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Research Report

Does Absence of Charismatic Species Impact the Ecotourism Potential of Central Mediterranean Islands?

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Abstract. Central Mediterranean Islands tend to be devoid of large terrestrial charismatic fauna which usually serve as target species for ecotourism. This has raised questions on the potential of ecotourism in such destinations. However it has been argued that absence of charismatic megafauna should not be considered as a limitation. Ecotours were organised on nine islands in the central Mediterranean region. Interviews and focus groups were held with participants of the ecotours and stakeholders. It has been argued that most charismatic species are marine, touting marine ecotourism as the ideal tourism product. Furthermore, rather than focusing on charismatic species, the ecotourism product on such islands should revolve around the various coastal environments and habitats and other smaller species including non-mammals, especially endemic ones thus facilitating a broader approach to conservation. Owing to the remarkable biodiversity of plant species, charismatic megaflora and plants have also been identified as important targets for ecotourism. Furthermore, due to the intense environmental pressure and limited size of protected areas the overlap with cultural, rural and adventure tourism has been suggested. In order for the ecotourism product to be more competitive archipelago tourism also referred to as island hopping is also recommended, a proposal which is supported by the presence of endemic and sub-endemic species. Results show that absence of charismatic species does not limit ecotourism development on such islands.

Keywords: Charismatic species, ecotourism, central Mediterranean, islands, conservation

Abbreviations

Marine Protected Areas = MPAs; NGOs = Non-Governmental Organisations; 3S = Sand, Sun and Sea

1 Introduction

Charismatic megafauna are arguably considered important to motivate ecotourists to visit protected areas (Skibins, Powell & Hallo, 2013). Such species tend to be terrestrial mammals and normally serve a flagship role engaging in both ecotourism and conservation campaigns (Albert, Luque & Courchamp, 2018; Lindsey, Alexander, Mills, Romañach & Woodroffe, 2007; Verissimo, Fraser, Groombridge, Bristol & MacMillan, 2009).

Mammal faunas on Mediterranean islands experienced almost complete extinction due to human colonisation (Blondel & Vigne, 1993; Schüle, 1993). Whereas humans have actively introduced new faunistic elements on Mediterranean islands (Gippoliti & Amori, 2006; Schembri, 2003) few endemic terrestrial mammals still survive in Mediterranean islands (Blondel & Vigne, 1993). One example is the shrew (*Crocidura sicula*) which is found on the islands of Sicily, Levanzo, Favignana, Marettimo, Ustica and Gozo (Sarà, 1998). Hence, terrestrial charismatic megafauna, including large mammals, are lacking from central Mediterranean islands. This has raised questions on the potential of protected areas situated on Mediterranean islands to attract ecotourists. Furthermore, owing to the lack of charismatic megafauna, the possibility of applying the concept of flagship species (used in other regions for biodiversity conservation) on islands has been described as problematic (Verissimo et al., 2009).

However, research has criticised the mammal-centric approach and focus on charismatic megafauna (Entwistle, 2000). Questions have also been raised on

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whether charismatic species are indeed a key attractor of ecotourists to protected areas and if factors other than simply charismatic species might explain attractiveness of protected areas (Hausmann et al., 2017).

Weaver (2005) distinguished between the different nature-based products, a major element of ecotourism together with interpretation and sustainability. He argues that the nature-based product ranges along a continuum. On one end, one finds a holistic approach featuring an entire ecosystem such as a forest or coral reef. This approach normally also includes landscapes (Buckley, 2013; Di Minin, Fraser, Slotow & MacMillan, 2013) and scenery (Lindsey et al., 2007) as targets for tourists. Owing to the fact that few places are devoid of human influence, the holistic approach normally also incorporates the cultural component to the nature-based focus (Weaver, 2005). On the other end one finds an elemental approach focusing on specific non-captive flora and fauna charismatic species (Weaver, 2005). Similarly, Lee, Lawton and Weaver (2013) argued that ecotourism attractions tend to focus on rather pristine ecosystems and wild endemic charismatic megafauna that inhabit such ecosystems. In these cases, ecotourism attractions go beyond charismatic species and emphasis is not only made on mammals or fauna.

Similarly, others have remarked that tourists' interest for visiting protected areas goes beyond charismatic terrestrial megafauna. In some cases, depending on the site, geological features (such as volcanoes, and cliffs) are also included as attractions (Lee et al., 2013). Even if having received less recognition than charismatic megafauna (Hall, James & Baird, 2011), a smaller number of destinations also feature charismatic megaflora (such as trees) (Lee et al., 2013; Weaver, 2005). Yet in some regions where such mega attractions are lacking, other smaller attractions have been identified to serve as flagship species confirming that nature-based attraction parameters should not necessarily focus on megafauna (Lee et al., 2013). These include less charismatic species (Buckley, 2013; Di Minin et al., 2013) including birds (Glowinski, 2008; Lindsey et al., 2007; Verissimo et al., 2009), rarer less-easily observed and/or less high-profile mammal species (Lindsey et al., 2007) such as bats (Weaver & Lawton, 2007). Reptiles and amphibians known collectively as herpetofauna have also been considered to play an important role as a pull factor for the ecotourism (Wollenberg et al., 2011). Furthermore, butterflies and dragonflies have also been regarded as charismatic microfauna which can play a flagship role in ecotourism and attract visitors to protected areas (Cannings, 2001; Harvey Lemelin, 2007). Plants such as orchids have also been identified as targets for tourists and potential flagships for conservation (Lindsey et al., 2007; Pickering & Ballantyne, 2013).

Whereas charismatic species and the impact on ecotourism have been given due importance in various regions across the world (Weaver, 2005), little attention has been given to this aspect when it comes to peripheral areas including islands such as those in the central Mediterranean region. Studies on such biodiversity in this region have mostly been conducted from the natural sciences perspective. Meanwhile, peripheral areas such as islands have been regarded as areas ideal for ecotourism purposes due to high species richness which include charismatic megafauna. These persist due to the remoteness of the areas sparing species and habits from negative environmental impacts from anthropogenic sources (Garrod & Wilson, 2004). In fact whereas emphasis in research has been made on terrestrial mammals, marine charismatic species such as whales, sharks, dolphins, turtles and seals have also been identified (Albert et al., 2018; Garrod & Wilson, 2004; Giglio, Luiz & Schiavetti, 2015).

Similarly to the arguments raised above for terrestrial environments, in the case of peripheral areas such as tourism dependent islands and archipelagos lacking charismatic fauna, other species such as seabirds have been considered to have considerable potential to act as flagship for tourism purposes. This is especially the case if such species are endemic to the islands, have a low population (or are threatened with extinction) and have unique features of special biological or behavioural interests (Verissimo et al., 2009). Ecotourism targets in such areas also include fish, marine microfauna, sea caves and other geological formations such as stacks and arches, corals and flora along with cultural attractions (Garrod & Wilson, 2004). This research aims to study if the lack of terrestrial charismatic mega-fauna impacts ecotourism in the area of study and if alternative approaches can be used to develop and practise ecotourism in the central Mediterranean region. This is of particular interest as policy makers are eyeing alternative forms of tourism to mitigate the negative impacts of mass tourism and ensure that destinations remain competitive.

2 Material and Methods

2.1 Area of Study

The area of study consists of nine islands (three archipelagos and an island) all situated in the central Mediterranean Region. These are the Pelagian Islands (comprising Lampedusa, Linosa and the islet of Lampione), the Aegadian Islands (comprising Favignana, Levanzo and Marettimo) and the Maltese Islands (comprising Malta, Gozo and Comino) along with the island of Pantelleria. The islands have extensive terrestrial and marine areas which are protected through one or more designation including regional, national and EU legislation (Protected Planet, 2018). Notwithstanding the

relatively small land area, the resulting limited variety of habitats, the long history of colonisation and in the case of the Maltese islands the high population density, the islands host a high variety of biota including several endemic species and are thus considered as biodiversity hotspots (Vogiatzakis, Mannion & Pungetti, 2008).

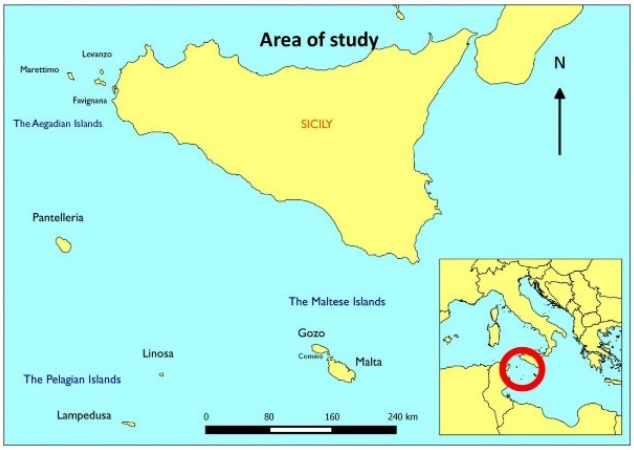

Figure 1: Central Mediterranean islands representing the area of study. Source: QGIS, 2016. Designed by Andrea Pace.

2.2 Methods

The case study approach was used in terms of research design as it provides flexibility as a multiple methodology (Jennings, 2001; Yin, 2014). The multiple case study approach was implemented whereby the same research methods were applied to the different islands under study (Yin, 2014). Research was conducted between May 2013 and July 2016 and over 240 people participated in the study. Four study visits (one on each archipelago/island) were organised to observe and familiarise oneself with the area of study.

Eventually, four ecotours were organised (one on each archipelago/island). These involved the organisation of a specific itinerary for 66 ecotourists who voluntarily accepted to participate in the trips, at their own expense. 43 ecotourists participated in one ecotour, 23 ecotourists participated in two ecotours whereas 5 ecotourists participated in three of the ecotours organised generating a total of 94 ecotourism experiences. The programme of the ecotour involved established ecotourism excursions in protected areas. Interviews and focus groups were conducted with participants of ecotours including those who participated in more than one ecotour and those who revisited the ecodestinations on their own initiative following the ecotour organised as part of the research. A non-probability sampling technique was used whereby individuals who presented themselves to the ecotours were asked to participate.

In addition, 174 in-depth and semi-structured interviews were also held with stakeholders across the entire area of study in order to obtain their views on various aspects related to ecotourism. As per Okech (2011) and Orams (1999a), ecotourism stakeholders interviewed included locals, resource users (including operators, guides, tourists), government and official agencies, non-governmental organisations (NGOs) and academics (see Table 1). Two sub-types of strategic informant sampling technique were used to recruit interviewees: expert sampling and snowball sampling. Interviews were held face to face and owing to the characteristics of islands being small-entangled communities, notes were taken instead of recording to ensure tangible information is acquired and that an adequate pool of stakeholders accept to participate. A checklist of items discussed during interviews and focus groups can be found in Annex Annex 1. Data obtained through interviews and focus groups was analysed manually through coding, sorting and looking for dominant themes.

3 Results

When asked about activities and features that are most important during a trip abroad, ecotourists interviewed referred to experiencing nature, visiting uncrowded places and increasing knowledge on wildlife. Watching wildlife including plants and animals was the least ecotourism related aspect referred to by ecotourists interviewed. The main reasons which motivated respondents to participate in the ecotours included to visit a new ecodestination (ecotourists remarked that they had not visited the central Mediterranean island in question), the fact that the tour was predominantly nature based, a competitive price of the package, the positive experience garnered from the previous ecotours and to support conservation initiatives. The desire to watch charismatic fauna also did not feature among the most popular expectations of those participating in the ecotours. In fact, the learning experience, immersing in nature and visiting a new interesting ecodestination were the most popular expectations among respondents participating in the four ecotours.

Ecoguides interviewed in the area of study expressed concern on the absence of terrestrial large charismatic species save for some introduced mammals such as red deer (*Cervus elaphus*), mouflons (*Ovis orientalis musimon*) and wild boars (*Sus scrofa scrofa*) on Marettimo. They said that this might leave an impact on the satisfaction of ecotourists. When interviewed, ecotourists visiting the Maltese Islands outlined that they observed little terrestrial fauna save for the fresh water crab (*Potamon fluviatile lanfrancoi*). However, they did not express disappointment. The observation of species which are considered as charismatic such as the fresh water crab and birds in Malta, loggerhead turtles (*Carretta*

Table 1: Distribution of stakeholders with whom interviews were held in the area of study.

Eco-destination	Count/ Percentage	Stakeholders					
		Affected locals	**Resource users**	**Academics**	**Government, agencies, politicians**	**NGOs**	**Total interviews**
Aegadian Islands	Count	10	19	2	3	4	38
	Percentage	26.30%	50%	5.30%	7.90%	10.50%	100%
Pelagian Islands	Count	2	12	3	1	5	23
	Percentage	8.70%	52.20%	13%	4.30%	21.70%	100%
Pantelleria	Count	3	12	5	8	3	31
	Percentage	9.70%	38.70%	16.10%	25.80%	9.70%	100%
Maltese Islands	Count	4	22	9	28	16	79
	Percentage	5.06%	27.80%	11.39%	35.44%	20.30%	100%
General	Count	0	1	0	1	1	3
	Percentage	0%	33.30%	0%	33.30%	33.30%	100%
Total	Count	19	66	19	41	29	174
	Percentage	10.90%	37.90%	10.90%	23.60%	16.70%	100%

caretta) and birds on Lampedusa and deer and mouflons on Marettimo did leave a positive impact on the satisfaction of ecotourists.

On the other hand, disappointment expressed by ecotourists did not refer to lack of wildlife sightings but to other factors. The predominant reasons expressed by those who felt that that the ecotour did not fulfil their expectations was related to the desire to immerse more in nature especially in Malta where the island has become very urbanised, long waiting times due for transport services and the constant need to use transport services especially on relatively bigger islands such as Pantelleria and Malta. This was followed by the desire for more marine ecotourism activities such as snorkelling, which at times were impeded by the presence of jellyfish. It was argued that too much emphasis was made on botanical aspects and that more attention needs to be placed on the marine environment and related activities. Other reasons included that aspects of the tour such as accommodation did not reflect ecotourism principles and that some islands such as Malta were too geared for mass tourism.

The majority of those who participated in the ecotours organised as part of the research had already participated in other ecotours either as part of the research or on their own initiative. The majority said that their expectations, as identified prior to the ecotour, had been fulfilled. Following the ecotour, the absolute majority of respondents said that they were willing to visit another ecodestination for a holiday including a central Mediterranean island. Furthermore, ecotourists said that they would recommend the ecodestination they had visited to their friends for their next holiday. Ecotourists also expressed willingness to participate in future ecotours or revisit the ecodestination. The high rate of satisfaction can also be confirmed by the fact that out of the 66 ecotourists who participated in the ecotour, 28 ecotourists participated in more than one ecotour and others revisited the ecodestinations on their own convincing other friends to join them.

Even if absence of wildlife sightings were not considered as a limiting factor by ecotourists, charismatic species such as bottlenose dolphins (*Tursiops truncatus*) and turtles are used as target species to promote excursions especially on the Pelagian Islands. Specific excursions which include diving are organised around the islet of Lampione to observe juvenile grey sharks (*Carcharhinus griseus*). Such excursions are often a success and ecotourists do encounter marine megafauna due to the abundance of marine life. Specific excursions to islets such as Filfla are also organised to observe avifauna which are rare or have a limited distribution such as the Mediterranean storm petrel (*Hydrobates pelagicus*) along with other marine targets such as dolphins. Shearwater boat trips are also organised along cliffs to observe Scopoli's Shearwater (*Calonectris diomedea*) 'rafting' on the water before returning to their nests.

Excursions organised normally incorporate not only target species but also visiting related venues or related interpretation centres. For example in the case of Marettimo where the endangered monk seal (*Monachus monachus*) has been spotted after a long period of time a particular approach is adopted whereby the monk seal observation centre and spots usually frequented by such species including coastal caves are visited. Meanwhile, sightings are very rare and have been limited to scientific studies. In the case of the Pelagian Islands, visits are made to the rescue centres, nesting sites and trips are

also organised in an attempt to watch turtles in the wild.

Operators emphasised that excursions offered to ecotourists do not have the sole aim to observe marine species but also seek to raise awareness on the need to protect such species. In fact, one should note that failure to observe charismatic species did not leave a complete negative impact on ecotourists visiting the Pelagian Islands. Such ecotourists did not manage to see turtles in the wild and only had the chance to visit turtle nests on beaches being monitored by NGOs and observe injured turtles in rescue centres on Lampedusa and Linosa. Meanwhile, ecotourists still contributed financially towards related conservation projects.

Conservation was considered by ecotourists as an important element of ecotourism and one which influences them when choosing a destination to visit. Furthermore, it was also considered an important element of the ecotourism experience by ecotourists. Ecotourists also requested operators and NGOs involved more information on how their participation in the ecotour would support conservation initiatives including those related to flagship species such as turtles. The importance of conservation for ecotourists can be further confirmed by the dissatisfaction expressed by participants of ecotours visiting a store selling natural sponges, a traditional trade on the island of Lampedusa. Concerns have been raised by managers of Marine Protected Areas (MPAs) since ecotourism activity targeting charismatic species on Lampedusa were disregarding ethical considerations due to close encounters with such species possibly leaving an impact on their behaviour.

Various approaches were proposed by stakeholders to overcome the challenge of absence of terrestrial charismatic species (see Table 2). The first was to consider smaller, including non-mammal species such as invertebrates and flora as charismatic species which are of interest to ecotourists. In this regard emphasis was made on endemic species, species with a limited geographical distribution and species which are considered to be rare/threatened or appealing. Species reflecting one or more of these characteristics and outlined by stakeholders included the fresh water crab, the painted frog (*Discoglossus pictus*), the Mediterranean killifish (*Aphanius fasciatus*), the hedgehog (*Erinaceus algirus*), the weasel (*Mustela nivalis*), the Sandarac Gum tree (*Tetraclinis articulata*), the Maltese rock centaury (*Cheirolophus crassifolius*), orchids and birds such as the blue rock thrush (*Monticola solitarius*). NGOs, academics and ecotourism operators pointed out that entomology and herpetology excursions focusing on insects and reptiles respectively could be organised on the islands. Owing to the rich diversity of flowering plants in a confined area excursions focusing on flower gazing, ethnobotany and nature photography could be organised as an alternative. Other suggestions included to capitalise on natural aspects offered by the islands such as the scenery and the various volcanic phenomena found on the island of Linosa and more so on Pantelleria. Other lines of thought included to make less emphasis on the terrestrial environment and rather than just focus on botanical aspects put more emphasis on marine and coastal environment. Others reiterated this point on the proviso that islands had to capitalise more on the water surrounding them and the relatively bigger marine protected areas in comparison to terrestrial areas. In addition, academics explained that marine life was so rich that one could also observe a variety of species including charismatic/appealing ones in shallow water. Another approach was to develop ecotourism products that incorporate related niches that overlap with ecotourism including adventure tourism, agri/rural tourism, pescatourism, volunteering and cultural tourism. This would not only overcome the limitation of limited/absence of charismatic terrestrial fauna but also enhance the ecotourism experience per se. In another proposed approach, stakeholders including academics recommended archipelago tourism also known as island hopping to maximise the ecotourism experience and experience the different nature related opportunities provided by different islands. Such services are already being offered in the area of study. This was of particular interest due to the relation that exists between islands through the presence of sub-endemic species (species unique to a number of islands) in the area of study, case in point reptile and snails. One example is the lacertid lizard (*Podarcis filfolensis*) endemic to the Maltese and Pelagian archipelago (found on Linosa and Lampione) (Scalera et al., 2004).

Table 2: Approaches proposed for the ecotourism experience in the central Mediterranean region.

How to overcome lack of terrestrial mega-fauna
• Target smaller non-mammal species • Put more emphasis on flowering plants due to their rich biodiveristy • Capitalise on the geologic and volcanic phenomena • Give more importance to coastal and marine environments • Include overlapping niches including volunteering, adventure, cultural, agritourism/rural tourism, pescatourism • Introduce archipelago tourism/island hopping and focus on endemicity and sub-endemic species

Stakeholders outlined that activities targeting different species could be held throughout different months of the month. Whereas this was not a problem as climate on these islands was fair allowing outdoor activities to be held throughout most days of the year, one had to be organised and in some cases also plan activities according to the particular season. Furthermore, the ideal timing to target specific species had to be taken into consideration to increase likeliness of observing the target species.

Stakeholders added that owing to the relatively small size of the islands this also allowed ecotourists to visit various habitats in various protected areas and move swiftly in between terrestrial and marine sites reducing travelling time and increasing time available to immerse in nature and observe target species.

Stakeholders interviewed raised alarm on the presence of alien species and the possible impact these may have on endemic and other species which are considered as charismatic species. In addition they also expressed concern on transboundary issues in marine environments such as marine traffic in the area of study, presence of marine plastic litter, aquaculture and oil drilling that may all leave an impact on marine biodiversity including charismatic species.

4 Discussion

Irrespective of the rich biodiversity found on islands in the area of study, large terrestrial charismatic species, especially large mammals which are normally considered as top targets for ecotourism, are absent. The introduced deer, wild goats and wild boar on Marettimo are an exception. As a result, conversely to what normally happens elsewhere, ecotourism targets in the region include smaller, less charismatic species such as the fresh water crab which are at times difficult to observe either due to their behaviour, limited distribution or limited numbers.

One finds more diversity and abundance of charismatic species in coastal and marine environments. Only 3 of the 20 most charismatic species identified by Albert et al. (2018) are found in the area of study and these are all marine species (sharks, whales and dolphins). More environmental awareness and measures to reverse negative environmental impacts have also started to bear fruit. This can be confirmed by the return of the loggerhead turtle to nest on Maltese beaches in 2012, 2016 and 2018 (Anonymous, 2018, June 25) following a long absence (Deidun & Schembri, 2005). The monk seal has also been sighted on Marettimo (Donati, 2015). As a result, there is a natural drive favouring the development of marine ecotourism, ecotourism that takes place in coastal and marine environment.

The presence of charismatic species in marine environment surrounding central Mediterranean islands has been well documented in literature. The loggerhead turtle and the bottlenose dolphin are regularly found around Maltese waters (Mifsud et al., 2017). Pantelleria serves as a nursery for the loggerhead sea turtle and the white shark (*Carcharodon carcharias*). One also finds cetaceans such as the fin whale (*Balaenoptera physalus*) and the striped dolphin (*Stenella coeruleoalba*) apart from several species of rays (Margottini, 2011). In the case of the Aegadian Islands, various marine charismatic species have been identified including the monk seal, Bluefin tuna (*Thunnus thynnus thynnus*), loggerhead sea turtles, storm petrels, dolphins (*Stenella coeruleoalba* and *Tursiops truncates*), mantas, sharks (*Lamna nasus* and *Prionace glauca*) and sperm whales (*Physeter macrocephalus*) (Donati, 2016), several of which are rare on protected (Donati, 2015). The Pelagian Archipealgo is closely associated with loggerhead sea turtle nesting sites which include the Spiagga dei Conigli on Lampedusa with an area of 6000 m^2 and the Spiagga Pozzolana di Ponente on Linosa with an area of 1100 m^2 (Piovano et al., 2006).

With respect to the approach to identify smaller less charismatic species possibly non-mammals including invertebrates as ecotourism targets one should note that emphasis has been made on the need to create new ecotourism opportunities through under-appreciated, less charismatic biodiversity in protected areas (Di Minin et al., 2013). This is supported by the fact that less charismatic biodiversity has been valued by tourists as an integral aspect of nature-based experiences (Hausmann, Slotow, Fraser & Di Minin, 2016). Furthermore, this is crucial because protected areas which lack charismatics species may fail to attract ecotourists. As a result they generate less income for management purposes of the area (Goodwin & Leader-Williams, 2000; Kiss, 2004). The shifting of attention from large charismatic species to smaller species and their branding as charismatic species is also beneficial from a management and conservation perspective. This is because the narrow interest in charismatic species can lead to the underappreciation of other biodiversity (Di Minin et al., 2013; Kerley, Geach & Vial, 2003) pushing down the conservation ladder other small species leading to their poor conservation (Weaver, 2008). Thus, the absence of large mammals implies that conservation will not focus on a single species but will also have a broader perspective featuring also smaller species.

In the case of Mediterranean islands, too much importance given to large mammals can be a threat to the biodiversity in the region (Gippoliti & Amori, 2006). A classic example is the introduction of species considered to be charismatic (such as deer on Marettimo) has left tremendous negative impacts on trees and plants (Gi-

anguzzi, Scuderi & Pasta, 2006) which also contribute to the ecotourism potential of such islands. The situation has been aggravated by some conservation measures such as stopping hunting on such species (Gippoliti & Amori, 2004).

One should keep in mind that various specialised ecotourism excursions to observe specific species including microfauna have also been reported in literature (Harvey Lemelin, 2007; Wollenberg et al., 2011). Furthermore, studies have shown that tourists with a high zoological interest are willing to pay higher prices for specialised biodiversity high-quality tours (Wollenberg et al., 2011) thus sustaining conservation initiatives of such species too. This is thus an opportunity which is being overlooked and underestimated. For instance, the Maltese archipelago hosts 10 micro-bat species (Baron, 2007) which have not garnered attention for ecotourism purposes. This could possibly be due to a failure to engage knowledgeable ecoguides who can offer interpretation in the field. This also explained the emphasis made of botanical trips which led to some ecotourists expressing some disappointment on the lack of attention given to marine environments even if these have interesting attractions such as maërl beds and rare coral reefs (Margottini, 2011). In this regard, one should note that interpretation is a fundamental element of ecotourism (Weaver & Lawton, 2007). Meanwhile, whereas in the islands under Italian jurisdiction the possibility of ecoguides specialising in nature-based excursions exist, no such provisions are allowed under Maltese Law. As a result, operators need to engage not only an official tourist guide holding a license by the national authority but also an expert in the field making operations unfeasible.

In the case of the Maltese Islands national species have been designated on the basis of a number of criteria including that species are charismatic and serve as a symbol to raise environment awareness thus serving as flagship species. These include the blue rock thrush as the national bird, the Mediterranean Killifish as the national fish, the Maltese freshwater crab as the national invertebrate, the Maltese rock-centaury as the national plant and the Sandarac Gum tree as the national tree (DOI, 2018). This implies that even if charismatic megafauna are lacking, the possibility of applying the concept of flagship species in the area of study is still possible.

The identification of endemic species including smaller non-mammals as charismatic species also reflects findings of other research in the field. It has been found that endemism, which is relatively high on islands and archipelagos, can play a vital role to influence visitors to contribute financially for conservation purposes and for ecotourism purposes (Verissimo et al., 2009).

The emphasis made on flora as a way to overcome the limited presence of large terrestrial charismatic fauna comes as no surprise. In fact, the Mediterranean Region is considered to be unique due to richness in species and the high rate of endemicity found in vascular plants (Gippoliti & Amori, 2006). In the Maltese Islands, over 2000 species of terrestrial plants have been recorded to date (Schembri, 2003). Furthermore, the archipelago also supports a number of strictly endemic species (including 23 plant species) and other species (including some 20 species) which are sub-endemic to the Maltese and circum-Sicilian islands (Lanfranco et al., 2013). In addition, one finds charismatic plant species which tend to garner attention including the 12 species of orchids, some being rare whilst others being endemic (Cutajar et al., 2017). In the case of the Aegadian Islands Marettimo hosts no less than 500 plant species (Gianguzzi et al., 2006) and some nine endemic plant species can also be found in the archipelago (Pasta & La Mantia, 2013). Flora on the Pelagian islands is considered of exceptional interest and includes 21 strictly endemic plants (Pasta, La Mantia & Rühl, 2012; Pasta & La Mantia, 2013). Pantelleria is characterized by abundant plant species richness (approximately 600 species), with the presence of six endemic plant species (Gianguzzi, 1999; Gianguzzi, Cusimano, Cuttanaro & Romano, 2013; Pasta & La Mantia, 2013).

The approach of seeking other ecotourism targets beyond large terrestrial charismatic species is also beneficial to overcome seasonality experienced in the area of study especially on smaller islands. Butler (1994) distinguished between natural and institutionalised seasonality. In the case of natural seasonality, which is influenced by climate, this can be easily overcome in the area of study, as the climate of the islands makes such seasonality less pronounced allowing several outdoor activities to be held throughout the entire year. Furthermore, the peak of certain activities such as bird watching and flower gazing do not fall in the traditional tourism season while the season of the ecotourism activity such as dolphin watching extends well beyond the tourism season. In the case of institutionalised seasonality which originates due to lifestyle such as work and education commitments one should keep in mind that ecotourism tends to attract older tourists, whose holidays are not tied by work or school holidays (Garrod & Wilson, 2004). This implies that diversification of ecotourism opportunities is crucial to ensure that such islands can also target this segment of tourists off-season and mitigate seasonality.

On several islands in the area of study Sand, Sun and Sea (3S) tourism and coastal-based tourism are the predominant form of tourism. This has also led to a scenario whereby extensive parts of the coast have

been either developed or face anthropogenic disturbance (Deidun, 2010). Sandy beaches in particular are highly sought after and thus such habitats experience tremendous human pressure (Deidun, Azzopardi, Saliba & Schembri, 2003). The diversification of ecotourism targets and the resulting possibility to practise such form of tourism beyond coastal areas is thus an opportunity to provide other tourism opportunities and ease the pressure from sandy beaches and coastal environments.

One should note that most participants of the ecotours had already participated in other ecotours and visited other protected areas including those in destinations synonymous with the "big 5". This might explain why ecotourists did not underline the absence of large charismatic species as a major limitation or leaving a negative impact on their satisfaction. This is because research has shown that tourists who already had previous experience in visiting protected areas are more likely to appreciate and support initiatives that promote a broader biodiversity experience which goes beyond charismatic species only (Giglio et al., 2015; Hausmann et al., 2016). Meanwhile one should not limit marketing to experienced ecotourists. Hausmann et al. (2016) argue that while experienced tourists tend to be the target group of tourists in protected areas lacking charismatic species, less experienced tourists had preferences which were not restricted to such species. Thus, they could still be attracted to such sites by focusing on biodiversity related activities related to less charismatic species and landscapes, accessibility of protected areas, the opportunity to avoid crowds and the overlap with adventure and cultural aspects.

Alien species are considered as a threat to habitats and their biota and can cause significant changes not only in marine environments (Wallentinus & Nyberg, 2007) but also in freshwater ecosystems. The spread of alien species can also leave an impact on charismatic species. A classic example is the impact left following the release and extensive spread of the red swamp crayfish (*Procambarus clarkii*) in Maltese watercourses leaving an impact on the indigenous Fresh water crab (Deidun et al., 2018) which is considered as a charismatic species.

Lack of wildlife sightings do not necessarily influence the satisfaction of overall ecotourism experience (Orams, 1999b). There have been times where target species were not observed during the excursion, but ecotourists were still enticed by the species and related conservation projects to the extent that they also contributed financially to support the protection of the species (Deemer, 2014). Meanwhile there have also been times where lack of wildlife sightings did contribute to cause dissatisfaction among ecotourists (Lawton, 2012; Muloin, 1998). Thus limiting ecotourism experiences on target species is risky since no matter how large the abundance of species is, observing target species during excursions is not always successful. This is in fact also emphasised by operators ahead of excursions (EcoMarine Malta, 2018). Hence, the approach of revolving ecotourism experiences around the broader aspect of biodiversity that goes beyond solely targeting charismatic species is also advantageous from this perspective.

Whereas according to Garrod and Wilson (2004) the strict competition in the ecotourism market makes it challenging to attract repeat visitors, a number of ecotourists participating in the ecotours revisited the ecodestinations convincing other friends to join them. This together with other results such as the high level of satisfaction of ecotourists, willingness to participate in similar ecotours on other Mediterranean islands and willingness to recommend the destination to friends confirms the potential of ecotourism in the region irrespective of the absence of large charismatic species.

Various concerns have been raised by stakeholders on the negative impact on charismatic species including those in marine environment due to anthropic impacts. Such concerns concord with research conducted in the Pelagian Islands confirming that the increased and intense traffic of boats during the summer period (especially between May and October) leads to accidental collisions (Prazzi, Nicolini, Piovano & Giacoma, 2010). This also causes disturbance to the bottlenose dolphin which in return causes their displacement from coastal areas (La Manna, Manghi, Pavan, Lo Mascolo & Sarà, 2013, 2014). In addition, prolonged and close contact of humans with charismatic species can leave detrimental impacts (Weaver, 2005). Failure to ensure sustainability of fisheries and the good health of the seas is considered to be a major flaw in Mediterranean marine governance leading to drastic impacts on charismatic species (RAC/SPA, 2013).

5 Conclusion

This research has shed light on lack of charismatic species and its impact on ecotourism potential on islands, an aspect which has not received any attention in the central Mediterranean region. It has been confirmed that the absence of charismatic species is not a detrimental issue hindering ecotourism potential. On the other hand various other approaches being adopted or proposed have conservation benefits including giving due attention to the broader biodiversity rather than focusing on few charismatic megafauna. Results have marketing implications especially since nature-based tourism is growing world-wide with more and more tourists visiting protected areas. Marketing efforts need to focus on both experienced and inexperienced ecotourists

(Balmford et al., 2015). Yet different packages and research on ecotourist profiling might be necessary. In this regard, more studies on profiling of ecotourists in the region and which are currently lacking are required.

In 1987, Schembri, Lanfranco, Farrugia, Schembri and Sultana pointed out that whereas quality/quantity arguments on tourism had been ongoing and even if other countries were benefiting from a tourism product based on nature, Malta had failed to tap into this niche. Diamantis (2000) argues that ecotourism in Mediterranean Islands was still in its infancy hinting at the lack of demand. Meanwhile, whereas tourism in the Mediterranean is strong, new trends in tourists' interests are shifting from 3S tourism (Vogiatzakis et al., 2008). This implies that new tourism products such as ecotourism need to be further explored. Meanwhile the situation reported by Diamantis (2000) did not change much. Yet, one cannot blame this on the absence of charismatic species. Other challenges need to be overcome including island connectivity, lack of innovative ecotourism products and lack of services such as interpretation. The area of study is also impacted by lack of promotion of the islands as ecodestinations with too much focus being made by policy makers and operators on mass tourism. Lack of management of protected areas due to lack of funding, extensive detrimental environmental impact and lack of environmental awareness among locals and operators were other challenges identified by stakeholders.

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Annex 1 Checklist of issues raised during interviews and focus groups

- Activities and features that are most important during an ecotour
- Motivations to participate in an ecotours
- Presence of large charismatic species
- Absence of terrestrial large charismatic species and impact on ecotourism experience
- Absence of wildlife sightings as a limiting factor
- Causes of disappointment during ecotours
- Fulfilment of expectations identified prior to the ecotours
- Willingness to recommend the ecodestination visited to others
- Aspects incorporated in excursions organised
- Aims of ecotourism excursions beyond target species
- Species that can serve as flagship ecotourism targets
- Challenges being faced and opportunities for ecotourism development in area of study
- Approaches to overcome the challenge of absence of terrestrial charismatic species