruise passenger
- Incentives cruise call outside the peak season through specific bonuses
- Incentives for more sustainable cruise calls (depending of the year of ship construction, homeporting, etc.)
- Limitation of the number of cruise calls or cruise passenger per day or year (capacity limitation))
- Port incentives in taxes for those cruise calling during the afternoon
- Incentives for calls in other ports managed by the same Port Authority less popular in cruise traffic

When the measures included in TOPIC 4 are analysed, it is observed that the “Incentives cruise call outside the peak season through specific bonuses” and “Incentives for more sustainable cruise calls (depending of the year of ship construction, homeporting, etc.) are the most used with 34% and 31%, respectively (Figure 59).

4.6.1. Sustainable Cruise Destination

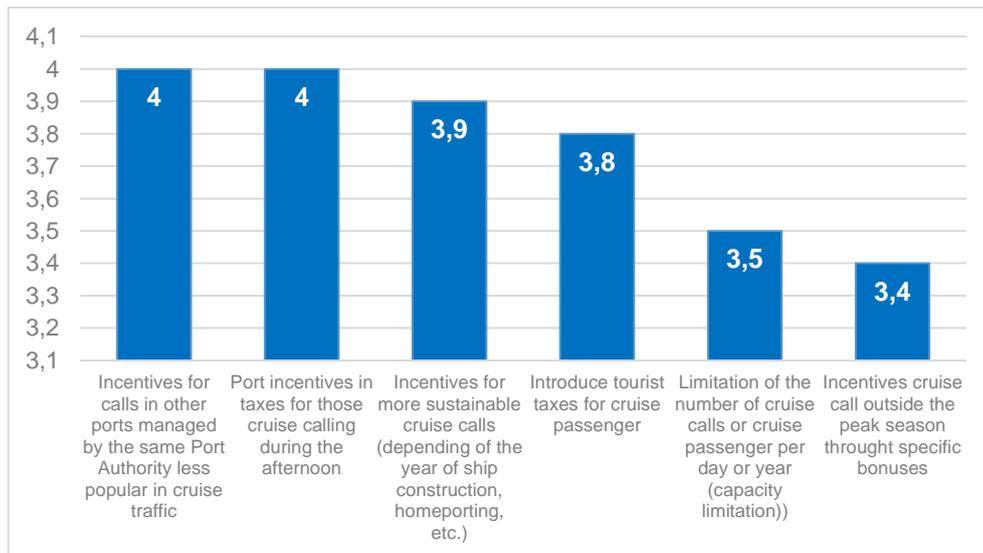
Figure 59 Main measures implemented by cruise destinations in relation with Incentives or Taxes regulations (Topic 4)



Source: FVP own elaboration based on the survey replies

The average rating of the measures implemented by the respondents on this topic is 3.7, being the “Incentives for calls in other ports managed by the same Port Authority less popular in cruise traffic” and “Port incentives in taxes for those cruise calling during the afternoon” those that obtained the highest score (Figure 60).

Figure 60 Rating of measures implemented, average

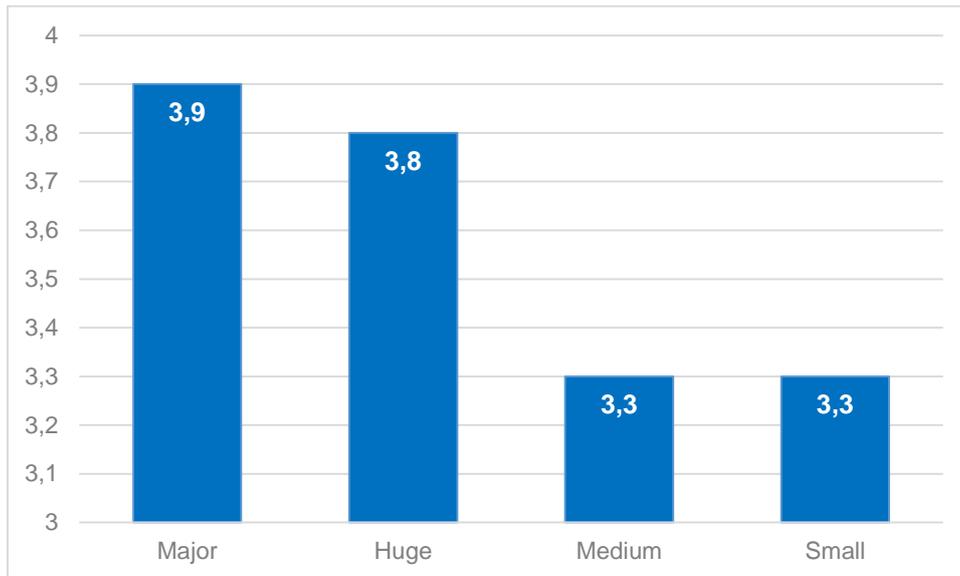


Source: FVP own elaboration based on the survey replies

4.6.1. Sustainable Cruise Destination

Finally, large differences in the rating of implementation are found when analysing port by size, finding that Major ports obtained the highest rate (3.9) and, on the contrary, the medium and small ports obtained the lowest score (3.3) (Figure 61)

Figure 61 Rate of the measures implemented related to TOPIC 4 by type of cruise port (score 1 negative, score 5 very positive)

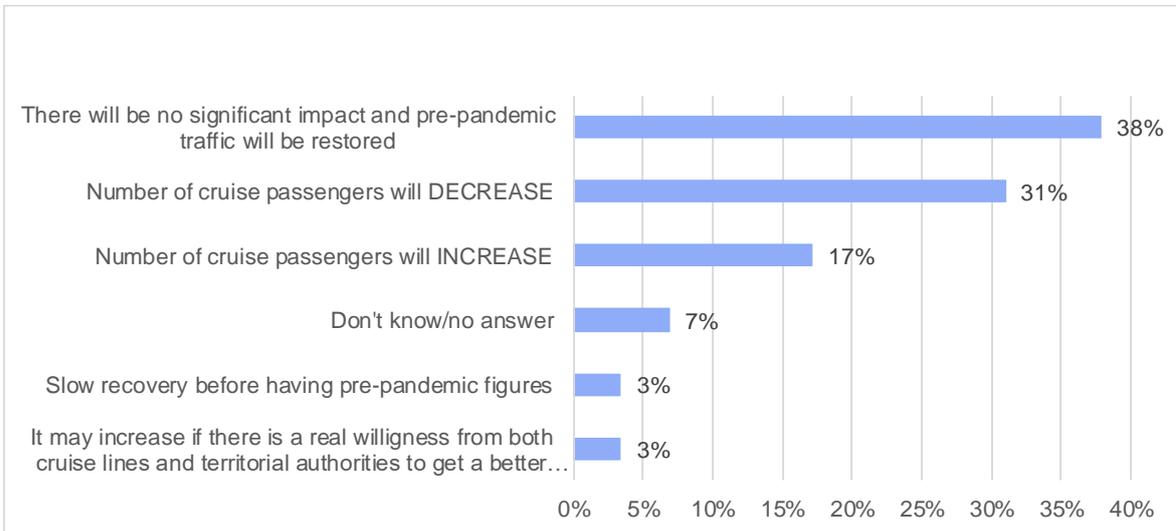


Source: FVP own elaboration based on the survey replies

iv. COVID Situation

Given the situation experienced during the execution of this work, an assessment of how the pandemic situation experienced during 2020 and 2021 affected cruise destinations was also included. In this respect 38% of respondents considered that “there will be no significant impact and traffic will be restored”, while 31% consider that there will be a “decrease” and 17% and “increase” (Figure 62).

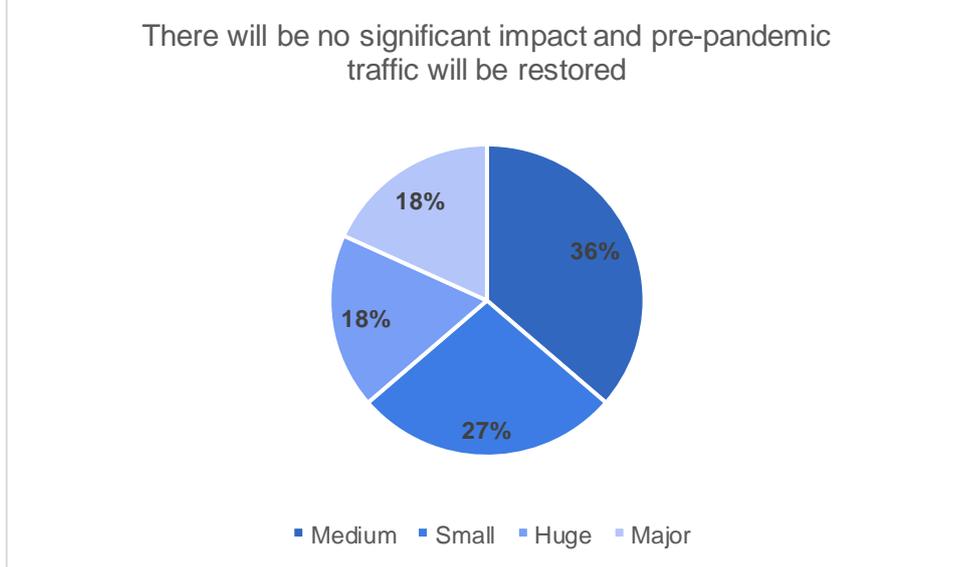
Figure 62 How do you think the COVID 19 pandemic will influence cruise tourism in your destination when it returns to normal?"



Source: FVP own elaboration based on the survey replies

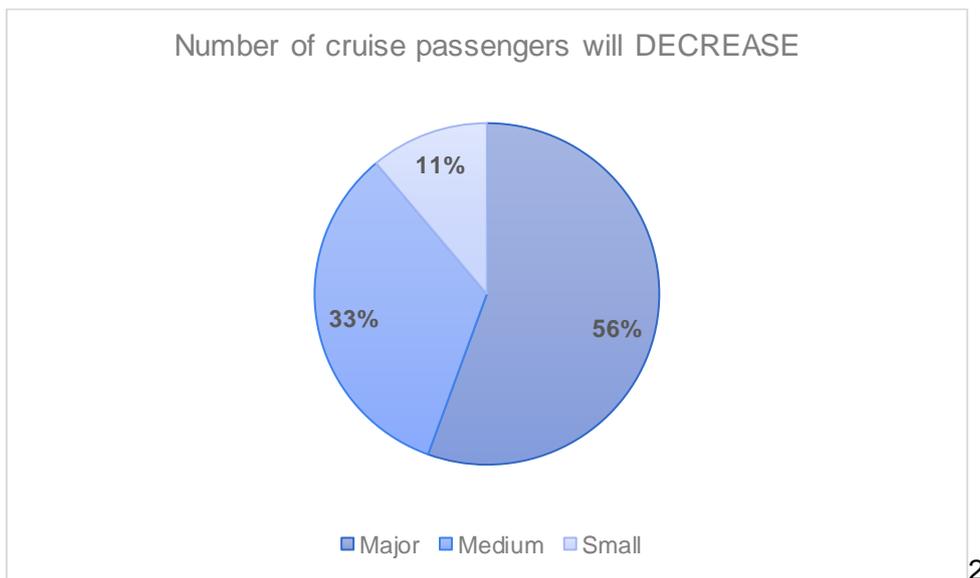
Medium sized ports with 36%, followed by small ports (27%) have the perception that “there will be no significant impact and traffic will be restored” (Figure 63). On the other hand, it is mainly the Major ports (56%) who consider that traffic will decrease post pandemic (Figure 64)

Figure 63 Type of port who think that will be not significant impact and traffic will be restored



Source: FVP own elaboration based on the survey replies

Figure 64 Type of port who think that traffic will be decrease after pandemic

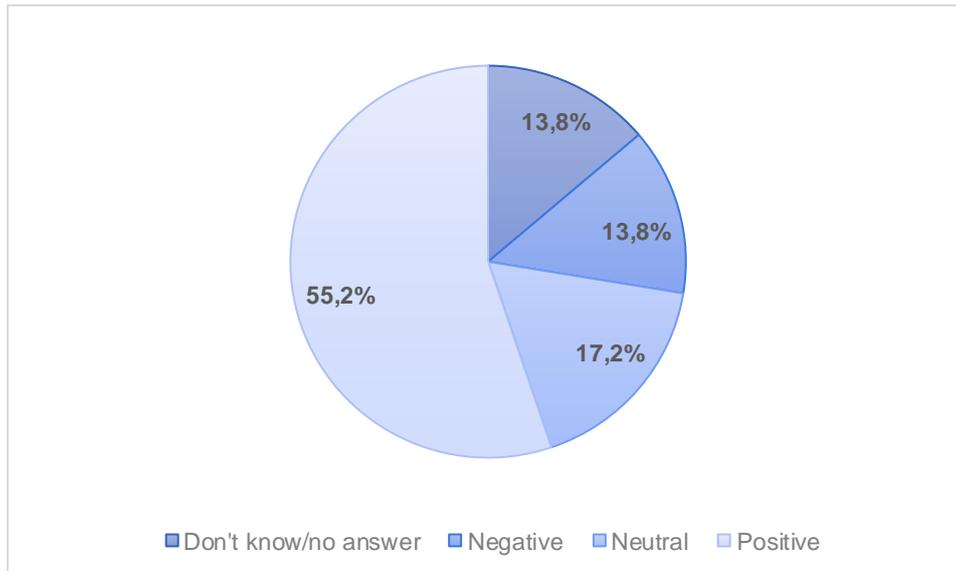


Source: FVP own elaboration based on the survey replies

4.6.1. Sustainable Cruise Destination

On the other hand, 55.2% of those surveyed rated positively to the question “how will cruise be welcomed in their destination after COVID 19” and only 13.8% negatively.(Figure 65). It is mainly medium-sized (67%) and small (56%) destinations that have the most positive ratings (Figure 65).

Figure 65 How will cruise be welcomed in your destination after COVID 19?



Source: FVP own elaboration based on the survey replies

Figure 66 Perception of small and medium ports how will cruise be welcome in their destination after Covid19

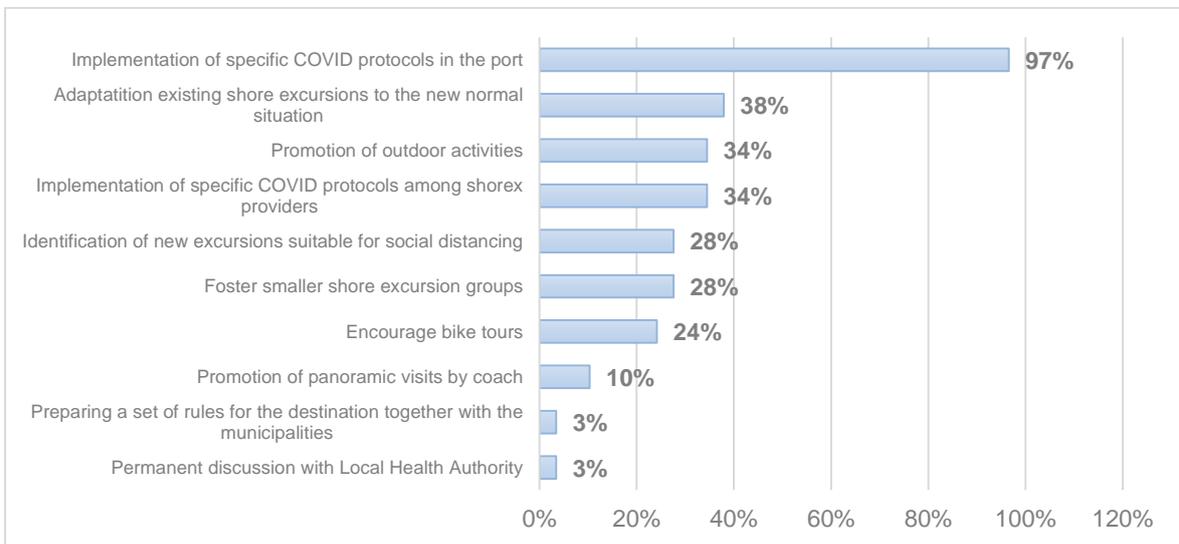


Source: FVP own elaboration based on the survey replies

4.6.1. Sustainable Cruise Destination

Several measures were indicated by ports and cruise destinations to be put in place to reactivate the cruise industry in each of the analysed cruise port destinations. The main measure highlighted was the “Implementation of specific COVID protocols in the port” (97%) follow by “Adaptation existing shore excursions to the new normal situation” (38%), and “Promotion outdoor activities” (34%) and “Implementation of COVID protocols among shorex providers” 34%) (Figure 67)

Figure 67 What measures are being developed in port and destination to be prepared for attending cruise ships and passengers after the pandemic (such as protocols)?



Source: FVP own elaboration based on the survey replies

4. Main findings

Figure 68 Main Findings of the Sustainable Cruise Tourism Destination Survey

MAIN FINDINGS

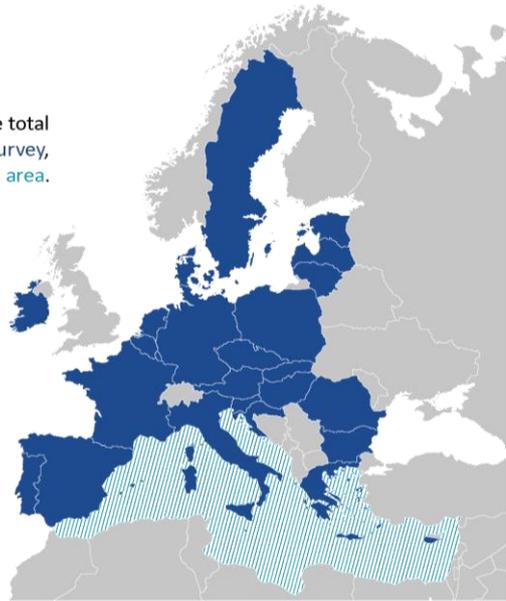

 Cruise tourism represents **17%** on average of the total number of tourists for the 29 destinations that answered the survey, being **69%** of such destinations located in the Mediterranean area.

Cruise passengers' mobility in cruise destinations:

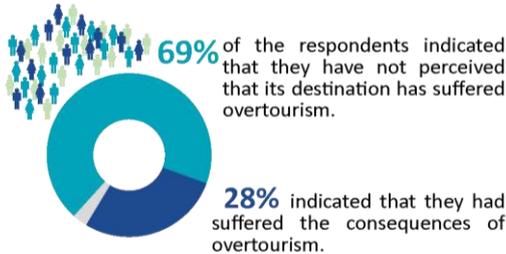

 Between **30** and **60%** of passengers visit the destination through hired excursions. (According to 60% of the respondents)

Free Independent Cruisers represent on average **46%** of all passengers, rising to 53% in the case of medium-sized ports.


 Around **11%** of cruisers spend their time on the ship without visiting the destination during the cruise call.



Overtourism perception:



In particular, **38%** of the ports classified as "major ports" are the ones which had overtourism issues.

Main problems identified by the destination ports linked to cruise activity were:



25% Seasonality of cruise tourism activity
20% Strong environmental impact
18% Overcrowded tourist attractions
18% Tourist imbalance between areas
16% Residents' complaints

The most frequent measures implemented by the Cruise Destination Authorities are:

Coordination and cooperation
Regular meeting with stakeholders
Offer tours outside of the city
Identify and assess all natural and cultural heritage
Promotion of local culture knowledge and immersion in local customs

Coordination and cooperation (76%) | Regular meeting with internal and external stakeholders (76%) | Collaboration with tour operators and cruise company to offer tours outside of the city (66%) | Identify and assess all natural and cultural heritage sites that are possible for shore excursion visits (59%) | Organize guide excursions linked to the promotion of local culture knowledge and immersion in local customs (59%)

Source: FVP own elaboration based on the survey replies

5. Conclusions

According to the results of the analysis, cruising ports are concerned about the impact on destinations, mainly in terms of the environment, congestion in tourist attraction areas, and imbalance between tourist areas, which in some cases leads to complaints from residents. Therefore, in this final chapter, a series of general recommendations will be made to provide guidelines for destinations to achieve better management of cruise tourism, contributing to the sustainability of cruise destinations.

Cruise destinations that want to achieve a more sustainable cruise tourism management should work on the following 7 main lines of action:

1. Defining and promoting a sustainable cruise strategy

Planning and strategy must be based on real data collected: cruise tourism, as a tourism activity, is vulnerable and sensitive to unforeseen political and economic changes in a destination. Take note of the emerging situation of COVID-19 which becomes a turning point for this activity. It is important to face the challenge of change, so risks and threats should be key factors in cruise tourism strategies.

A strategy including standards for Heritage Impact and Carrying Capacity Assessment such the one developed in HERIT DATA project should be developed together with all stakeholders. Participatory processes and the involvement of stakeholders in decision-making will lead to continuous and long-term development.

2. Communicating and engaging with local stakeholders

Tools and knowledge regarding the objectives, planning and implementation of a sustainable cruise destination must be well known and established. The results of the survey showed that the topic most highly rated by the respondents in terms of effectiveness of the implementation of the measures is topic 1 (Promotion of sustainable tourism strategy). Of all the measures implemented, coordination and cooperation and regular stakeholder meetings were the most mentioned.

3. Establishing monitoring and feedback measures

Quantitative targets and indicators should be collected at an early stage in order to accurately observe the dimensions and development of cruise tourism. Relevant indicators should be permanently available and collected. The data should be used in decision-making and policy-making. It is important to define monitoring tools to plan, manage and evaluate tourism and its impact on an ongoing basis, especially in relation to cultural and natural heritage sites. On this point, the implementation of technological systems and tools that allow for the collection and automatic processing of data in real time is one of the measures most frequently identified by Large and Cruise destinations.

4. Promote the dispersion of visitors inside and outside the city and stimulate new itineraries and attractions for visitors.

Promote attractions and places of interest outside the "must-see" cultural hotspots of the destination: in order to avoid congestion, cruise destinations should consider promoting attractions and places of interest outside the main points of the destination. Two relevant issues need to be taken into account. Firstly, it is important to know whether the cruise passenger is a first-time or repeat visitor. If the cruise passenger is visiting the destination for the first time, it is more difficult to divert his or her visit from the city's best-known sights. On the other hand, if the cruiser has already been to the destination, he/she will be susceptible to visiting alternative cultural spots. Secondly, it is necessary to have an inventory of all the points of cultural interest both in the destination itself and in a nearby radius. Cruise passengers have limited time in port, so experiences ashore should be adapted accordingly.

5. Improve visitor segmentation

The destination needs to work to identify the cruise segments that have the least impact and can maximise the benefits to the destination. This requires understanding the motivations of cruise visitors and designing a unique experience offer that "immerses" cruise visitors in the local culture. In addition to implementing measures that discourage certain segments of visitors from visiting the city.

6. Adapt regulations

Some of the other measures that destinations can consider to improve the management of cruise flows are aimed at adapting regulations such as the revision of fee regulations (e.g. tourist taxes and port taxes).

7. IT systems to manage tourist flows

Develop digital initiatives to promote monitoring and data-driven decisions and planning on key issues such as carrying capacity, mobility, natural and cultural resource management and residents' attitudes towards tourism. Invest in technology, innovation and partnerships to promote smart cities, leveraging technology to address sustainability, accessibility and innovation.

In this sense, precisely the Herit Data project can be a reference for those cruise destinations willing to implement tourist monitoring measures, considering that two cruise destinations in particular, Dubrovnik and Valencia, have developed pilots for the implementation of IT systems for people counting. On the one hand, Dubrovnik through counting cameras placed on all entrances and exits of the Dubrovnik historic core and on the other hand, Valencia through the installation of WIFI-based sensors will be installed in the entrance of some cultural heritage buildings, in transit points between heritage buildings and in relevant access points of tourists to the city (like the cruise terminal at the Port of Valencia).

6. ANNEX

6.1. Annex 1 WHO DOES WHAT IN THE CRUISE SHIP SECTOR

There are many different types of organisations involved in the cruise ship sector.

CRUISE SHIP OPERATORS /TRAVEL AGENTS

The cruise journey starts at home, with passengers researching itineraries and prices via web portals or agencies including: travel agencies; cruise ship company websites; or cruise 'consolidators'. When passengers book with a cruise ship company they can purchase from a range of shore excursions. These trips and experiences can also be booked on-board at the ship's excursion desk, or online before departing on the cruise.

PORT AUTHORITIES

Port authorities are the official organisations that control and manage activities in a port. They are responsible for safely handling ship arrivals and departures.

SHIPPING AGENTS

Shipping agents are licensed agents in a port who transact a ship's business, such as insurance or documentation, on behalf of the owners. They also arrange provisions and fuel.

CRUISE TERMINAL & PORT OPERATORS

Facility that provides the infrastructure and operations for cruise ship and cruise passenger arrival (turnaround and transit)

SHIP SUPPLIERS

Provide goods and services to cruise ships while at the destination.

GROUND HANDLERS AND TOUR OPERATORS

Tour Operators work on contract to the cruise ship companies. Their role is to develop, organise and sell shore excursion itineraries to cruise ship companies, who then sell these on to passengers.

INDEPENDENT EXCURSION PROVIDERS

Independent from the cruise lines, these companies offer shore excursions directly to passengers who may have researched excursion opportunities at individual ports of call.

TOUR GUIDES

At most cruise ports, tour guides are an essential part of the overall visitor experience, providing a guide service to passengers via shore excursion or cruise ship companies, or offering their own tours via the ground handlers or independently.

LOCAL BUSINESSES

At every port of call, local businesses including visitor attractions, activity providers, shops, cafes, bars and restaurants combine to provide memorable onshore visitor experiences.

DESTINATION MANAGERS AND POLICYMAKERS

Development of policies and management of operations within the destination. They have a crucial role to play in marketing a port and co-ordinating / consolidating the onshore visitor offer and experience.

6.2. Survey

HERIT-DATA´s Survey

Welcome to Herit-Data´s Survey. You are invited to take part of this European funded project called HERIT-DATA (<https://herit-data.interreg-med.eu/>), which aims to identify innovative solutions, with the support of new technologies and big data, to reduce the negative impacts of tourism on cultural and natural heritage sites.

We kindly ask you to fill in the following questionnaire. The scope of the questionnaire is to identify measure adopted for a Sustainable Cruise Destination towards cultural heritage.

It will take no longer than 10 minutes. By participating in the survey, you consent to use the data you provide in Herit-data and to make them publicly available in anonymised form.

Thank you very much for your collaboration!!

***Required**

General Information

Name:

Your answer

Surname

Your answer

Email:

Your answer

Name of the Company or Organisation you represent *

Your answer

Country *

Your answer

Name of the port or destination you represent *

Your answer

Data request from cruise tourist activity in your area

In this section, we are asking you to please provide some key figures about the cruise activity in your destination/port

Total number of cruise passengers in 2019:

Your answer

Number of cruise ships calls in 2019:

Your answer

Average stopover time of cruise ships:

Your answer

Total number of tourist in 2019 in your city:

Your answer

Untitled section

% Cruise passenger with organised shore excursions:

Your answer

% Free Cruise Independent passengers:

Your answer

% Passengers remaining on board:

Your answer

Cruise activity impact on the destination 2019

1. What is the opinion of the local communities on the impact of cruise tourism on destination identity & cultural heritage?

Positive
Negative
Neutral
Na/Nc

2. Has your cruise destination experienced problems resulting from “overtourism” prior to the Pandemic?

Yes
No
Na/NC

2.1 What were the main problems that your destination was facing related to the cruise activity?

- Tourist attractions overcrowded
- Public Transport saturation
- Strong environmental impact
- Tourist imbalance between areas
- Seasonality of the cruise tourist activity
- Resident's complaints
- Other:

Measures

This section aims at collecting measures implemented by ports or detinations to better manage the cruise tourist flows.

3. Have any of the following measures been implemented to reduce high visitor pressure on destination and in particular for cruise tourist? (more than one reply can be selected)

TOPIC 1. Promote sustainable tourism strategies

- Development of Sustainable Cruise Tourism Strategic Plan or Sustainable Tourism Strategy Plan including cruise traffic

4.6.1. Sustainable Cruise Destination

- Regular meetings with (internal and external) stakeholders related to cruise tourism (such as Advisory Committees, Working Groups, etc) to foster communication, coordination and cooperation
- Assess and establish optimal level of cruise passengers capacity in relation to overall visitors to destinations
- Promote the positive impacts of cruise tourism activity, create awareness and knowledge of the sector amongst local communities (such as communication campaigns, targeted training, publicity campaigns, conferences, ...)
- Qualitative data collection on opinions of residents and entrepreneurs, which provide insight into the experience of tourism, crowdedness and their impact on liability
- Quantitative data collection on the impact of cruise activity on the destination
- Other:

How do you rate the implementation of the measures implemented related to TOPIC 1?
(1 negatively 5 very positively)

- 1
- 2
- 3
- 4
- 5

TOPIC 2. Stimulate the deconcentration on the main tourist attractions

- Identify and assess all natural and cultural heritage sites that are possible for shore excursion visits
- Promote the dispersion of visitors to neighbouring municipalities by encouraging visits to their attractions.
- Identify opportunities to spread cruise tourism visitors flows across activities and attractions
- Adapt the offer of activities or shore excursions according to different cruise segments (contemporary, premium, luxury, expedition).
- Organize guide excursions linked to the promotion of local culture knowledge and immersion in local customs
- Collaboration with tour operators and cruise company to offer tours outside of the city
- Implementation of crowd management systems (IT systems for instance)
- Other:

How do you rate the implementation of the measures implemented related to TOPIC 2?
(1 negatively 5 very positively)

- 1
- 2
- 3
- 4

5

TOPIC 3. Toursit Management Flows

- Monitor visitor numbers in cultural heritage sites
- IT systems to monitor tourist flows (mobile network data, sensors, etc.)
- Install cameras and counting machines to regulate entrance to the historical centre of the destination
- Use of big data and new technologies to monitor and evaluate tourism performance and impact
- Develop new technologies (apps and others) to stimulate dynamic time-based dispersal tourist and residents
- Liaising with cruise companies to encourage cruise passenger in quieter periods
- Other:

How do you rate the implementation of the measures implemented related to TOPIC 3?
(1 negatively 5 very positively)

TOPIC 4. Incentives or Taxes regulations

- Introduce tourist taxes for cruise passenger
- Incentives cruise call outside the peak season through specific bonuses
- Incentives for more sustainable cruise calls (depending of the year of ship construction, homeporting, etc.)
- Limitation of the number of cruise calls or cruise passenger per day or year (capacity limitation))
- Port incentives in taxes for those cruise calling during the afternoon
- Incentives for calls in other ports managed by the same Port Authority less popular in cruise traffic
- Other:

How do you rate the implementation of the measures implemented related to TOPIC 4?
(1 negatively 5 very positively)

COVID 19 pandemic impact on cruise activity

5. How do you think the COVID 19 pandemic will influence cruise tourism in your destination when it returns to normal?

- I think that the number of cruise passengers will DECREASE
- I think that the number of cruise passengers will INCREASE
- I think there will be no significant impact and pre-pandemic traffic will be restored
- Don't know/no answer
- Other:

5.1 Why?

Your answer

6. How will cruise be welcomed in your destination after COVID 19?

- Positive
- Negative
- Neutral
- Don't know/no answer

6.1 Why?

Your answer

7. What measures are being developed in your port and destination to be prepared for attending cruise ships and passengers after the pandemic (such as protocols)?

- Implementation of specific COVID protocols in the port
- Implementation of specific COVID protocols among shorex providers
- Identification of new excursions suitable for social distancing
- Adaptation existing shore excursions to the new normal situation
- Promotion of outdoor activities
- Promotion of panoramic visits by coach
- Encourage bike tours
- Foster smaller shore excursion groups

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