Paper published as follows: Polido, A., João, E. and Ramos, T. (2016), Exploring experts' views and perspectives on the enhancement of Strategic Environmental Assessment in European small islands. *Environmental Impact Assessment Review*, Volume 58, April 2016, Pages 25–33. DOI information: 10.1016/j.eiar.2016.02.004

Title: Exploring experts views and perspectives on the enhancement of Strategic Environmental Assessment in European small islands

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Highlights

Explored the views and perspectives of European small islands experts.

Showed the need for cooperation networks while developing SEA in these territories.

Encouraged the development of specific guidelines as opposed to more legal frameworks.

Highlighted SEA capability for the enhancement of small island sustainability.

Exploring experts views and perspectives on the enhancement of Strategic Environmental Assessment in European small islands

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Abstract

Small islands have the attention of the international community because they are territories with unique features, and a pressing need for the enhancement of sustainability. Strategic Environmental Assessment (SEA) has characteristics that may promote the development and improvement of sustainability in these territories: (i) changing the mind-set, and the decision-making and institutional paradigm, (ii) facilitating cooperation and coordination between different stakeholders, and (iii) providing a framework for good governance and community empowerment. The scientific literature suggests that there may be a need for context-specific SEA in these territories. However, SEA studies often do not incorporate local contextual information, including intuitive knowledge and sense of place. Therefore, there is a possible gap between what is found in the literature and what local communities think, including different stakeholders and experts. Hence, the main goal of this research was to gain an insight into the views and perspectives of small islands SEA experts about issues related to SEA in European small islands, including context-specific approaches, as well as the contribution of SEA for sustainability in these territories. To achieve the research aim, exploratory research using a questionnaire-based survey was designed, aimed at experts on SEA in European small islands. Findings showed regional cooperation networks may have a fundamental role when developing SEA-specific approaches in these territories. This is because SEA-specific approaches encourage a joint effort among islands within one region to improve SEA capacity-building, develop and share a baseline information system, and to share and exchange resources, overall. Also, guidelines are preferred among experts over more legal frameworks and regulations. Finally, the research showed that experts view SEA as a way to enhance sustainability in small islands. This study highlights the importance of integrating stakeholders, such as territorial experts, to learn and promote the use and improvement of environmental and sustainability tools such as SEA.

Keywords: Context; European small islands; expert survey; local knowledge; regional cooperation networks; strategic environmental assessment; sustainability.

1. Introduction

There is a pressing need for context-specific Strategic Environmental Assessment (SEA) (Fischer and Gazzola, 2006; Hilding-Rydevik and Bjarnadóttir, 2007; White and Noble, 2013), including in territories with unique characteristics, such as small islands. Small islands have characteristics of closed and bounded systems, being 'hotspots' for biological and cultural diversity (Kelman et al., 2015). Also, they have unique features due to their small size and geographic isolation, such as, a narrow and dependent economic base, limited resources, sensitive and fragile ecosystems, and small populations with possible skills pool constraints (Kerr, 2005; McIntyre, 2004; Ramjeawon and Beedassy, 2004).

SEA is already used in small islands, due to funding agencies or regional regulations (Payet, 2011), but there is evidence that small islands have "context-free" SEA regulations and procedures, as shown by Polido et al. (2016). Literature focusing on small islands indicates that it is essential to promote and enhance sustainability in these territories (Crossley and Sprague, 2014; van der Velde et al., 2007), where SEA may play a leading role (Hay, 2013; Payet, 2011). SEA may enhance sustainability in small islands due to its educational and mind-set changing capacity (McLauchlan and João, 2012), thereby promoting change in the decision-making and institutional paradigm (Douglas, 2006; Herbert, 1998; Yasarata et al., 2010), which is paramount for sustainability in these territories. Also, SEA facilitates cooperation and coordination between different stakeholders (Bina, 2007), providing a framework for good governance and community empowerment, as stressed for the development of small islands sustainability (Bunce, 2008; Herbert, 1998; Tran, 2006). However, it is yet unclear what sustainability means for these territories, due to its complexity and in some cases can even be paradoxical (Kerr, 2005; Zubair et al., 2011). Nonetheless, these territories may provide an opportunity to influence the debate on SEA and sustainability (Bass and Dalal-Clayton, 1995; Crossley and Sprague, 2014) as they have international community interest and attention, as highlighted by different initiatives for the case of Small Island Developing States (see UNCED, 1992; United Nations, 2014, 2005, 1994), and specifically in the case of European small islands (see CPMR, 1980; CPRM Islands Commision, 2015; ESIN, 2007).

There are still some challenges to overcome in the application of SEA in these territories for the enhancement of sustainability (Polido et al., 2014). However, SEA is in constant change, and new approaches are emerging, which may help overcome these challenges. Approaches requiring context-specific consideration, such as the integration of ecosystems services in SEA (Baker et al., 2013), resilience thinking linked with SEA (Slootweg and Jones, 2011), and, more recently, evolutionary resilience (Bond et al., 2015), are examples of leading initiatives in this domain. Concerns about ecosystems directly linked with ecosystem services in small islands have been discussed in academic and institutional literature (e.g., Aretano et al., 2013; Petrosillo et al., 2013; UNEP, 2014a), linking the importance of its integration within small islands SEA (Madhoo, 2010). Additionally, resilience is a key-issue addressed in small islands literature (Campbell, 2009; Hay, 2013), where building resilient territories and communities through the improvement of *"risk knowledge, governance, coastal resource and land use management, disaster prevention, emergency response and crisis recovery, while also strengthening socio-economic systems and livelihoods*" (Hay, 2013, p. 324) is paramount for these territories. These emerging approaches may provide a valuable SEA framework for sustainability management and assessment in these specific territories.

The development and improvement of SEA in small islands may also be enhanced through specific key-issues to be addressed (Payet, 2011). The review prepared by Polido et al. (2014), highlights the need to raise awareness about SEA in small islands, targeting different stakeholders, such as decision-makers, practitioners, scholars, and the general public. Polido et al. (2014) also identified the need for stakeholders to effectively engage with the SEA process, develop SEA capacity, and start early in the decision-making process. Additionally, Ramos et al. (2009) propose recommendations for environmental assessments (both SEA and Environmental Impact Assessment (EIA)) in the small islands context. They emphasize the role of stakeholders (namely local knowledge and cultural settings), and policy-makers in disseminating advice and guidance on impact assessment among all stakeholders. Furthermore, different authors identified that for small islands it is important to have a strong network within the regional context, overall, in linking the different small islands through knowledge, experiences and cultural specificities (Kelman et al., 2015; Pelling and Uitto, 2001).

Also, as generally identified for SEA, it is necessary to define and integrate sustainability and adopt its objectives in the specific context of the decision-making, while developing assessment criteria linked to sustainability goals (White and Noble, 2013). Particularly for small islands, there may be a need to adopt specific guidelines, involving key stakeholders, and have assessment methods that weight variables according to specific island criteria and assess the decision-making against appropriate themes or issues and indicators reflecting island realities (Kerr, 2005; Ramos et al., 2009), as the priority areas developed by United Nations (2014, 2005, 1994) for Small Island Developing States. To explore a small island's specific approach to SEA, it may be necessary to take these arguments into consideration, but as noted by Kelman (2015), scientific literature may not incorporate local contextual information, including intuitive knowledge and sense of place. This indicates a possible gap between the literature and what local communities, including local decision-makers, scholars and practitioners actually think. Different authors also noted gaps in the literature related to SEA-specific issues, where different stakeholders, namely local experts, were consulted to obtain their views and perspectives on cumulative effects (Bragagnolo et al., 2012), such as the role and value of SEA in Estonia (Peterson, 2004), if Scottish stakeholders would engage with SEA if they did not have to (João and McLauchlan, 2014), and SEA practice in Germany (Weiland, 2010).

Set against this background, the main goal of this research was to gain an insight into the views and perspectives of small island SEA experts on issues related to SEA in European small islands, including context-specific approaches, as well as the contribution of SEA to sustainability in these territories. To achieve the research aim exploratory research, using a questionnaire survey, was designed aimed at experts on SEA in European small islands. The paper starts by reviewing the key concepts associated with sustainability in small islands intertwined with SEA (Section 1), it then explains and justifies the research design, including how experts were chosen, and unfolds the questionnaire survey (Section 2). The relevant results from the empirical studies are presented in Section 3, then follows a discussion on the views and perspectives of experts, together with the contribution of SEA for sustainability in small islands (Section 4). The final section contains the conclusions, and suggests possible ways to forward the research and practice of SEA in small islands.

2. Methods

Due to the exploratory nature of this research a self-administered questionnaire survey was sent to SEA experts on European small islands. The questionnaire survey is commonly used to assess expert opinions on a particular question for which there are still no answers (Ghiglione and Matalon, 1993). This research strategy is also often used in SEA research for data collection (see Bragagnolo et al., 2012; Peterson, 2004; Rega and Baldizzone, 2015; Weiland, 2010).

The questionnaire was conducted between 2 April and 21 September 2015 and was sent by e-mail to 46 experts from European small islands SEA. These experts were identified through a non-probabilistic purposive sample which allows the selection of participants based on specific criteria (Saunders et al., 2009; Sharp et al., 2012). The criteria used to find SEA experts in European small islands were: (i) collaboration in SEA processes of European small islands, (ii) inclusion as European Union Commission SEA National Experts[1] within small islands member states and member-states with small islands, and (iii) referenced by another expert in SEA from European small islands. One of the main limitations associated with this type of survey is the low response rate due to the possibility that the survey cannot reach people without a computer (Bhattachejee, 2012). Due to the specificity of the criteria used to find experts, it was not expected the experts contacted did not have a computer with internet connection available, and three reminders were sent to the identified SEA experts in European small islands to overcome a possible low response rate limitation.

In order to allow comparable answers and to enhance the level of response, the questionnaire was developed using a majority of closed-ended questions (Rea and Parker, 1997). The questions were numbered and grouped by topic into five sections (see Table 1 for section rationale), as recommended by Lietz (2010). At least, one optional open-ended final question was added to each topic group to avoid a monotonous and manipulative questionnaire, allowing the respondents to express their opinion freely by adding information to what was previously stated (Ghiglione and Matalon, 1993). For the closed-ended questions, nominal or ordinal response scales were used with a predominance of a five response option Likert scale, including a "No opinion/Do not know" option (Giles, 2002). The questionnaire was developed to be easily understood, but at the same time, detailed and relevant for the research. Additionally, a pre-test was conducted, to assess its comprehensiveness, acceptability and to estimate the time for its completion, as recommended by Rea and Parker (1997). General questions were placed before specific ones and demographic questions were placed at the end, as suggested by Lietz (2010). The questionnaire clearly stated the answers should be based on the respondents' opinion grounded on their experience, expertise and knowledge. Anonymity of the respondents and confidentiality of the answers was assured.

Table 1 – Rationale used for the different questionnaire sections

Questionnaire section topic	Rationale	Based on
1. General issues concerning SEA in small islands	Wide-ranging questions about small islands and SEA development in these territories to establish the overall opinions of the respondents on the subject. Constitutes an introduction to the main topics of the survey.	Bass and Dalal-Clayton, 1995; Crossley and Sprague, 2014; Fernandes et al., 2015; Griffith and Oderson, 2011; Kelman et al., 2015; Kerr, 2005; Pelling and Uitto, 2001; Polido et al., 2014; van der Velde et al., 2007; Zubair et al., 2011.
2. Enhancement of small islands SEA	This set of questions introduced issues considered as priority areas for small islands by international community. The aim was to understand the degree of match between these priority areas	Bass and Dalal-Clayton, 1995; Hay, 2013; Kerr, 2005; Payet, 2011; Ramos et al., 2009; United Nations, 2005, 1994[2].

	with the views and perspectives of local experts while developing SEA systems and approaches for small islands.	
3. Ecosystem Services-inclusive SEA in small islands	Due to an increasing attention given to Ecosystem Services in SEA and small island literature, this emerging approach was introduced to understand what experts thought about the integration of ES into SEA for these territories.	Aretano et al., 2013; Baker et al., 2013; Geneletti, 2011; Hassan et al., 2005; Hauck et al., 2013; MA, 2003; Petrosillo et al., 2013; UNEP, 2014a.
4. Sustainability through SEA in small islands	These questions were chosen to enhance knowledge of how SEA may contribute to sustainability in these territories.	Bina, 2007; Bunce, 2008; Douglas, 2006; Hay, 2013; Herbert, 1998; Polido et al., 2014; Tran, 2006; Yasarata et al., 2010.
5. Personal Information	Demographic information	

The data retrieved from the questionnaires was analysed through (i) descriptive statistics, and (ii) for the open-ended questions a qualitative content analysis was performed, when possible, as suggested by Mayring (2000) and Ghiglione and Matalon (1993). Qualitative content analysis was aimed at systematizing what was reported in open-ended questions, trying to eliminate as far as possible, subjectivity and interpretation of the evaluator. An inductive and deductive (when possible) coding system was used (Elo and Kyngäs, 2008; Schilling, 2006), using an iterative approach, done case-by-case where no pre-categories of analysis were established, depending on the open-ended question and number of responses. The method allows replicable and valid inferences from texts (Krippendorff, 2004). The limitations of content analysis are usually associated with the documents analysed, which can pose problems of credibility, authenticity, representativeness and availability (Bryman, 2012). However, these are the views and perspectives of the experts surveyed which minimizes these limitations. A code was given to each respondent/questionnaire (E1 to E16) with no specific order. The code was used throughout the paper when necessary, and to ensure anonymity of the respondents. The full questionnaire is available as Supplementary Material.

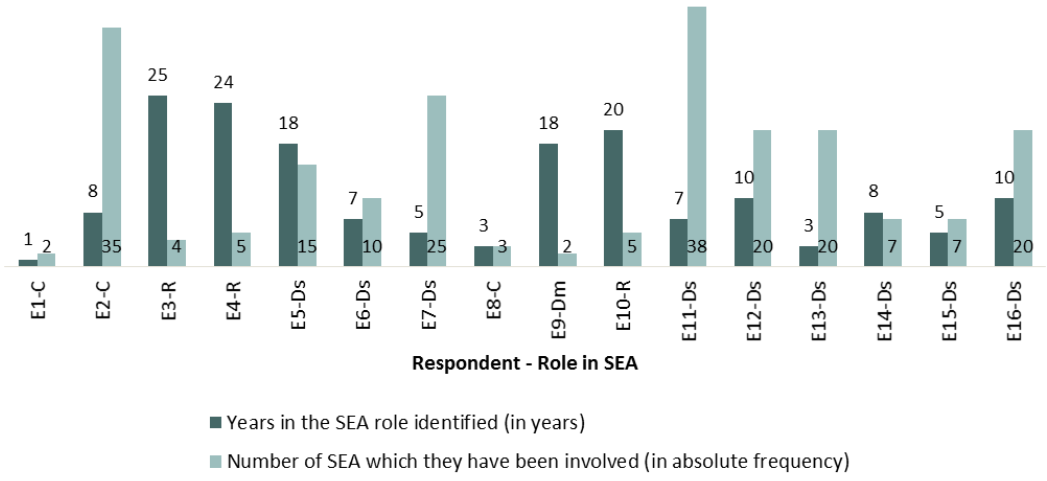
3. Results and findings

This section presents the results and findings from the questionnaire completed by European small islands SEA experts. A total of 16 questionnaires were filled out, representing a response rate of 35%, which is higher than a typical response rate for a self-administered mail survey (15 to 20%) (Bhattachejee, 2012). Furthermore, in similar studies, where expert opinions were surveyed through questionnaires, a small number of responses were also used: Bragagnolo et al. (2012) surveyed a total of 12 experts; and Peterson (2004) obtained 26 responses. The response number could be linked to the fact the questionnaire was delivered in English, while from the 46 experts contacted, 38 were from non-English speaking countries (six of the responses obtained were from English speaking countries and ten from non-English speaking countries). Nonetheless, the main goal of this study was to conduct exploratory research to understand what experts in European small islands SEA think about what constitute specificities for the SEA approach in small islands, and at the same time, to understand what they think about the possible contribution of SEA for sustainability of these territories, with no specific need of adopting a statistical model.

This section is structured according with the "Questionnaire section topic" (see Table 1) used to develop the analysis. However the characteristics of respondents instead of coming last, are placed first in the results section to establish the context of the responses. This section unfolds as follows: (i) characterisation of the respondents (demographic information); (ii) general issues for SEA in small islands; (iii) enhancement of small islands SEA; (iv) Ecosystem Services inclusive SEA in small islands; and (v) sustainability through SEA in small islands.

3.1. Characteristics of the respondents

The majority of European small islands SEA experts that responded to the questionnaire were practitioners: three from private companies; and nine from public authorities. However, one decision-maker and three academics also returned their questionnaires. Respondents are heterogeneous concerning their work experience varying between 1 and 25 years (an average of 10.8) with a range between 2 to 38 (an average of 13.6) SEA processes where they have been involved (Figure 1). There is a low geographic diversity: eight respondents were from Portugal; five from the United Kingdom; and the remaining three from Cyprus, Greece and Jersey. Jersey is the only small island within this set without the legal enforcement of the European SEA Directive (Directive 2001/42/CE). The other respondents belong to countries where the Directive is in force. Finally, eight respondents showed interest in receiving the results of the questionnaire, as well as to participate in future initiatives of the research project.



Note: E1, E2, …, E16, refers to the code given to respondents to ensure anonymity.

Figure 1 – Respondents characterization: (i) Role in SEA (C – Practitioner/Consultant in a private held company, R – Researcher/Academic, Ds – Practitioner/Decision-supporter in a public authority, Dm – Decision-maker), (ii) years in the SEA role identified (in years), and (iii) number of SEA they have been involved (in absolute frequency).

3.2. General issues for SEA in small islands

The first questions were general and tried to introduce the main points focused on in the survey, to establish a context of the survey for the respondents. In a five-point rating Likert scale from "strongly agree" to "strongly disagree", including the option "no opinion/do not know", the majority of respondents agreed or strongly agreed with the four statements associated with the uniqueness of small islands, underpinning the importance of (i) identifying sensitive and fragile ecosystems (16

out of 16), (ii) having trained staff on sustainability-related issues (15 out of 16), (iii) encouraging cooperation networks with other small islands (13 out of 16), and (iv) having a legal framework reflecting islands uniqueness (13 out of 16). However, some concern linked with more legal requirements was expressed by experts (E10, E11 and E15) in the open-ended questions (three in a total of four answers), due to the perceived difficulty of updating the legislation. Additionally, these experts stated a preference for guidelines to reflect island uniqueness, and referred to the need to have *"technical resources and mechanisms for spreading good practice and maintaining and developing skills among practitioners"*.

When asked about the needs faced by SEA in small islands, all respondents agreed or strongly agreed that SEA in small islands requires reflecting themes appropriate to small island realities. As for adopting scale guidelines, 13 out of 15[3] agreed or strongly agreed that it is necessary to take it into account in small islands SEA. Also, experts find that there is a need to have assessment methods that weight variables according to specific island criteria (13 out of 16 agreed or strongly agreed with this option), and to have a strong component of governance and institutional framework, reflecting island specificities (14 out of 15**Error! Bookmark not defined.** agreed or strongly agreed). Even though "*customized methods and institutional frameworks*" are a need for SEA in small islands, they "*should allow comparison with other territories*", as stated by respondents in the open-ended question (E7, E10 and E14).

As for small island SEA systems challenges compared with other territories, namely mainland, there is an overall perception of lack of resources (10 out of 16 respondents agreed or strongly agreed with the statement). Financial issues could be one of the main deficiencies, as pointed by one respondent (E11). For issues concerning "baseline data" and "skills and training", an ambiguity in the responses was noted. Seven (out of 16) respondents agreed or strongly agreed that there is a lack of baseline data in small islands, but a specific example was given by a respondent (E1) about the difficulties in gathering baseline data for a small island SEA, stating the data was only available for the mainland or for the whole country, undifferentiating the territories. Additionally, it was underscored by other respondents that the availability of baseline data may depend on different issues (E7, E10 and E14), namely, the wealth of the islands (E7), their history of development and environmental assessment (E7), proactivity (E10 and E14), and past studies developed by relevant local organisations (E10). Regarding "skills and training", only six respondents agreed or strongly agreed with the statement. However, in the open-ended questions, one respondent highlighted that "skills and training" depends on the SEA team (E10). Figure 2 presents the opinions of respondents while comparing challenges faced by small island SEA systems as oppose to other territories' SEA systems (question 1.3.).

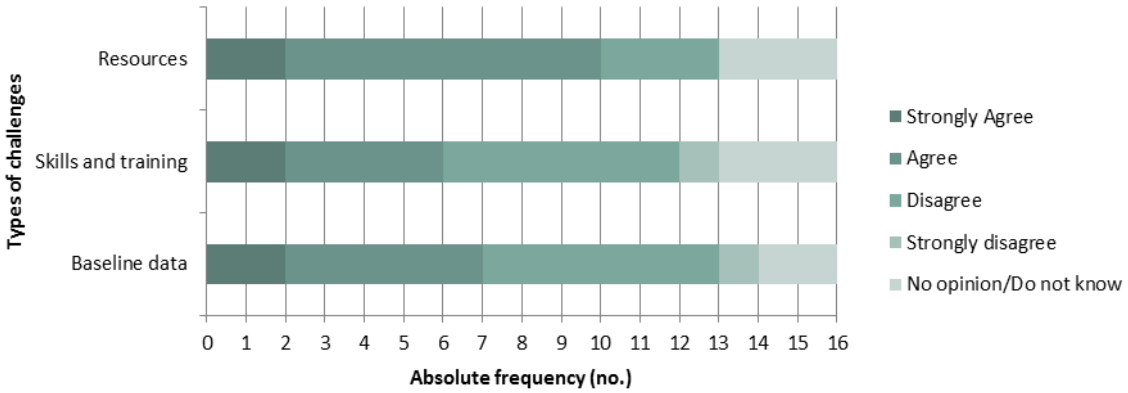


Figure 2 - Opinions of respondents while comparing challenges faced by small islands as oppose to other territories' SEA systems (in absolute frequency).

3.3. Enhancement of small islands SEA

In the second set of questions, experts were introduced to issues considered as priority areas for small islands, as defined by the United Nations (2005, 1994). From these priority areas, experts were asked which they considered to be of most importance for study in an SEA of small islands. All respondents selected "Biodiversity" as the main theme to be addressed in SEA for these territories, followed by "Climate Change", and "Sea-level rise", by 15 out of 16 selections. In Figure 3 can be found, in absolute frequency, how many experts choose each priority area to be included as a theme of assessment in the SEA of small islands. Other themes, beyond the pre-determined themes presented to the experts, were referred to by respondents in an open-ended question, namely, "air quality", "demographics", "economic sustainability", "ecosystem services", "seascape", "soil resources" and, "soil sealing". Also, issues of regional specific features, such as "biophysical conditions", "resilience", "life quality", "legal regional framework", "governance models", "landscape", and "mobility and accessibilities" were also highlighted by the experts.

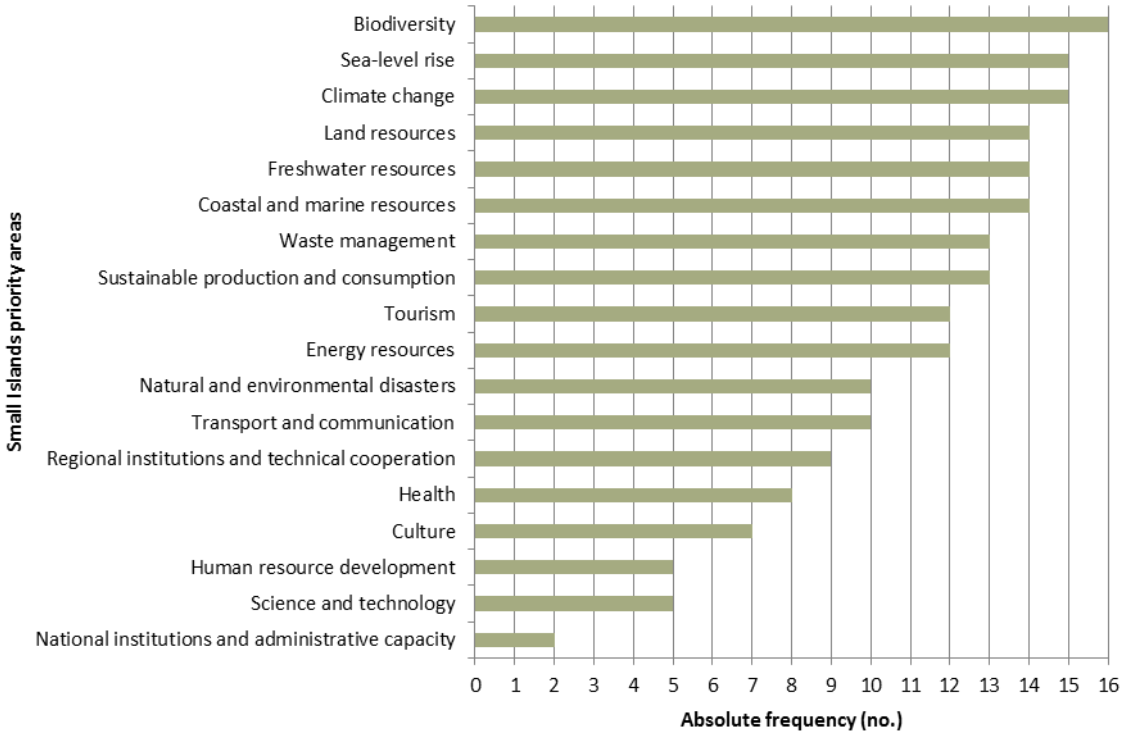


Figure 3 – Experts' opinions about which priority areas/themes should be included in the SEA of small islands (in absolute frequency).

As for issues important to take into account while developing an SEA system in small islands (respondents had to select all topics they found appropriate), 15 out of 16 respondents selected "Baseline information system". Furthermore, as stressed by one respondent, it may happen that a small island does not have sufficient baseline data. Following, 11 out of 16 respondents selected "Technical staff with specific training in small island environmental and sustainability issues, and 10 out of 16 experts selected "Specific indicators for the assessment of small islands". Generally, one respondent (E15) noted the probability that the themes may apply to all types of territories, but "*there needs to be specific understanding of the environment and culture you are working within to carry out high quality SEA".* In Figure 4 is presented, in absolute frequency, the full results concerning experts' opinion about the issues to take into account while developing SEA in small islands.

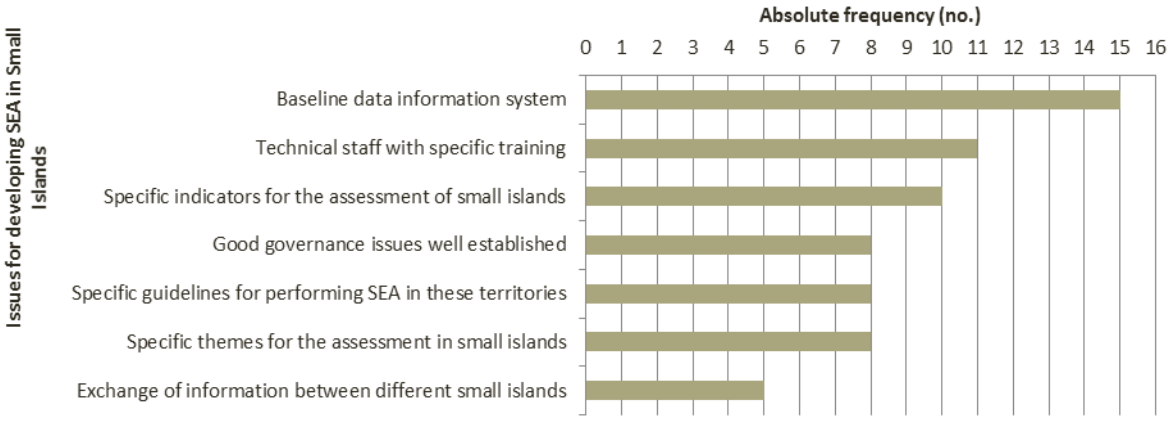


Figure 4 – Experts' opinion about paramount issues to take into account while developing SEA in small islands (in absolute frequency).

3.4. Ecosystem Service-inclusive SEA in small islands

This part of the questionnaire focused on Ecosystem Services (ES) approaches in order to understand if it could play an important role in the SEA of small islands, due to the increased amount of attention it has been given (Aretano et al., 2013; Petrosillo et al., 2013). Overall, 13 out of 16 respondents consider Ecosystem Service-related approaches important enough to be included in the SEA of small islands, since it could help enhance the SEA. Additionally, four experts (E8, E10, E11 and E15) considered ES important because it may help provide links between: (i) economy and ecosystems safeguard; (ii) human well-being and the assessment framework; and (iii) outputs from ecosystems for different industries, namely, food, pharmaceutical and construction. However, one respondent (E15) showed concern about how the concept is applied; monetizing the environment as a commodity.

Also, the experts perceive that enhancement of the SEA in small islands, through ES, could be done via the provision of themes for the assessment (10 out of 16 respondents), and to a lesser extent, through a change in the decision-making paradigm (8 out of 16). Only 6 out of 16 experts think that ES may serve as baseline information for the assessment, or help change SEA approaches, through a holistic process that integrates SEA into an ES framework. However, it needs to be noted that 5 respondents do not know any specific Ecosystem Service framework, which may bias these results. Figure 5 shows the full responses concerning the experts' perspectives on how Ecosystem Services frameworks could enhance SEA in small islands.

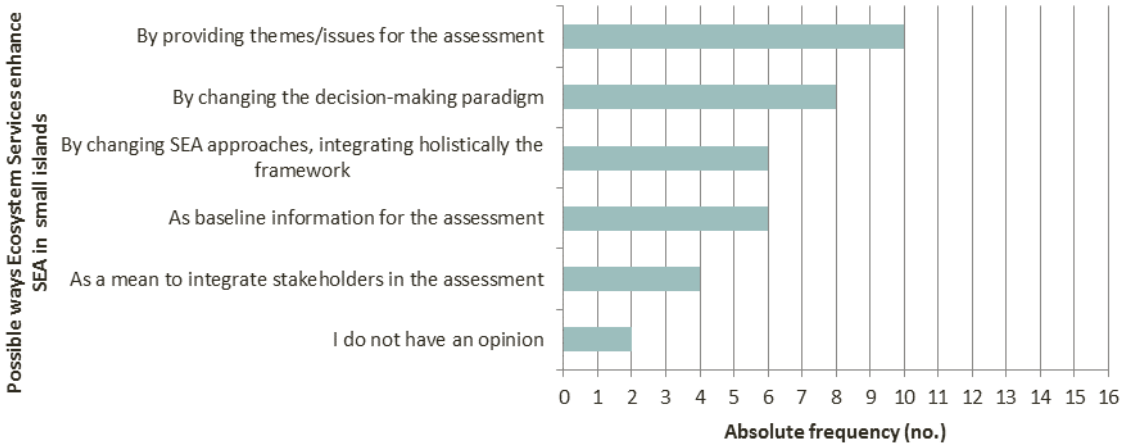


Figure 5 – Experts' perspectives on how Ecosystem Services frameworks could enhance SEA in small islands (in absolute frequency).

As for the question focusing on how ES frameworks could enhance SEA in small islands, only two respondents gave their opinions. One of the respondents focused again on how the concept is applied (E15) and the other stated that *"[t]he SEA process should be holistic already, through its very nature - it doesn't rely on bringing ecosystem services into play to achieve this."* (E7).

3.5. Sustainability through SEA in small islands

This group of questions sought to understand the experts' views about the role of SEA in helping improve the sustainability of small islands. Overall, the majority of respondents agreed or strongly agreed that SEA may help enhance sustainability in these territories by (i) helping change the decision-making paradigm (15 out of 16), (ii) providing a framework for good governance and community empowerment (13 out of 16), and (iii) helping build resilient territories and communities (12 out of 16).

Additionally, the open-ended question asking additional ways in which SEA intertwines with sustainability in these territories, a total of 11 usable answers were received. The answers were categorized in two types, how SEA already enhances sustainability (E1, E2, E3), and how this could be achieved (E4, E5, E7, E8, E9, E10, and E11). Table 2 presents the findings of these categories. Furthermore, one of the answers falls out of both categories, presenting an opinion about what SEA is to decision-makers and presenting some current problems associated with SEA. The respondent states that *"[t]he reality of SEA, not just in small islands, is generally that it is seen by decision makers as an add-on additional burden, rather than as a tool to assist in making better-informed decisions, particularly when (financial and technical) resources are limited. It is also currently very remote from the general public/electorate."* (E15).

Table 2 – Ways in which SEA may help enhance sustainability in small islands (answers to open-ended question 4.2.)

Types of answers (categories)	Main idea within respondents opinions
Perspectives on how SEA <u>already</u> enhances sustainability in small islands	SEA enhances sustainability through stakeholders' consultation. Furthermore, stakeholders' consultation within the SEA process yields a transparent assessment throughout the planning process and helps improve the PPP due to the comments collected. Also, SEA provides alert about the effects and consequences of a PPP which influences future decisions.
Perspectives on how SEA <u>may</u> enhance sustainability in small islands	SEA may further enhance sustainability in small islands by ensuring all pillars of sustainability are covered in the assessment and influence planning, including the involvement of local people and knowledge. Additionally, SEA may enhance the development of specific information for these territories, good baseline data and monitoring indicators, and a good network of key stakeholders. Integrating SEA with cost-benefit analysis and ensuring an effective SEA follow-up are also perceived as being paramount for the enhancement of sustainability through SEA, in small islands.

4. Exploring views and perspectives of European small islands SEA experts

Regional cooperation networks are encouraged by the majority of the experts surveyed. These results corroborate the ideas found in the literature (e.g., Bass and Dalal-Clayton, 1995), which suggested that development and use of regional cooperation networks may be important for small islands. This could indicate the need for a joint effort among islands within the same region to develop a regional SEA system, as recommended by Alshuwaikhat (2005), for developing countries. Contrasting with these findings is the low importance given by the experts' surveyed to the development of mechanisms for exchange of information, including technology, innovation and methods, which differs from Kelman et al. (2015), and Pelling and Uitto (2001). However, further results and findings support the idea that cooperation networks are paramount for these territories while establishing an SEA system. The regional cooperation and partnerships, according to different authors, may help promote and strengthen regional legal frameworks (Griffith and Oderson, 2011), develop and establish networks for human resources training on sustainability-related issues (Crossley and Sprague, 2014), and identify and characterize existing regional ecosystems (Fernandes et al., 2015).

While acknowledging that there are specificities that should be considered in a context-specific small islands SEA system, some experts showed a concern about having new or different SEA legal frameworks to better reflect island uniqueness. Even though establishing legal frameworks may help support and differentiate islands features, it does not mean it will be effectively implemented, as suggested by Griffith and Oderson (2011). This could be an added difficulty if there are already in place established regulations, as is the case for European Union small islands, due to the enforcement of the SEA Directive. The results indicate that experts prefer having resources, human and financial, for the development of good practices and skills among practitioners. This preference intertwines with the importance given to topics considered in the questionnaire, such as guidelines,

including scale guidelines, themes, assessment methods and indicators, which is consistent with what was previously suggested by Ramos et al. (2009) and Kerr (2005).

These findings link to the views and perspectives of experts which highlighted resource deficiencies when comparing SEA in small islands with the mainland (see section 3.2.). While one respondent stressed that the resource deficiencies are mainly financial, the literature focuses on both human and financial resources deficiencies (McIntyre, 2004). It could be argued that the lack of human resources might reflect a lack of skills and training, issue paired with small population size, and identified in the literature as one of the main constraints of these territories (Kerr, 2005). However, when compared with the mainland SEA systems, respondents largely disagreed with the statement. In addition, as highlighted by respondents, there is the possibility that "skills and training" depend on the SEA team. Though this could occur where the SEA system relies on consultants to develop the SEA process, as is the Portuguese case identified by Polido et al. (2016), if the SEA is mainly developed by in-house practitioners, as observed by McLauchlan and João (2012) for the Scottish case, probably these practitioners may perceive the need for "skills and training". Nonetheless, the majority of the respondents stated that to have trained staff on SEA and sustainability-related issues is important in small islands, as suggested by Bass and Dalal-Clayton (1995) and Ramos et al. (2009).

Additionally, respondents stated that while developing an SEA system it is important to have a baseline data information system, but, in contrast to mainland territories, the majority perceives there is sufficient small island baseline data. The literature argues that there is a dearth of baseline data in these territories when compared with mainland territories (Ramos et al., 2009), and one respondent stressed the difficulties of gathering baseline data for a small island SEA. Other respondents stated that the availability of baseline data may depend on: the financial resources of the territory, the proactivity of the overall human resources, and their background in development and environmental assessment. Different authors highlight the importance of having a baseline information system when developing SEA (Fischer, 2007; Therivel, 2004). These results suggest that in these territories there is a need for a systematized and centralized information structure, as evidenced by Trujillano et al. (2005) and Virtual Observatory of Sustainability for the Macaronesian Region (2005), which may use a regional cooperation network for its development, as discussed previously.

Regarding the uniqueness, fragility and sensitivity of the ecosystems of small islands, widely acknowledged in the literature (e.g., Aretano et al., 2013; Petrosillo et al., 2013), the responses of the experts surveyed reflected an overall concern with the subject. The experts go even further, stressing the need to have an Ecosystem Service (ES) inclusive SEA, through the ES provision of themes for the assessment. This contrasts with the recent trends in SEA, where a full integration of ES in SEA is considered (UNEP, 2014b). Furthermore, respondents perceived that an ES inclusive SEA may help change the decision-making paradigm, which is recurrently viewed in literature as one of the main features of SEA (Hauck et al., 2013).

It was assumed for the research that an European small island specific SEA approach demanded specific themes and indicators, as indicated by Kerr (2005) and Ramos et al. (2009). Building on Polido et al. (2014), experts had to considered the United Nations (2005, 1994) priority areas for small islands. The respondents selected "Biodiversity" followed by "Climate Change" and "Sea level-rise", which is in line with the recent concerns of international institutions, including the European

Union, that developed SEA guidance for climate change and biodiversity integration (see European Commission, 2013). Although small islands are considered biodiversity "hotspots" (Kelman et al., 2015), and are vulnerable to climate change and sea-level rise, previous research showed that biodiversity, as well as climate change and sea-level rise, are sparsely addressed in the scientific literature concerning small islands (Polido et al., 2014). Furthermore, Polido et al. (2016), while analysing SEA reports from the Azores (Portugal) and Orkney (Scotland), found that the assessment topic "biodiversity" does not stand out, while climate factors are consistently addressed. It is noted that "Tourism", which is the most addressed issue in scientific literature, according to Polido et al. (2014), scored 12 out of 16 selections. A possible explanation for this could be that the experts are being influenced by international institutional trends rather than any context-specific influences. Additionally, there is a possibility that different themes could have emerged if the priority areas developed and addressed by United Nations (2014) were included in the present research. Nonetheless, they should be taken into account in future research to understand how these may influence SEA in these territories.

Concerning the views and perspectives of small islands SEA experts on the contribution of SEA to sustainability in these territories, they further support the recommendations of Polido et al. (2014), who suggested that a change in the decision-making paradigm, good governance, and community empowerment and resilience, are the three key features that link SEA with sustainability in small islands. Additionally, the findings showed that experts think that by promoting decision-making transparency, and public awareness enhanced through consultation, SEA is already improving sustainability in small islands. For the further development of sustainability in these territories, the experts surveyed highlighted the need for the effective involvement of local people and the use of local knowledge, the development of networks with key stakeholders, and the establishment of a baseline and monitoring information system. These answers are in line with what is discussed in the scientific literature - SEA provides a platform for learning through its process (White and Noble, 2013), has an educational and mind-set changing capacity (McLauchlan and João, 2012) and facilitates cooperation and coordination between different stakeholders (Bina, 2007).

5. Conclusions

This paper set out to gain an insight into the views and perspectives of small island SEA experts about issues related with SEA in those territories, and at the same time to understand what they thought about the contribution of SEA for sustainability in small islands. These goals were achieved through the use of a questionnaire survey submitted to 16 experts. Respondents represented heterogeneous SEA experience, and the fact that there is a lack of geographical diversity could have implications for the results. But due to the exploratory nature of the research, their responses play a fundamental role in understanding the mind-set of small island experts and, at the same time, provide a background for future research on SEA in small island applications. Overall, the experts surveyed have similar opinions and perspectives to those presented in the scientific and institutional literature.

The research found that the development of regional networks for cooperation among small islands is encouraged by the experts surveyed. These cooperation networks may enhance legal and institutional frameworks that promote SEA specific features, while taking into account the constraints associated with these territories, by providing a joint effort to: (i) capacitate staff in

sustainability-related issues; (ii) develop a shared baseline information system, including the identification of ecosystems and their services; and (iii) share and exchange resources. However, from the open-ended question answers received, it needs to be taken into account that cooperation networks might be easier to put in place in small islands without already established SEA systems. In territories with existing SEA legal requirements it might be more difficult to change, as is the case of the European Union small islands, where guidelines may provide a better option.

It was also found that when building an SEA system in small islands, legal enforcement may be counterproductive, and thus the development of specific guidelines is encouraged. However, these guidelines need to take into account the environmental and cultural settings of the small islands, such as themes and indicators appropriate for the specific territory, and assessment methods which allow benchmarking between members of a regional cooperation network or with other territories. Additionally, when developing best practices, it is necessary to state specific responsibilities and interveners.

Furthermore, this research showed that by taking a SEA specific approach, there is potential for changing the decision-making paradigm, enhancing good governance and community empowerment and shaping resilient communities. However, results suggest that this needs to: (i) include an effective assessment and follow-up, instead of an added step in a planning procedure; (ii) ensure a network of key stakeholders, including local people; and (iii) engage the authorities in the development of an information system easily available for the baseline, assessment, and follow-up. Overall, it was found that the experts view SEA as enhancement of sustainability in small islands.

Drawing on this paper, further research might explore these data through focus groups or workshops with different stakeholders (experts and local communities), and at the same time, explore if the experts' years of experience and geographic location influences their answers. Also, it is necessary to compare, and learn from, those tools that are well established in these territories (e.g. environmental impact assessment). Overall, the findings of this study may have a role in enhancing future practice, helping institutions, practitioners and decision-makers understand that there is a need for island-specific approaches in these territories, and that there is a potential to integrate scientifically objective resources with other types of social and economic factors in the decision-making processes.

Acknowledgements

The authors would like to thank the SEA experts who took the time to participate in the survey, and for their much appreciated comments. Also, our thanks go to the two anonymous reviewers for their valuable comments. The authors acknowledge the financial support of *Fundação para a Ciência e Tecnologia* through the scholarship SFRH/BD/77091/2011 given to the first author. CENSE is financed through Strategic Project Pest-OE/AMB/UI4085/2013 from *Fundação para a Ciência e Tecnologia*, Portugal.

Endnotes

[1] The SEA Directive is a well-established system with 10 to 15 years of practice, which gives its practitioners 'know-how', as pointed out by the SEPA (2011) (see Directive 2001/42/EC).

[2] United Nations (2014) was not considered because this research started before the final document was available.

[3] In this sub-question there was one nonresponse. The nonresponse was treated according with the guidelines from Rea and Parker (1997).

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Strategic Environmental Assessment in Small Islands Questionnaire

Welcome!

First of all, I would like to thank you for agreeing to take part in this questionnaire survey. Your answer is essential in order to understand what experts think about specific features to be introduced in Strategic Environmental Assessments (SEAs) of territories with unique characteristics, as small islands.

This questionnaire survey is developed within the PhD research "*THESIS TITLE*" being developed in *(Research Center and University)*.

The questionnaire will take approximately 10 to 15 minutes to complete and asks for you to provide your opinion based on your experience, expertise and knowledge.

All the data collected will be kept in the strictest confidentiality and will only be used for the research purpose and presented in an aggregated form, never explicitly identifying the respondents.

Please do not forward this questionnaire, you were chosen specifically because you are an expert in this field. However, if there is someone you know which is an expert in this field, please refer them to me (first author email), so I may contact them directly.

If you have any questions, please do not hesitate to contact me at first author email

Thank you!

(First author name)

*Note: the questions marked with * are required*

1. General issues concerning SEA in Small islands

Keep in mind that the statements are not for SEA in general but for SEA in the specific case of small islands.

1.1. In general, for small islands, due to their uniqueness it is important to...*

Check only one box per row

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion/Do not know
1.1.1. encourage cooperation networks with other small islands.	☐	☐	☐	☐	☐
1.1.2. have a legal framework that reflects islands uniqueness.	☐	☐	☐	☐	☐
1.1.3. identify sensitive and fragile ecosystems.	☐	☐	☐	☐	☐
1.1.4. have trained staff on sustainability-related issues.	☐	☐	☐	☐	☐

1.1.5. Please provide comments on your answers (optional).

You may explain why you gave a certain answer and when appropriate you may give examples, for instance, if you know a cooperation network that works well or if a certain legal framework already reflects islands uniqueness.

<insert answer here>

1.2. SEA in small islands needs to...*

Check only one box per row

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion/Do not know
1.2.1. adopt scale guidelines.	☐	☐	☐	☐	☐
1.2.2. reflect themes/issues appropriate to their realities.	☐	☐	☐	☐	☐
1.2.3. have assessment methods that weight variables according to specific island criteria.	☐	☐	☐	☐	☐
1.2.4. have a strong component of governance and institutional framework, reflecting islands specificities.	☐	☐	☐	☐	☐

1.2.5. Please provide comments on your answers (optional).

You may explain why you gave a certain answer and when appropriate you may give examples, for instance, what is for you a strong governance and institutional framework and if it is already in use in the cases you know or if scale guidelines are already in use.

<insert answer here>

1.3. When compared with other territories, such as mainlands, SEA in small islands lack...*

Check only one box per row

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion/Do not know
1.3.1. baseline data.	☐	☐	☐	☐	☐
1.3.2. skills and training.	☐	☐	☐	☐	☐
1.3.3. resources.	☐	☐	☐	☐	☐

1.3.4. Please provide comments on your answers (optional).

You may explain why you gave a certain answer and when appropriate you may give examples.

<insert answer here>

2. Enhancement of small islands SEA

Please complete this part of the questionnaire considering that you answered "Strongly agree" or "Agree" in the previous set of questions.

2.1. Themes to be introduced in SEA of small islands*

Please select all themes/issues you consider to be of most importance to study in an SEA of small islands.

- ☐ 2.1.1. Climate change
- ☐ 2.1.2. Sea-level rise
- ☐ 2.1.3. Natural and environmental disasters
- ☐ 2.1.4. Waste management
- ☐ 2.1.5. Coastal and marine resources
- ☐ 2.1.6. Freshwater resources
- ☐ 2.1.7. Land resources
- ☐ 2.1.8. Energy resources
- ☐ 2.1.9. Tourism
- ☐ 2.1.10. Biodiversity
- ☐ 2.1.11. National institutions and administrative capacity
- ☐ 2.1.12. Regional institutions and technical cooperation
- ☐ 2.1.13. Transport and communication
- ☐ 2.1.14. Science and technology
- ☐ 2.1.15. Human resource development
- ☐ 2.1.16. Health
- ☐ 2.1.17. Culture
- ☐ 2.1.18. Sustainable production and consumption
- ☐ Other. Specify <insert answer here>

2.2. Define and rank which are the themes you consider paramount to be included in every type of SEA in small islands.*

These themes may or may not be the ones included in the previous question (2.1.).

<insert answer here>

2.3. Developing an SEA system in small islands…*

Please select all topics you consider to be of most importance to focus when developing an SEA system in small islands.

- ☐ 2.3.1. Technical staff with specific training in small islands environmental and sustainability issues
- ☐ 2.3.2. Good governance issues well established (e.g. integrate local languages, cultural patterns and values in the participation process, improve capacity building, interactive participation processes)
- ☐ 2.3.3. Exchange of information between different small islands (e.g. technology, innovation, methods)
- ☐ 2.3.4. Baseline data information system
- ☐ 2.3.5. Specific guidelines for performing SEA in these territories, including scale issues and assessment methods that weight variables according to islands specificities)
- ☐ 2.3.6. Specific themes for the assessment in small islands
- ☐ 2.3.7. Specific indicators for the assessment of small islands
- ☐ Other. Specify: <inser answer here>

2.3.8. Please provide additional comments for your answers (optional).

<insert answer here>

3. Ecosystem Services inclusive SEA in small islands

Ecosystem Services inclusive SEA has been discussed in the literature in the past few years and several publications have been considering how to integrate Ecosystems Services in SEA (e.g. UNEP (2014). "Integrating Ecosystem Services in Strategic Environmental Assessment: A guide for practitioners". A report of Proecoserv. Geneletti, D.).

3.1. Do you think it is important to integrate the concept of Ecosystem Services in SEA of small islands?*

Check only one box

☐ 3.1.1. Very Important	
☐ 3.1.2. Important	
☐ 3.1.3. Moderately Important	
☐ 3.1.4. Of Little Importance	
☐ 3.1.5. Unimportant	Go to section 4
☐ 3.1.6. I do not know the concept	

3.1.7. Please comment your answer (optional).

<insert answer here>

3.2. Which Ecosystems Services Frameworks do you know?

Check all that apply.

- ☐ 3.2.1. Millennium Ecosystem Assessment – MA
- ☐ 3.2.2. Common International Classification of Ecosystem Services – CICES
- ☐ 3.2.3. The Economics of Ecosystems and Biodiversity – TEEB
- ☐ 3.2.4. None
- ☐ Other. Specify: <insert answer here>

3.3. In what way Ecosystems Services frameworks could help enhance SEA in small islands?

Check all that apply.

- ☐ 3.3.1. By providing themes/issues for the assessment
- ☐ 3.3.2. As baseline information for the assessment
- ☐ 3.3.3. As a mean to integrate stakeholders in the assessment
- ☐ 3.3.4. By changing the decision-making paradigm
- ☐ 3.3.5. By changing SEA approaches, through an SEA process that integrates holistically the framework
- ☐ 3.3.6. I do not have an opinion

3.3.7 Please provide comments on your answers (optional).

<insert answer here>

4. Sustainability through SEA in small islands

4.1. SEA may help enhance sustainability in small islands by...*

Please indicate your opinion concerning the following statements.
Check only one box per row.

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion/Do not know
4.1.1. helping change the decision-making paradigm	☐	☐	☐	☐	☐
4.1.2. providing a framework for good governance and community empowerment	☐	☐	☐	☐	☐
4.1.3. helping build resilient territories and communities	☐	☐	☐	☐	☐

4.2. Are there other ways in which SEA may help enhance sustainability in these territories?

If you have knowledge about how SEA may help enhance sustainability in small islands, please give examples.

<insert answer here>

5. Personal Information

Please provide some information about yourself. This is necessary to understand the background of the respondents.

5.1. Age*

<your age>

5.2. Gender*

- ☐ Male
- ☐ Female

5.3. Location (country of activity).*

Please state the country where you are based.

<insert answer here>

5.4. How are you currently involved with SEA?*

- ☐ Practitioner/Consultant in a private held company
- ☐ Practitioner/Decision-supporter in a public authority
- ☐ Decision-maker
- ☐ Researcher/Academic
- ☐ Other. Specify: <insert answer here>

5.5. How many years do you work in the position above mentioned (in question 5.4)?*

<insert answer here>

5.6. How many SEA have you been involved in?*

Please provide an estimation if you do not remember the correct number

<insert answer here>

5.7. Please provide your name and email (optional).

Please provide this information if you are available for follow-up and/or to take part in future workshops and focus-groups related with this research. Furthermore, with your details we will be able to send you updates on the research.

<insert answer here>

5.8. Additional comments (optional).

If you have any additional comments, let us know.

<insert answer here>