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Additional Information

The Concept of Landscape within Marinas: Basis for consideration in the management

Ricardo Martín[a,*], Víctor Yepes[b]

[a]School of Civil Engineering, Universitat Politècnica de València, 46022, Valencia, Spain

[b]ICITECH, Universitat Politècnica de València, Spain

Abstract

The landscape is a complex concept that deals with the relationship between people and their environment. The concept therefore encompasses many perspectives, and each area of knowledge approaches it differently. Ports are unique elements within the landscape, with great attractiveness since ancient times, and its position on the coastline represents a superb base to observe their surroundings. Moreover, marinas are ports that specialize in pleasure crafts with a great potential for leisure. In this sense, this study introduces the landscape in the marinas —grounding its particularities of function and scale with respect to other port facilities— through a three-part Delphi survey that was conducted on a sample made up of an expert panel (n=23) in landscape and marinas from academia, consulting and management practice from Spain. Based on the concept of landscape, and after the analysis of existing literature and documents, the current research examines expert opinion on the various elements that embrace the landscape in marinas. Through a combination of open-ended responses, and Likert-type questions, the experts' panel attempts to identify the elements that should be considered in each of the approaching stages, and its respective rates. This set of criteria constitutes a starting point for a better understanding of the landscape in these types of maritime facilities. Also, it provides the basis to properly incorporate the landscape into the planning and management of marinas.

Key words: landscape, marinas, Delphi survey, port management.

1. INTRODUCTION

The landscape is an ambiguous concept that is vague enough to allow for a cross-cultural understanding. This ambiguity may create the risk of constriction and a biased perspective when dealing with it, and can generate it to attempt ownership of it (Butler and Åkerskog, 2014). If we focus on marinas, they are characterized by their leisure nature. Contemplation of a pleasant environment acquires great importance in achieving a character of leisure (Martín and Yepes, 2017). This paper sets out to deepen the concept of landscape in the marinas and to clarify the elements that comprise it and their assessments through the Delphi method.

The European Landscape Convention (ELC) defines landscape as *"an area, as perceived by people, whose character is the result of the action an interaction of natural and/or human factors"* (Council of Europe, 2000a:1a). This definition gives importance to the subjective versus the physical aspect, which gives importance to the involvement of people and the promotion of their participation (Council of Europe, 2000a, 5c). This issue has been addressed in previous studies (e.g. Butler and Åkerskog, 2014; Dupont et al., 2015; Eiter and Vik, 2015; Selman and Barker, 1989; Stenseke, 2009). Observations must be free and avoid influences that aim to ensure the diversity of perceptions and the richness of the landscape. However, there must be a balance between the subjective perception and the physical space. If the reality focuses on the experience of people, the landscape then depends on the interaction between people and society, with a strong influence on public participation. If the reality moves towards the physical perception, landscape will be dominated by the experts and away from participatory processes (Butler and Åkerskog, 2014). The ELC recognizes the fundamental role of knowledge, where the preliminary stage of landscape policy involves having adequate instruments to implement the provisions of this treatment. This instrument created by policymakers may confront the free and unbiased view of people. Nevertheless, the ELC encourages feedback between the experts and technical application with public perception (Conrad et al., 2011; Council of Europe, 2000b; Olwig, 2007), *"with the aim of enabling them to play an active role in formulating, implementing and monitoring landscape quality objectives"* (Council of Europe, 2008, I, 1G).

As stated by Chaney (1961), marina is a word coined in 1928 by the National Association of Engines and Boats Manufacturers. According to *The Yacht Harbour Association* (TYHA, 2007), a marina comprises a wide range of facilities, from a small yacht haven for a few boats to a multiple vessel harbour with a variety of services. It leads to a broad definition of marina as a recreational boat facility serving pleasure craft (Diakomihalis, 2007; Orams, 1999; PIANC, 1976), not only as a parking place for boats —berthing facilities— but also for amenity purposes, including entertainment and leisure facilities (Adie, 1984; Heron and Juju, 2012; Kenchington, 1993; Paker and Vural, 2016; Stone, 2000). However, as Adie (1984) notes, sometimes this word is wrongly used as meaning any collection of moorings, without taking into account the number and quality of the services rendered, both own vessels and their crew and visitors. To avoid this, some authors (e.g. Adie, 1984; Esteban, 1998; Martín,

1995) establish different categories of marinas in an attempt to encompass the variety of designs and services provided. As Tobiasson and Kollmeyer (1991) point out, there are as many definitions of marinas as types that exist.

Although the influencing factor of coastal scenery have been widely studied by scholarships (e.g, Anfuso et al., 2014; Ergin et al., 2004; Ergin et al., 2006a; Ergin et al., 2006b; Ergin et al., 2010; Ergin et al., 2011; Mooser et al., 2018; Rangel-Buitrago. 2019; Williams et al, 2012), marinas, undoubtedly, appear as singular elements in the landscape. Their positions on the coastline represents a well-rounded base for viewing their surroundings, which itself represents a recreational source due to its diversity of landscape, aesthetic attributes and high potential for leisure (Orams, 1999; Sowman, 1987). In addition, in relation to other ports, they are characterized by its nature of their function, predominantly pleasant comparing with commercial or fishing ports, and in the scale of the relations, both internal and external, allowing greater proximity and linkage (Martín and Yepes, 2017). The contemplation of a pleasant environment acquires great importance in the achievement of the leisure character of the marinas. Also, marinas are able to gain economic benefits with environmental quality and scenic views of their surroundings (Blain, 1992; Petrosillo et al., 2009). This circumstance would require that any action developed in the ports would previously define landscape objectives, seeking balanced solutions between natural and artificial environments. However, it is clear that there has not always been an appropriate management of landscape in the planning and development of marinas because there is no precise concept about what it constitutes. A detailed analysis of the current state of the art in this topic reveals the issues that have been more addressed in the field of marinas correspond to their relationship with nautical tourism (Esteban and Yepes, 1998; Luković, 2013; Paker and Vural, 2016: Sari et al., 2016).

In this context, this study deals with an ambiguous concept within an infrastructure included in a dynamic environment, which also attempts to explore the elements that encompass landscape, and obtaining and initial rating. There are many different techniques for researchers to quantify the beauty of a scenery (e.g. Ergin et al., 2004; Williams, 2019), but the first step does not focus on evaluation, but on identifying which elements make up the landscape in the marinas and prioritize those elements. For this purpose, we use a Delphi method which will enhance the base for future studies. Hence, the goals are (1) to identify the elements that embrace the landscape within marinas, and (2) to rate the criterion obtained.

2. RESEARCH PROCESS

Dealing with the ambiguity of the landscape, using the Delphi Method is recommended due to the absence of objective data and precise analytical techniques, the inability to use analytical techniques, and the disagreement that may arise among experts (Hallowell and Gambatese, 2010; Linstone and Turoff, 1975; Pill, 1971).

The Delphi method is a structured and systematic technique of communication. It serves to interpret factual evidence, and to anticipate future solutions and priorities under uncertainty (MacMillan and Marshall, 2005; Powell, 2003; Rikkonen and Tapio, 2009; Webler et al., 1991). It is based on the principle that the decisions of a structured group are more accurate than the unstructured ones (Rowe and Wright, 1999). In this technique, a group of experts in the subject matter undergo multiple iterations to enable the achievement of a consensus by iterative rounds of progressive blinded feedback that allow the variation of answers to be reduced (Chu and Hwang, 2008; Dalkey and Helmer, 1963; Grisham, 2009). This method encourages the discovery of opinions, determines the most important issues, and identifies areas of agreement (Hasson et al., 2008; Linstone and Turoff, 1975; Plummer and Armitage, 2007). The anonymity context avoids the inhibition of novel ideas, the destructive power dynamics and the influence of dominant individuals (Powell, 2003), thus, increasing the reliability of the consensus opinion.

The Delphi method has been used in a range of applications. Though, if we focus on ports, issues are related to tools for strategic management (Huang, 2004; Párraga et al, 2014), maritime strategy (Arof, 2015; Othman et al., 2011; Saldanha and Gray, 2002; Salvador et al., 2016; Tsai and Su, 2004), selection of destination ports (Lirn et al., 2004; Venkatesh et al., 2017; Wang et al., 2014), port services and facilities (Hasanzadeh et al., 2013; Jingjing and Dong, 2012), port logistic (Jiao, 2012; Liu, 2010), or social and environmental management (Chen and Pak, 2017; Vanelslander, 2016). However, no references have been found for landscape within ports or, moreover, marinas.

As a starting point, we conducted a systematic review of the biography that employed “landscape” and “Delphi” on the topics addressed in several data bases. The total number of papers was approximately over 100. This initial collection was trimmed via a further examination, and just those studies that clearly specified necessary details and requirement for the Delphi survey, and also included a relation of parameters, indicator or values assessment of landscape, were taken into account. After this visual examination, eight papers were finally accepted. The revised issues were the following: requirements determined a participant to be an expert, number of experts, number of rounds, and number of parameters used in the survey. Table 1 summarizes the reviewed data taken as a reference.

Table 1. Characteristics of Delphi studies on landscape

Study	Panelists qualification	No. panelists	No. rounds	No. parameters	Selection criterion
Benitez-Capistros et al (2014)	Group selection (government officials, scientists, local residents, NGOs)	10	3	55	Consensus (qi≥3.5; Q≤0.5)
Edwards et al. (2012)	Group selection and 'snowballing' technique	48	2	12	Stability (changes between rounds <20%)
Hai et al. (2015)	Group selection	50	2	20	Consistency (*W*)
Kuo&Chiu (2006)	Group selection (professor, experts NGOs, officials)	18	3	67	Stability (changes between rounds <15%)
Meijering et al (2015)	Academics (researchers with publications) and professionals (jurors or winners of competitions)	46	3	15	Threshold percentage (agreement index ≥0.5)
Moore et al. (2009)	Group selection	8	3	9	Threshold percentage (>75%)
Orsi et al. (2011)	Competence and 'snowballing' technique	30	2	88	Threshold percentage (>50%)
Su et al. (2013)	Group selection		3	20	Threshold percentage (>65%)

2.1. Marina landscape criteria

Traditionally, the landscape within marinas has been considered an aesthetic principle. Beauty of the landscape is a complex concept, consisting of various elements, tangible and intangible, that are perceived by each observer in a unique and different way (Girard, 2010; Roger, 1997; Williams, 2019), which is in line with the broad concept of landscape included in the ELC. We attempt to identify those elements which comprise landscape within marinas. We used two different reviews to detect those main items: (1) a general review of literature related to the design and management of marinas, highlighting those parts dealing with aesthetic (table 2), and waterfronts (table 3); and (2) a specific review, which seeks those individual elements that bridge the gap between the previous obtained items, and the landscape concept included in the ELC (table 6).

Firstly, we carried out a literature review related to the design and management of marinas, highlighting those aspects related to the landscape. The identification was driven through repetitive processes, that is: when a concept was identified in one of the references, that same one was searched for in the other remaining references. This led to several reviews, focusing on different topics. The starting point to obtain an accurate landscape definition that dealt with marinas was the study about seascape by Natural England (2012), which considered three main groups in forming the relationship between people and place: natural, cultural/social, and perceptual & aesthetic. This consideration was taken into account when grouping the concepts obtained during the bibliographic review process.

Focusing on this review, from the 1960s, topics are mainly focused on site selection and aesthetic principles (Ministerio de Obras Públicas, 1975; Moral and Berenguer, 1980). To begin with, site selection is one of the most important items developed by literature. The

recognition of context of the port represents the support for a better further development, including landscape items (Adie, 1984; Moral y Berenguer, 1980). A starting point to study the convenience of a port site is analyse the traditional locations used as moorings (Aguiló, 2013; ASCE, 2012). From the perspective of landscape, the general rule was for the port to not entail a significant loss of attraction to the site (Dionis, 1986). Next, the inner environment ought to be pleasant and harmonious to users, but not much deeper into this concept (e.g. James and Elwin, 1989; Ministerio de Obras Públicas, 1975; Moral and Berenguer, 1980). The development of the idea of pleasant environment relies on particular projects and circumstances —e.g. Chaney (1961) states that pleasant environments must be grounded in the design and the style of architecture, as well as the materials of construction used, and Adie (1984) gives importance to landscaping in the marinas—. Harmony is generally related to the proportion between the different elements of the marina, particularly to the relationship between water and land (Chaney, 1961; Ministerio de Obras Públicas, 1975).

However, since the 1970s, the broadening of the marina to non-nautical users has brought up other concerns. This new approach led to a wider understanding of the concept of landscape including relationship between the marina, the people, and its environment. Initially, marinas transform from *"gateway"* to the water to *"windows"* on the water (Adie, 1984; Corrough, 1991; Torre, 1989). Therefore, the principles of pleasure and site are completed with consideration of context and public needs (Adie, 1984; Torre, 1989; Wrenn et al., 1983). In addition, the awareness that the coastline is a scarce resource raised the need to consider the relationship between marinas and its environment, This was addressed in a vague and non-methodical way through three main stages: (1) to identify the level of protection of the different parts of the coastline and its capacity to host marinas; (2) to consider the compatibility between the marina and its environment; and (3) to search for coherence and understanding of the marina´s inner facilities (Ministerio de Obras Públicas, 1975; Webber, 1973).

Thus far, the interaction between the port and its environment was mainly addressed by their surrounding city. This issue has been broadly surveyed by scholars (Bird, 1971; Ducruet, 2008; Fujita and Mory, 1996; Hoyle, 1989; Meyer, 1999; Tunbridge and Ashworth, 1992) and also approached through waterfront revitalization studies (Alemany and Bruttomesso, 2011; Braae and Diedrich, 2012; Bruttomesso, 1993; Fisher et al., 2004; Hein, 2016; Hoyle, 1989; Malone, 1996; Meyer, 1999; Torre, 1989; Wrenn et al., 1983). In this sense, the main crucial obstacles to overcome in relation to waterfront development associated to the landscape in marinas are: (1) environmental compatibility, suitable and distinctive (Blain, 1992; Bruttomesso, 1993; Meyer, 1999; Wrenn et al., 1983); (2) transportation access (Bruttomesso, 1993; Fisher et al., 2004; Fitzgerald, 1986; Meyer, 1999; Wrenn et al., 1983); (3) community acceptance, combining leisure, living and working (Bruttomesso, 1993; Fisher et al., 2004; Fitzgerald, 1986; Malone, 1996; Meyer, 1999; Wrenn et al., 1983); (4) overcoming both,

physical and psychological barriers (Fisher et al, 2004; Fitzgerald, 1986; Pinder and Smith, 1999; Wrenn et al., 1983); and (5) long term endeavour and sustainable behaviour (Fisher et al., 2004). Table 3 summarizes the results from the review of the port landscape-related issues.

Finally, since the 2000s, scholarship tends to focus on the sustainable interaction between the marinas and their environment. Development must be pursued with the aim to gain a sound environmental and social management (ASCE, 2012; Biondi, 2014; Favro et al, 2008; Heron and Juju, 2012; Paoli et al., 2008), to comprise a wider hinterland, and considering water and berthing as a competitive and enhancing factor of any of the activities carried out within the port area.

However, we did not consider the data obtained sufficient for our purposes. First, we had to consider the hierarchical approach when it comes to dealing with the landscape (Burel and Braudry, 1999; Higgings et al., 2012; Martín and Yepes, 2017; Schmitz and Vanderheyden, 2016; Swanwick, 2002). Second, it was necessary to consider the landscape definition given by the ELC with greater emphasis on the difference between subjective and objective perceptions. Therefore and in a second stage, the summary of what constitutes seascape (Natural England, 2012) was enhanced and completed with specific items obtained for the marinas from the review conducted previously. We assembled three approach levels (territorial, local and inner context) and we considered social and physical components. Table 6 displays these levels and categories. This process was validated by a focus group, which was formed by the research team and three additional members, all of them professional with more than 8 years of experience in marina planning and management.

Table 2. Factors and criteria related with landscape within marinas and small craft harbours' literature

Item	Media	Description	References
Site selection	Accesses and communications		Tsinker, 1995; Webber, 1973
	Maritime climate	Winds, waves, currents, and tides	Adie, 1984; ASCE, 2012; Chaney,1961; Moral y Berenguer; 1980; Tobiasson and Kollmeyer; 1991; Tsinker; 1995; Webber, 1973
	Littoral drift	Silting, clay deposits, and erosion	Adie, 1984; Chaney, 1961; Ministerio de Obras Públicas, 1975; Moral y Berenguer; 1980; Tobiasson and Kollmeyer; 1991; Tsinker, 1995; Webber, 1973
	Natural risk	Flooding, ice, drainage	Adie, 1984; Chaney, 1961; Moral y Berenguer; 1980; Tobiasson and Kollmeyer; 1991
	Physical traits	Weather factors (temperature, precipitation, fog)	Tsinker, 1995
		Territorial traits (geology, geotechnics, hydraulics)	Adie, 1984; Tobiasson and Kollmeyer; 1991; Tsinker, 1985
	Historical navigation	Sea routes and anchorages	Aguiló, 2013; ASCE, 2012
Aesthetic	Harmony	Land/water relationships	Adie, 1984; Chaney, 1961; Ministerio de Obras Públicas, 1975
		Buildings/surroundings relationship	Adie, 1984; Chaney, 1961; Moral and Berenguer, 1980; ; Webber, 1973
		Landscaping	Adie, 1984; Blain, 1993; Chaney, 1961; Dionis, 1986
	Attractiveness	Form/silhouette	Apicella et al,, 1991; Chaney, 1961; Negro, 2008; Pearce, 1978
		Materials	Chaney, 1961; Dionis, 1986; Webber, 1973
	Image	Paths	Chaney, 1961; Martín and Yepes, 2017
		Land-marks	Dionis, 1986; Martín and Yepes
Context	Functional compatibility	Port/land uses	Adie, 1984; Martín, 1995; Tsinker, 1995
	Environmental compatibility	Water, air, soil	Adie, 1984; Blain, 1992; Martín, 1995; Martín and Yepes, 2017; Tobiasson and Kollmeyer; 1991; Tsinker, 1995
	IMCZ	Geomorphology adaptation, beach nourishment, natural resources	Nebot et al., 2017; Martín and Yepes, 2017; Ministerio de Obras Públicas, 1975
	Accessibility and circulation		Adie, 1984; Eckstut, 1986; Tobiasson and Kollmeyer; 1991; Tsinker, 1995
	Visual quality	Views from port	Adie, 1984; Martín and Yepes, 2017
		Views to port	Adie, 1984; Martín and Yepes, 2017; Webber, 1973
		Views to water	Adie, 1984; Martín and Yepes, 2017; Webber, 1973
	Historical and cultural resources		Adie, 1984
Social conditions	Services	Ancillary services	Adie, 1984; Martín, 1995; Tsinker, 1995
	Emotional links		Adie, 1984; Martín and Yepes, 2017
Sustainability	Social and environmental		ASCE, 2012; Biondi, 2014; Favro et al, 2008; Heron and Juju, 2012; Mill, 2008
Identity/character			Abraham, 2000; ASCE, 2012; Heron and Juju, 2012; Jansen, 2008; Martín and Yepes, 2017

Table 3. Factors and criteria related with landscape within waterfronts

Item	Media	Description	References
Site selection	Access		Bruttomesso, 1993; Fitzgerald, 1986; Wrenn et al., 1983
Aesthetic	Harmony	Land/water relationships	
		Buildings/surroundings relationship	Wrenn et al., 1983
		Landscaping	Wrenn et al., 1983
	Attractiveness	Form/silhouette	Wrenn et al., 1983
		Materials	Torre, 1989; Wrenn et al., 1983
	Image	Paths	Fitzgerald, 1986; Wrenn et al., 1983
		Land-marks	
Context	Functional compatibility	Port/land uses	Bruttomesso, 1993; Fisher et al., 2004; Fitzgerald, 1986; Malone, 1996; Meyer, 1999 ; Wrenn et al., 1983
	Environmental compatibility	Water, air, soil	Bruttomesso, 1993; Meyer, 1999; Wrenn et al., 1983
	IMCZ	Geomorphology adaptation, beach nourishment, natural resources	
	Accessibility and circulation		Bruttomesso, 1993; Meyer, 1999; Fisher et al., 2004; Fitzgerald, 1986; Wrenn et al., 1983
	Visual quality	Views from port	Fisher et al., 2004
		Views to port	Fisher et al., 2004
		Views to water	Fisher et al, 2004; Fitzgerald, 1986; Pinder and Smith, 1999; Wrenn et al., 1983
	Historical and cultural resources		Fisher et al., 2004; Hoyle and Pinder, 1992; Meyer, 1999; Pinder and Smith, 1999; Torre, 1989; Wrenn et al., 1983
Social conditions	Services	Ancillary services	Fisher et al, 2004; Torre, 1989
	Emotional links		Fisher et al, 2004 ; Wrenn et al., 1983
Sustainability	Social and environmental		Fisher et al, 2004
Identity/character			Fisher et al., 2004; Malone, 1996; Pinder, 2003; Pinder and Smith, 1999; Torre, 1989; Viola, 2005; Wrenn et al., 1983

2.2. Selection of participants

The first stage is to form a reliable panel of experts since this determines the feasibility of the Delphi method (Chan et al. 2001; Hallowell and Gambatese, 2010). The selection of the panel was focused on the Spanish context and it was driven by three main steps: pre-selection, contact, and validation.

In the first step, the reliability of the study results relies on the knowledge and experience of the participants, thus a major objective is to obtain a highly qualified and well-rounded group. Search groups must include all relevant perspectives of knowledge (Novakowski and Wellar, 2008; Okoli and Pawlowski, 2004), and to cover the different sensibilities and valuables that encompass the subject related to the study. We attempt to gather theoretical, practical knowledge, and experience. This results in three main profiles: consulting companies, and academic and managing areas. A pre-selection is conducted according to the following profiles:

a) Consulting companies that have drawn up several projects related to the construction, extension or management of marinas, primarily incorporating theoretical knowledge with practical applications or experience to theoretical application setting;
b) University professors who teach subjects related to marinas or university professors of engineering with experience in coastal landscape, sought among authors of papers, books or chapters of books, as well as presentations at conferences related to marinas or issues of coastal landscape. All of them are characterized above all by relate applications and theoretical knowledge.
c) Professionals involved in the management of marinas, selected from national recognized committees in marinas, and marinas management bodies, with a strong background and practical application.

Secondly, we sent invitations to more than 100 potential candidates via email. It included a description of the study, the main goals, the methodology applied, and the requirements needed. We also asked whether they knew other experts who would be interested in participating.

In the end, a total of 26 people agreed to participate. The criteria for selecting panellists included meeting at least four of the following requirements (Hallowell and Gambatese, 2010) in the field of marinas: (1) be a primary or secondary writer of at least three journal articles; (2) have previously been invited to present a conference; (3) have served as a member or chair of a nationally recognized committee; (4) have had at least five years of professional experience in the management; (5) have been a faculty member at an accredited institution of higher teaching; (6) have been a writer or editor of a book or book chapter on the related topic; (7) have attained an advanced degree in the field of civil engineering, construction management, or other related fields (minimum of a Bsc); and (8) have a

registered professional title. These requirements were confirmed through the implementation of an online self-survey and, in some cases, by telephone in order to clarify certain issues. In the end, a total of 24 people met the requirements, and almost all of them (23), fully completed the survey's stages: academics (26,1%), consulting companies (26,1%), and managers (47,8%). The expert panel is characterized in table 4.

Table 4. Characterization of expert panel

Requirement	Full expert panel (%)	Profile 1 Academic (%)	Profile 2 Consulting (%)	Profile 3 Management (%)
A	60.9	26.1	21.7	13.0
B	82.6	21.7	26.1	34.8
C	39.1	0.0	8.7	30.4
D	100.0	26.1	26.1	47.8
E	34.8	17.4	8.7	8.7
F	52.2	21.7	13.8	17.4
G	100.0	26.1	26.1	47.8
H	91.3	21.7	26.1	43.5

Note: A) primary or secondary writer of at least three journal articles; (B) invited to present a conference; (C) member or chair of a nationally recognized committee; (D) at least five years of professional experience in the management; (E) faculty member at an accredited institution of higher learning; (F) writer or editor of a book or book chapter on the related topic; (G) advanced degree in the field of civil engineering, construction management, or other related fields (minimum of a BS); and (H) professional registration

2.3. Questionnaire development

The questionnaire was conducted in order to answer the following two main questions: (1) which indicators conform and condition the landscape within the marinas and small craft harbours and; (2) what the level of significance of each item regarding the landscape is. Usually, the first-round of the Delphi technique uses an open format to elicit individual opinions about the particular issue that is being studied, such as an anonymous brainstorming session (Chu and Hwang, 2008; Schmidt, 1997). In the second round, experts are asked to rate the responses developed during round 1, including statistical information from each questionnaire item. During the third and subsequent rounds, the panel receives feedback about the previous rounds. Theoretically, the Delphi method can be carried out until consensus is reached, defining the consensus as the possible approximation between the different initial attitudes of the experts (Dalkey and Helmer, 1963; Gupta and Clarke, 1996). However, three iterations are often sufficient for the collection of the required information and to arrive at a consensus (Hsu and Sandford, 2007). Too many repeated rounds may lead to fatigue by respondents (Rowe and Wright, 1999; Walker and Selfe, 1996).

In this case, all rounds included a Liker-type scale to state the importance of the criteria driven. Round 1 is driven by a literature review gathering the elements that form the landscape within marinas (table 6). Also, it was used a structured questionnaire for the first-round allows it allows the panellists to immediately focus on the study issues (Murry and

Hammons, 1995). Nevertheless, the questionnaire included a related open question with the possibility to suggest additional criteria. In this way, participants are allowed to provide free responses. Also, the participants may feel that their contributions are pertinent to the issue, and are further implicated (Linstone and Turoff, 1975). Table 5 summarizes the participation in each of the rounds of the Delphi method.

Table 5. Number of participants in each round of the Delphi study

Sector	Round 1	Round 2	Round 3	Round 4
Academic	7	6	6	3
Consulting	6	6	6	3
Management	11	11	11	3
Total	*24*	*23*	*23*	*9*

The second and subsequent rounds included a bar-graph for each parameter showing the percentage of support per item as background information to make it comprehensible for the practitioner. Based on the methodology by Okoli and Pawlowski (2004), after the third interaction, the panellists were asked if they were willing to continue answering to reach more consensuses in some items, but not enough panellists answered or agreed. The online study ran from November 2017 until February 2018. Reminders were sent to the invited experts to complete the survey. Table 6 shows the list of contents and parameters finally identified for the evaluation of experts.

Table 6. Static results from rounds

Context	Environment	Item		Round 1				Round 2				Round 3			
			P(x≥3)	Md	SD	Q	%	Md	SD	Q	%	Md	SD	Q	%
Territorial	Physical	Maritime climate and littoral drift	95,8%	4,0	0,84	1,0	41,7	4,1	0,72	0,5	47,8	3,9	0,58	0,0	65,2
		Physical and territorial traits	100,0%	4,0	0,79	1,0	37,5	3,9	0,58	0,0	65,2	3,7	0,46	0,5	69,6
		Natural risk	79,2%	3,5	0,96	0,5	41,7	3,6	0,82	0,5	43,5	3,5	0,71	0,5	52,2
	Social	Communications	91,7%	3,9	0,97	1,0	33,3	3,7	1,12	1,0	34,8	3,7	0,96	1,0	56,5
		Socioeconomic impact	83,3%	3,7	1,11	1,0	33,3	3,5	1,06	1,0	52,2	3,6	0,88	0,5	56,5
		Historic navigation	83,3%	3,3	0,99	0,5	41,7	3,2	0,92	1,0	39,1	3,3	0,79	0,5	56,5
		Regulatory constrains	78,3%	3,3	1,31	0,5	30,4	3,5	0,83	0,5	47,8	3,5	0,77	0,5	43,5
Local	Physical	Accessibility	91,7%	3,9	0,83	0,5	54,2	3,8	0,70	0,5	47,8	4,0	0,62	0,0	60,9
		Compatibility with the urban fabric	100,0%	4,1	0,64	0,0	58,3	4,1	0,58	0,0	65,2	4,1	0,50	0,0	73,9
		Viewpoints from the surroundings	83,3%	3,8	1,07	1,0	33,3	4,0	0,86	1,0	39,1	4,1	1,08	1,0	52,2
		Environmental compatibility	87,5%	3,8	1,00	1,0	33,3	4,1	0,85	0,5	52,2	4,2	0,66	0,5	52,2
		Restoration of coastal dynamics and compensation for coastal occupation	100,0%	4,0	0,71	0,5	50,0	4,2	0,51	0,5	69,6	4,0	0,55	0,0	69,6
	Social	Compatibility of non-strictly port uses	87,5%	3,8	1,05	0,5	41,7	3,8	1,17	0,5	54,5	3,8	0,76	0,5	52,2
		Continuity of urban flows	100,0%	4,0	0,61	0,0	62,5	4,1	0,78	0,5	52,2	4,2	0,70	0,5	47,8
		Visual compatibility	95,8%	4,2	0,85	0,5	41,7	4,7	0,55	0,5	73,9	4,7	0,55	0,5	73,9
		Historical and cultural resources	87,5%	3,9	1,17	1,0	41,7	4,4	0,77	0,5	56,5	4,7	0,44	0,5	73,9
Inner	Physical	Distribution of internal circulation flows (vehicles and pedestrians)	91,7%	3,5	0,82	0,5	45,8	3,2	0,96	0,5	54,5	3,6	0,58	0,5	60,9
		Views from the port	87,5%	3,9	0,93	0,5	50,0	4,0	0,62	0,0	73,9	4,2	0,72	0,5	56,5
		Visibility of the water sheet	95,8%	4,1	0,86	1,0	37,5	4,3	0,75	0,5	47,8	4,4	0,77	0,5	52,2
		Environmental quality (air, flora, and fauna)	91,7%	3,9	0,91	1,0	41,7	4,2	0,78	0,5	43,5	4,6	0,71	0,5	69,6
	Social	Identity (own traits) and character (differential qualities)	95,8%	4,2	0,85	0,5	41,7	4,5	0,65	0,5	60,9	4,5	0,58	0,5	56,5
		Paths (main routes or lines of force)	87,5%	3,5	0,87	0,5	41,7	3,5	0,83	0,5	47,8	3,5	0,88	0,5	43,5
		Land-marks	100,0%	4,2	0,80	1,0	41,7	4,3	0,75	0,5	47,8	4,3	0,61	0,5	56,5

Port uses' distribution	91,7%	3,9	1,09	1,0	37,5	4,2	0,72	0,5	43,5	4,4	0,64	0,5	47,8
Size and scale	100,0%	4,2	0,62	0,5	58,3	4,2	0,48	0,0	73,9	4,3	0,53	0,5	65,2
Form and shape	87,5%	3,8	1,05	0,5	41,7	4,0	1,00	0,5	47,8	4,1	0,72	0,5	60,9
Materials	95,8%	4,0	0,84	1,0	41,7	4,0	0,81	0,5	47,8	4,1	0,83	0,5	65,2
Auxiliary elements (street lamps, wastebaskets, benches, signage, etc.)	83,3%	3,5	1,00	0,5	45,8	3,6	0,77	0,5	47,8	3,5	0,88	0,5	43,5
Landscaping	100,0%	3,8	0,78	0,5	45,8	3,9	0,74	0,5	43,5	3,8	0,76	0,5	52,2
Social and environmental sustainability	87,5%	3,8	1,05	1,0	33,3	3,7	0,91	0,5	34,8	3,7	0,67	0,5	47,8
Typology of boats*	95,7%					3,8	0,87	0,0	56,5	3,8	0,82	0,0	65,2

*Criteria suggested during the survey process and included

2.4. Data analysis

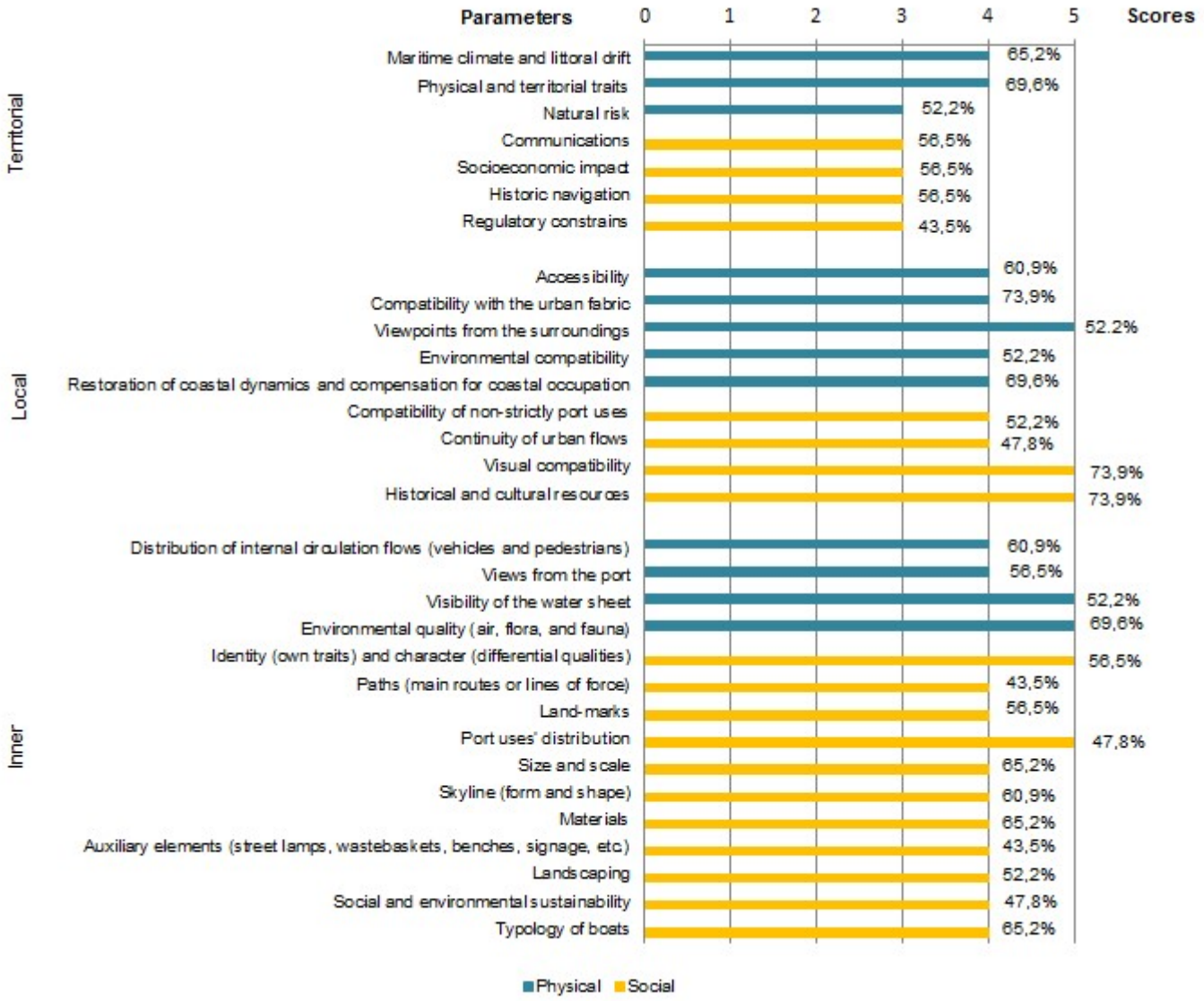
Decision rules were established to assemble and organize the judgments and insights provided by the Delphi survey subjects. The major statistics used in this method are measures of central tendency and level of dispersion (Hsu and Sandford, 2007; Murry and Hammons, 1995). Therefore, descriptive statistics of the ratings were obtained: rating median (Md), standard deviation (SD), and quartile deviation (Q) (Table 6).

The Delphi surveys were laid on la five-point Likert-type scale (from 1 to 5), rating the influence for the criteria within the marinas' landscape through the following options: negligible (1), low (2), moderate (3), remarkable (4), or high (5). The first-round was used to validate the submitted element. Based on the criterion by Chan et al. (2001) which relates to a minimum level of percentage by over a selected score (50% over 2 in a 3-level scale), an element is considered as valid if more than 75% of the experts rated it with a value equal to or greater than score 3 in this first-round (Chu and Hwang, 2008; Murray and Hammons, 1995). In the case of those parameters that were added by respondents after the first-round, they could be validated in the second round by the same procedure.

The successive rounds were used to seek the convergence of the criteria, but establishing a stop criterion. The two main statistical criteria that can be used as stopping rules in the Delphi method are (Schmidt, 1997; Chu and Hwang, 2008): 1) Strong consensus (all the questionnaire items are either accepted or rejected); and 2) decrease in variations from previous rounds. Generally, consensus on a topic is achieved when a certain percentage of a rating is exceeded. The usual value is by over 50% (e.g. Chan et al, 2001; Okoli and Pawlowski, 2004), although this value can be placed at a higher percentage (Hsu and Sandford, 2007). Consensus can also be measured by interquartile range (IQR) or quartile deviation (Q): values IQR ≤ 1 or $Q \leq 0.5$ reflect good consensus among the experts (Linstone and Turoff, 1975). The lack of progress between rounds can be measured by using the Kendall coefficient of concordance (Chan et al, 2001; Kendall and Gibbson, 1990; Okoli and Pawlowski, 2004; Schmidt, 1997) or Rating the Variant value (Chu and Hwang, 2008) as a measure of minimal or no further shifting of panel responses from round to round. Based on the principles stated above, the rules adopted for analysing the validity of the consensus reached in an item after the third round were: 1) rating by over 50%; 2) rating mean (Md) $\geq$ 3.5; and 3) $Q \leq 0.5$.

When the process was finished, there was a consensus and a rate for most of the parameters considered (Fig. 1). However, final grades were expressed by obtaining a weighted average, starting from the percentages obtained for each score. Finally, the values were normalized and ordered.

Figure 1. Rating histogram and percentages for the parameters of marina's landscape



3. RESULTS

On one hand, Table 7 summarizes the ratings given by experts. The most valued items were «Historical and cultural resources» and «Visual compatibility», which were included at the local stage, and «Environmental quality» and «Identity and character» at the inner stage. On the other hand, Table 6 show the level of consensus reached for the parameters considered.

Related to the consensus, all the parameters were validated since all of them reached a percentage of over 75% for the rating up to 3 in the first round considered. In the second round, only 54.8% of the items met all of the requirements for consensus and hence a third-round questionnaire was needed. The main defect was failing to reach the minimum 50% threshold. After this new round, 24 of the items (77.55%) were accepted by the compliance of all the conditions laid down and, therefore, the Delphi study could have ended. At this point, the major failure was not achieving the 50% threshold for all items, although all of them

exceed 40%. Due to the proximity the threshold required, there was an attempt to continue until there was a consensus on all of items but it was not possible since there were not enough panellists to answer. The items which did not achieve a total consensus were «Communications» (dispersion) and «Regulatory constraints» (insufficient threshold) at the territorial stage; «Viewpoints from the surroundings» (dispersion) and «Continuity of urban flows» (insufficient threshold) at the local stage; and «Port uses' distribution» and «Social and environmental sustainability» (both insufficient threshold) at the inner stage. As noted above, no consensus does not mean invalidity, but there was no total agreement between all experts in any of the conditions considered.

With respect to the participation, there was not a significant difference between dropouts and completers (95.8% overall of initial participants). All the experts (24) participated in the first round, but since the second one, the only did 23.

Table 7. Ranking of issues

Table 8.

Context	Environment	Item	Scores (Round 3) 1	2	3	4	5	Weighted average	Normalized Values	Ratings
Territorial	Physical	Maritime climate and littoral drift	0.0%	0.0%	21.7%	65.2%	13.0%	0.7826	0.0317	15
		Physical and territorial traits	0.0%	0.0%	30.4%	69.6%	0.0%	0.7391	0.0299	19
		Natural risk	0.0%	8.7%	52.2%	30.4%	8.7%	0.6783	0.0275	24
	Social	Communications	0.0%	4.3%	56.5%	8.7%	30.4%	0.7304	0.0296	20
		Socioeconomic impact	0.0%	4.3%	56.5%	17.4%	21.7%	0.7130	0.0289	21
		Historic navigation	0.0%	13.0%	56.5%	21.7%	8.7%	0.6522	0.0264	25
		Regulatory constrains	0.0%	8.7%	43.5%	39.1%	8.7%	0.6957	0.0282	23
Local	Physical	Accessibility	0.0%	0.0%	21.7%	60,9%	17.4%	0.7913	0.0321	13
		Compatibility with the urban fabric	0.0%	0.0%	8.7%	73.9%	17.4%	0.8174	0.0331	12
		Viewpoints from the surroundings	4.3%	0.0%	26.1%	17.4%	52.2%	0.8261	0.0335	10
		Environmental compatibility	0.0%	0.0%	13.0%	52.2%	34.8%	0.8435	0.0342	8
		Restoration of coastal dynamics and compensation for coastal occupation	0.0%	0.0%	17.4%	69.6%	13.0%	0.7913	0.0321	14
	Social	Compatibility of non-strictly port uses	0.0%	4.3%	26.1%	52.2%	17.4%	0.7652	0.0310	17
		Continuity of urban flows	0.0%	0.0%	17.4%	47.8%	34.8%	0.8348	0.0338	9
		Visual compatibility	0.0%	0.0%	4.3%	21.7%	73.9%	0.9391	0.0380	2
		Historical and cultural resources	0.0%	0.0%	0.0%	26.1%	73.9%	0.9478	0.0384	1
Inner	Physical	Distribution of internal circulation flows (vehicles and pedestrians)	0.0%	4.3%	34.8%	60.9%	0.0%	0.7130	0.0289	22
		Views from the port	0.0%	4.3%	4.3%	56.5%	34.8%	0.8435	0.0342	8
		Visibility of the water sheet	0.0%	4.3%	4.3%	39.1%	52.2%	0.8783	0.0356	5
		Environmental quality (air, flora, and fauna)	0.0%	0.0%	13.0%	17.4%	69.6%	0.9130	0.0370	3
	Social	Identity (own traits) and character (differential qualities)	0.0%	0.0%	4.3%	39.1%	56.5%	0.9043	00366	4
		Paths (main routes or lines of force)	4.3%	4.3%	39.1%	43.5%	8.7%	0.6957	0.0282	23
		Land-marks	0.0%	0.0%	8.7%	56.5%	34.8%	0.8522	0.0345	7
		Port uses' distribution	0.0%	0.0%	8.7%	43.5%	47.8%	0.8783	0.0356	5
		Size and scale	0.0%	0.0%	4.3%	65.2%	30.4%	0.8522	0.0345	6
		Skyline (form and shape)	0.0%	4.3%	8.7%	60.9%	26.1%	0.8174	0.0331	11
		Materials	4.3%	0.0%	4.3%	65.2%	26.1%	0.8174	0.0331	11
		Auxiliary elements (street lamps, wastebaskets, benches, signage, etc.)	4.3%	4.3%	39.1%	43.5%	8.7%	0.6957	0.0282	23
		Landscaping	0.0%	4.3%	26.1%	52.2%	17.4%	0.7652	0.0310	17

Social and environmental sustainability	0.0%	0.0%	39.1%	47.8%	13.0%	0.7478	0.0303	18
Typology of boats*	4.3%	0.0%	17.4%	65.2%	13.0%	0.7652	0.0310	16

*Criteria suggested during the survey process and included

4. DISCUSSION

The difficulty of dealing with landscape is grounded in its uncountability and that varies depending on the users and the activity (James and Elwin, 1989). This study defines the elements that integrate the landscape in the marina —also considering each level of approach (Figure 2), — and their rates through expert consensus. According to the experts surveyed in this study, all of the criteria exposed at each stage could be considered part of the landscape in the marinas, but pertaining to a different degree of importance. The most valued criteria were those related to the compatibility between the marina and its environment, as well as those that attempt to figure out the elements that embrace the historic and cultural resources. Also of concern were those which help to determine an individual identity and character. The remaining elements submitted could be considered as tools through which the previous features are achieved.

On the subject of the historic and cultural resources, culture can be defined as a brand of identity rooted in the past, maintained in the present and updated in the future by successive generations (Graham, 2002). Cultural landscape is a representation of combined works of nature and man over time (Brown et al., 2005; Sauer, 1925; UNESCO, 1972). Thus, cultural landscape reflects the social changes and attitude towards its surroundings, relating to both natural and social processes (Antrop, 2000; Birks et al., 1988; Jones and Daugstad, 1997; McNeely and Keeton, 1995; Russel, 1997). Considering all the above, ports can be addressed as a reflection of technical expertise and a sensibility in a precise time, as result of a particular culture (Aguiló, 1999; Diedrich, 2012; Meyer, 1999). The specific requirements of port activities accumulate distinctive features as a result of dealing with the needs of maritime transport. These are clearly distinguished from the rest of its local surroundings (Pinder, 2003; Webber, 1973). On the other hand, heritage is also a major element to consider within marinas' landscape, but it is related to the conservation and re-utilization of elements from the past. Nevertheless, taking into account that heritage requires a cultural validity sustained over an ample period of time, the main obstacles for a marina to overcome are: (1) to avoid mere craft-berthing, (2) the adoption of monotonous and anodyne solutions in relation to the immensity of the coast in which they are inserted, and (3) the lack of links to their environment (Aguiló, 2013; Bernard, 1999; Ollero, 1986).

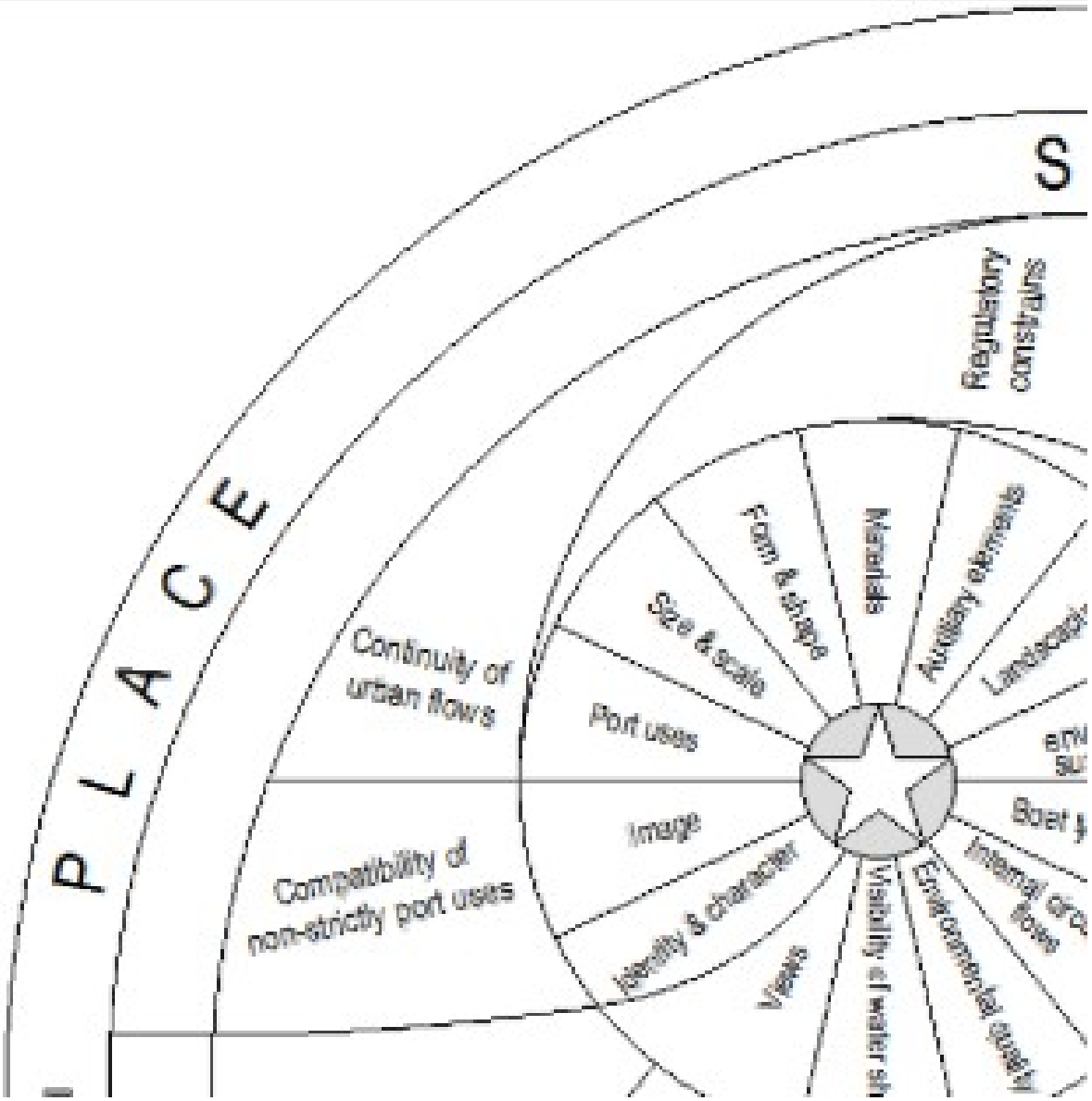
Regarding compatibility, the marina must be in concordance with its surroundings, both in a physical and environmental sense. All artificial elements are supported on a natural basis, gathering its understanding and its domestication through technical knowledge and how to address the solution (Aguiló, 1999; Martín and Yepes, 2017; Meyer, 1999). As noted by Norberg-Schulz (1979), any artificial work aims to improve or copy qualities of the natural place. In this sense, ports attempt to recreate the natural conditions of shelter, conforming through its infrastructures. It is evident that the lower the degree of artificiality is set out to be and the greater the adaptation to the existing natural configuration is, the lower the degree of affectation will be. The features of a space are defined by its surroundings (Lippard, 2005). And in order to achieve compatibility, it is necessary to implement the environment, not to

impose a new one (Chueca, 1968). The marina must not be understood as an odd concept within the coastline, but in a compatible and consistent manner, something that might be able to improve the coast zone through an empowerment of its features.

Moreover, environmental aspects play an increasingly important role in attracting clients and stakeholders. The environmental quality is one of the main elements in differentiating a site, favouring its identity (Ržepicka et al., 2017). Marina harbours activities that can generate pollution in their environment, so their management is essential when it comes to the maintenance of improving the quality for the environment (Madariaga et al., 2015). In this sense, air and water pollution are tow on the main impacts caused by ports (Lam and Notteboom, 2014).

In relation to identity and character, ports are a central element within the coastal frame, both for their uniqueness on the coastal zone and for the possibilities of their use. Ports are visual landmarks on the coastline, points of reference that draw attention. Reciprocally, they are also privileged elements to view their environment and that also provide access to the local landscape (Esteban, 2008; Garrido, 1986). On the one hand, identity is associated with the fulfilment of the requirements for natural harbours, and it is also marked by the existence of the characteristic elements that define all ports, this is: breakwaters, piers, bollards, etc. Management then must put emphasis on the elements that are easily identifiable in every feature. Those elements give the port its own identity (Pinder, 2003), and they are enhanced and imbricated with the collective sense. Although a space without visual claims fails to draw the attention of the observer, there must be a maximum understanding, that is: each element must be shown the way it is, with clear visual codes and understanding (Levebre, 1991; Moya, 2011), avoiding confusion and misunderstanding. On the other hand, character includes both the elements that distinguish landscape from each other, and the evaluation of a physical entity (Ramos et al., 2016; Swanwick, 2002). It is made up by the properties that configure their image. Some scholarships focus on the elements —both quantitative and qualitative— that make a unique and different environment (Abraham, 2000; ASCE, 2012; Heron and Juju, 2012; Jansen, 2008; Mill, 2008). But most people wish their surroundings to be familiar and recognizable. This implies that design must be strongly related to the local environment (Adie, 1984). As discussed by Braae and Diedrich (2012), the possibility of introducing local peculiarities and practices leads to the idea of *«genius loci»* expressed by Norberg-Schulz (1979), the regionalism, (Frampton, 1983), or place theory (Aguiló, 1999). Also, the set of intangible elements of every port constitutes its *"soft values"* (Girard, 2010; Hooydonk, 2007). To sum up, the acquisition of a character should be achieved as focal points of attraction in their environment through interaction and sharing experiences (Martín and Yepes, 2017; Pinder and Smith, 1999; Viola, 2005).

Figure 2. Components of landscape within marinas (based on Natural England, 2012)



Concerning the territorial stage, the experts believed that the physical constraints have an important role in landscape. These are the elements that conform to and influence the shoreline, both onshore and offshore. The social factors focus on the port as an infrastructure. Every infrastructure implies a transformation of natural processes through technology to satisfy a social demand (Aguiló, 2008; Rodiek, 1988). Moreover, the most important impacts of the marinas on the coast are generated through changes on the littoral drift. These cause coastal erosion and incidence on nearby beaches (Klein and Zviely, 2001; Manno et al, 2016). All the above together with the definition of integrated coastal management given by the UNEP (2008, 2.f), make it necessary to consider the integrated coastal zone management as a relevant element of the landscape at the territorial stage. Though, natural risk and traditional navigation are the least important criteria within this level. The low probability of risks makes it irrelevant in comparison with other elements; in other words, long term is one of uncertainty for the landscape. As to traditional or historical maritime routes and anchorages, the suitable coastal locations for those purposes that are left on the coast are scarce. Natural

siltation processes, the use of swimming areas, the existence of ports, and regulatory constraints are some of the causes of this disconnection. Related to those items with no total consensus, communications are also important because the land is the minimum degree of the landscape, which precedes its perception (Roger, 1997). An observer is needed to visualize these spaces, a place or point of view from which the gaze is oriented toward the environment. Landscape is not discovered until it has been seen. The perception of people turns territory into the concept of landscape (Swanwick, 2002). Thus, communications let the place to be seen, encouraging the landscape to be discovered. On the other hand, a legal framework cannot be considered as a criterion with the possibility of election, but rather an obligation. Any action carried out on the territory is regulated by a normative framework, which constrains the scope of the developments. This regulation also affects the landscape and the way the relationship between the marina and its environment develops (e.g. Adie, 1984; Dunham and Finn, 1974; Tobiasson and Kollmeyer, 1991; Webber, 1973; Wrenn et al., 1983).

Focusing on the local stage and from the expert's point of view, it is necessary to find a balance between external flows and port operability that allows penetration of the reality of the space. Conception and understanding of place is achieved through accumulation of coherent visions (Lynch, 1960). In a social sense, the significance of the marina is conditioned by the concept given by people (Martín and Yepes, 2017) which brings the gap between the conceived space and the lived spaced (Lefebvre, 1991; Lynch, 1960). Visual compatibility and historic and cultural resources are the main criteria in accomplishing these goals. As pointed out by Sierra et al. (2018), the social and environmental aspects are interwoven, and gathered together in the concept of sustainability with the economy. Dealing with items that did not reach consensus, the permeability between an artificial work and its surroundings determines the spatial configuration of the space and its understanding (Lippard, 2005; Norberg-Schulz, 1979). And the conception and understanding of place is achieved through accumulation of coherent visions (Lynch, 1960). The presence of different viewpoints from the surroundings favours the understanding of the space and the formation of the landscape. Moreover, it is necessary to enhance the links between the marina and its surroundings. The strategy of connecting ports and cities highlights the importance of relationships between ports and their environments (Nebot et al., 2017). The connection of the marina with the urban network is an innovative development strategy that allows the port to become a space where not only economic relations are improved bust also social and cultural ones (Girard, 2010).

Unlike the other stages, at the inner one, the landscape becomes more evident since the scale of work coincides with the people. And the closer to the scale to people, the greater the number of elements in the landscape. By considering the person as a reference scale, and also a point of view of the landscape, size and scale take on great importance, as well as forms and shapes of what is seen. Water is an important element of the landscape because it gives visual attractiveness, cultural associations, and added value (Martín and Yepes, 2017; Pinder and Smith, 1999; Whalley, 1988). The image of the marina —as a translation of the image of the

city (Cullen, 1971; Lynch, 1960)— driven by paths (piers, docks, pathways, etc.), districts (port uses), land-marks (lighthouse, harbour master building, etc.), is considered to be a powerful tool in constructing a characteristic and differential identity. Moreover, materials, auxiliary elements, landscaping, etc., are elements that help to achieve this differentiation. As noted by Dembsky (2013), the way to create a new image of an urbanised landscape, deals more than with a design challenge: e.g. the pathways should be visually pleasing (Pullar and Tidey, 2001); the differentiation of the port uses with respect to their surroundings is an addition that enhances the attractiveness of ports from ancient times (Keller, 1996); and landmark must be considered useful signs that convey the character of the marina (Martín and Yepes, 2017). Regarding the typologies of boats, the existence of diversity of vessels in the marinas may be an attraction, especially in the case of historic vessels or fishing and commercial boats (Adie, 1984), as well as luxurious cruise liners and the attractiveness of a sailing scene (Webber, 1973). However, as noted by Alemany (2004), the marinas must reconsider their purpose and conception, and be directed towards a social promotion that assure the access of local communities and promote a social diversity (Nebot et al., 2017). The marinas must become a space of opportunity, which can satisfy the local demands and ensure constant use by the citizens (Nebot et al, 2017; Viola, 2005). A marina must reflect the preferences and values of its users (Rodiek, 2010), that is: nautical users, visitors and local communities. In relation to the items in which there is no a total agreement, we must consider that the distribution of the port uses helps to make the transition between the urban uses and the port ones, improving the compatibility between fluxes (Grindlay and Martínez-Hornos, 2018). The planning of a port´s uses is a main tool to define the relationships between a marina and its environment (Alemany and Bruttomesso, 2011; Girard, 2010). Also, a coherent design of the auxiliary elements and its strong relationship with the local environment strengthen the links with the surroundings (Adie, 1984). Auxiliary elements help people to relate a pattern of familiarity (Corrough, 1991; Eckstut, 1986).

The ports are places of concurrence of competences (Zambonino, 1997), so the identification of the elements that constitute the landscape allows the delimitation of the responsibilities of each of the parties according to the division of powers (Council of Europe, 2000a). However, there are points that would allow for greater scope of research and its application to port management.

When dealing with applying these arguments to practice, it is difficult to rate de parameters because the perception of the landscape is different depending on the culture. As it is said above, the marina reflects a response to a social necessity in a specific site at precise moment in time, as result of a particular culture (Diedrich, 2012). Also, the reality is conditioned by but a collective interpretation, and this influence drives in a reciprocal way (Naveh, 1995). Culture plays a major role on perception of beauty because is a produce or the viewer's own cultural social and psychological constitution (Lothian, 1999; Williams, 2019). So, the vision of the landscape in a marina will be influenced by the constructive procedures, the materials available in the surroundings, the way of adaptation to the environment and the evocation that the concept "marina" evokes in each person. So, we can act on two lines of research. Firstly, it

is necessary to identify areas with morphological characteristics and similar cultures in order to establish how to evaluate the aforementioned elements of the landscape, and compare different areas in order to see if the differences affect to this concept. Secondly, to broaden the number of experts surveyed so that globality can mitigate or enhance local differences.

Also, it is true that this Delphi study has its limitations. The first limitation was the number of participants where a larger amount would have been preferable, but the requirements for the experts in order to obtain accurate results put a limit on the participants. Secondly, we would have preferred to have reached a full consensus on all parameters (e.g. «Port uses' distribution» has not reached a total consensus but it had a high score). Nevertheless, participants were exhausted, demotivated or too busy to continue. Reducing the numbers of parameters might have been a solution. Removing those parameters that had reached the threshold of acceptance would have been another option. Though, maintaining all items allowed for a more accurate assessment. Moreover, the items could be focused on a single stage but in this first approach, the broad concept of landscape made it easier to deal with all of the levels. Thirdly, the outcome criteria could have been improved through face-to-face contact. However, dealing with such an ambiguous and tough subject was preferable to continuing with the issues and not bothering the participants excessively. Further studies may focus on certain stages, reducing the items and being applied in larger samples.

5. CONCLUSIONS

This study is a starting point in the study of the landscape in the marinas. It determines the relevance of the parameters that make up the landscape. In addition, this study allows all managers involved in marinas at all stages to have a basis to consider in their decision-making processes that affect the landscape. We described the processes and the result of the research driven in order to determinate the elements that encompass the landscape and their rates within landscape in marinas. Processes of validation and assessment of the items were endorsed by a set of experts with different experience related to marinas, which included academics, consulting and management sectors. Identification of the items was driven by a review subsequently validated by experts. Despite the different areas of work by the participants, all of them were able to agree, to a certain extent on many issues in the different stages. There is a need to improve the processes and practices that can reveal insights that are not taken into account, since this can affect the image of the marina and how it should be dealt with.

It is clear that all marina managers try to find a distinctive identity with respect to other facilities, and to provide a recognizable image, within a scope of environmental compatibility. To accomplish this, there are many tools that should be considered. The most obvious are the visual tools, but the potential of the subjective component which presents the landscape should not be ignored. The Delphi method represents a suitable tool to surface and synthesize expert knowledge in a context of uncertainty that can inform parameters for decision-making and priority setting.

Those responsible for the marinas must be aware of the potential of considering the landscape in the management process. Awareness of this issue is a fundamental fact. The general identification of those items that generally intervene in the conformation of the landscape in marinas, must serve as basis for each manager to identify those ones that really affect its infrastructure. Not all of the identified items can be valid for all ports. Through the Delphi method, a total consensus is not reached for all the options, which does not mean they are not valid, but rather than there is no agreement for all the items considered. Depending on their characteristics, their location and their relationship with the environment, they can vary both in their identification and their evaluation. Marina managers should be able to identify which items of the landscape are valid for their particular context.

The incorporation of the assessment of the hierarchical levels considered as well as the real quantification of the importance of the elements of the landscape within the marinas, are ways for their practical application within the decision-making processes.

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