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LIFE MEDTURTLES
COLLECTIVE ACTIONS FOR IMPROVING THE CONSERVATION STATUS OF THE EU SEA TURTLE POPULATIONS: BORDERING AREAS (LIFE18 NAT/IT/000103)

ACTION D7 - Monitoring the impact of the project

Final report

August 2024

Collective actions for improving the conservation status of the EU sea turtle populations: bordering areas (LIFE18NAT/IT/000103). Project is carried out with the assistance of LIFE financial instrument of the European Union / **info@medturtles.eu**

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CHAPTER 1. PROJECT RESULTS

The project had a specific stakeholder target (professional fishers) and the results indicate an even higher success than expected, and therefore a great conservation impact. First, the geographical coverage, in terms of ports involved, was higher than planned, with 60 (vs. 37 planned) ports involved in Action C2, 69 (34) in C3, 35 (27) in C4 and 20 (21) in C6. The number of fishing boats involved in the project was also higher than planned: 1546 (905) for information campaign (C2), of which 1190 (1020) received a fisher kit for the onboard best practices of turtle handling, 453 (114) for hot-spot areas (C3), and 128 (74) for fishing gear modification (C4). The number of individual fishers interviewed and informed during actions C3 and C6 were 2136 and 774, respectively. Action C5 created or upgraded 8 sea turtle rescue centers or first aid centers (vs 6 planned), greatly improving the rescuing capacity in the project countries, with a total of 803 turtles rescued during the project (vs. 520 foreseen) and the capacity of rescuing about 200 turtles per year after the project. It is estimated that more than 9595 turtles per year will benefit from these actions after the project. The project also involved 32 NGOs in project activities and reached about 13.6 million citizens with information about the project and project topics. In conclusion, the project achieved a high conservation impact already during the project but especially after the project through the several long-lasting improvements of conservation capacity, best practices and information.

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CHAPTER 2. EVALUATING ECONOMIC AND SOCIAL IMPACTS OF SEA TURTLE CONSERVATION

INTRODUCTION

Action D7 of LIFE MEDTURTLES is based on Action D1 of LIFE EUROTURTLES, of which LIFE MEDTURTLES is and extension.

Action D7 aimed to integrate the conservation of biological diversity with sustainable economic development, through the inclusion of the local and regional stakeholders (in particular fishery and tourism), as well as the tourists and visitors to the regions covered by the project. Knowledge of stakeholder activities, of actual and perceived impacts on the environment and the potential socioeconomic effect of conservation actions is pivotal in this respect and was provided by this action through reaching out to these stakeholders. Moreover, this action tracked the socio-economic impacts of the project, identified the current use of the study areas by both stakeholder groups, assessed impacts and threats, identified potential synergies, and highlighted alternative livelihood options based on the presence of these endangered and charismatic species, including the socioeconomic potential for wildlife tourism. This was achieved by: (i) interviewing relevant authorities, stakeholders and local communities based on a questionnaire developed in cooperation with fishery and tourism specialists and (ii) interviewing tourists and visitors to get their opinion about sea turtle conservation based on a questionnaire on their perception of sea turtles.

Economic valuation provides valuable information on the relative value of a species for policy making (White et al, 2001) and its importance in the context of sustainable development (Ledoux & Turner, 2002). The economic value of the sea turtle is estimated within the framework of "Total Economic Value" (TEV), made up of use and non-use values (Pearce & Seccombe-Hett,

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2000; Teh et al, 2018). Tourism is used to create such a market (Sala et al, 2013) where use-values refer to recreational use, based on special tourism offers, while non-use values refer to preservation value, based on bequest, existence, and option value (Lee & Han, 2002). Although a variety of methods has been developed (Farber & Gringer, 2000; Pearce & Seccombe-Hett, 2000; Nunes & van den Bergh, 2001), contingent valuation method (CVM) is the most used due to its ability to measure non-use values together with use values (Farber & Gringer, 2000; Nunes & van den Bergh, 2001; Carson et al, 2001; Spash, 2000; Jones et al, 2011; White et al, 2001). It requires setting up a hypothetical market where participants state bids for various goods based on information they are provided (White et al, 2001). Participants are presented with a hypothetical scenario and explicitly asked what that scenario is worth to them (Farber & Gringer, 2000; Carson, 2000; Jones et al, 2011). The specific objectives of this action were: (i) to examine the non-use value of sea turtles and the potential for generating income through taxation methodologies as funding management and enforcement if a marine protected area is created; to examine the use-value of sea turtles and its potential for generating income through user fees to further fund marine conservation; to examine tourist/visitor awareness of threats (collision with boats, plastic pollution, bycatch) to sea turtles, and their support for implementing solutions to mitigate them; to examine stakeholders and tourist support for the creation of a marine protected area (MPA) for sea turtles. The action was carried out in the 5 project countries: Albania, Italy, Spain, Tunisia and Turkey.

METHODS

Two questionnaires (the same developed by LIFE EUROTURTLES) were devised: Q1, targeting local stakeholders (fishers and tourist workers) about the impacts and potential benefits of wildlife watching, rescue centres and associated economic and social benefits, and Q2, targeting tourists and visitors, about actual and perceived current stresses to the marine biodiversity and solutions including new economic incentives and payments for ecosystems services (PES) initiatives.

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To estimate the economic value of loggerhead sea turtles a contingent valuation survey was conducted to measure respondent's willingness to pay. The questionnaire Q1 was intended to gather information from the local stakeholders, while the questionnaire Q2 was aimed at gathering information from tourists and visitors. Both questionnaires were designed to assess the level of respondent's knowledge and their valuation of the importance of sea turtles.

The answers from the questionnaires were entered in MS Office Excel and processed in R. The economic value of loggerhead sea turtles in the region was estimated with CVM (contingent valuation method) using three distinct willingness to pay scenarios. Visiting a sea turtle centre and going on a marine wildlife watching trip are considered use-values since they provide tangible experience in return for the payment and estimation is done by calculating the median value of respondents would pay (willingness to pay or WTP) for an entrance ticket or a trip fee. While WTP to a sea turtle conservation fund while on their holiday is a scenario without tangible experience with sea turtles in return for the payment and it is considered a non-use value.

RESULTS

Survey on the local stakeholder perceptions of sea turtles (Q1)

A total of 1042 interviews were carried out (140 in Albania, 100 in Italy, 68 in Spain, 561 in Tunisia, 173 in Turkey). 91% of the interviewed were males (n=1040). The median age was 45 years.

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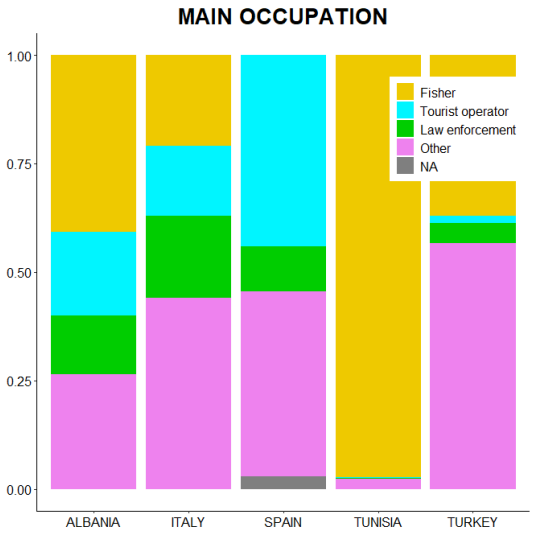

Local stakeholders' knowledge and perception about sea turtles

Results show that the majority of the respondents think that the presence of sea turtles enhances the condition of the marine environment (scores 4 and 5: 61.0%). Sea turtles were considered as an important component of the sea by 85.5% of the respondents. The awareness of the importance of the area as the sea turtles' habitat was high (78.0%). The majority (83.8%) of the respondents knew that sea turtles are threatened species and (although to a lesser extent: 66.4%) they knew they are a priority species for conservation in the EU.

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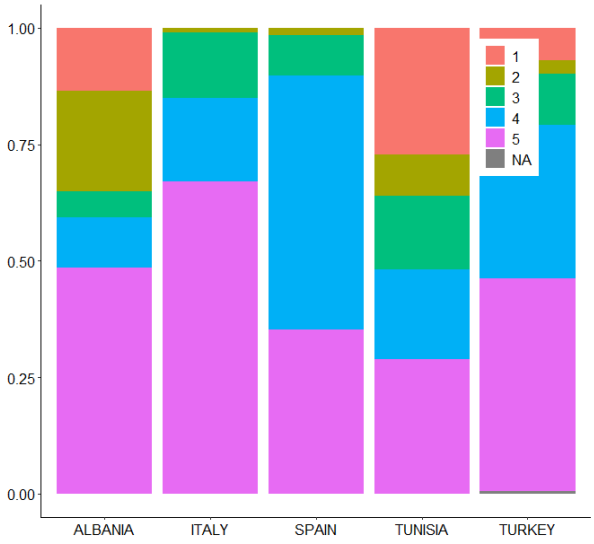
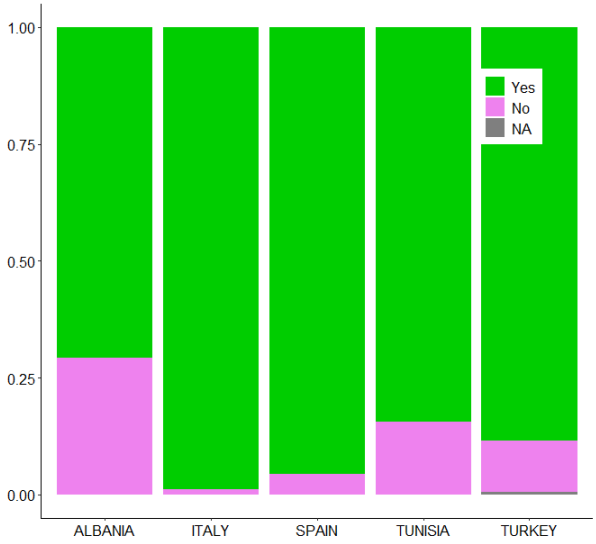
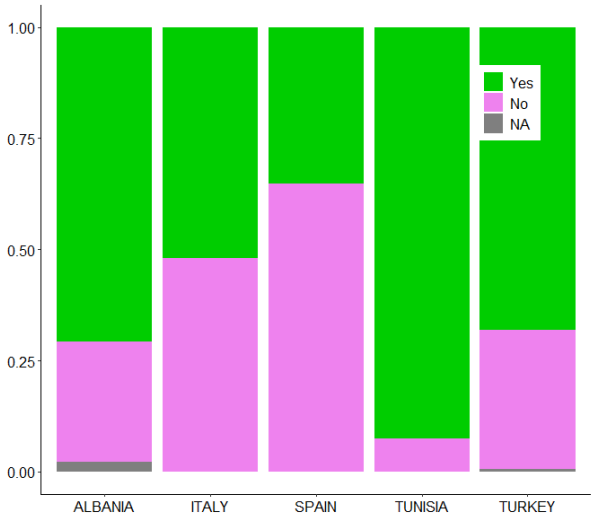
DOES THE PRESENCE OF SEA TURTLES ENHANCES THE MARINE ENVIRONMENT QUALITY?



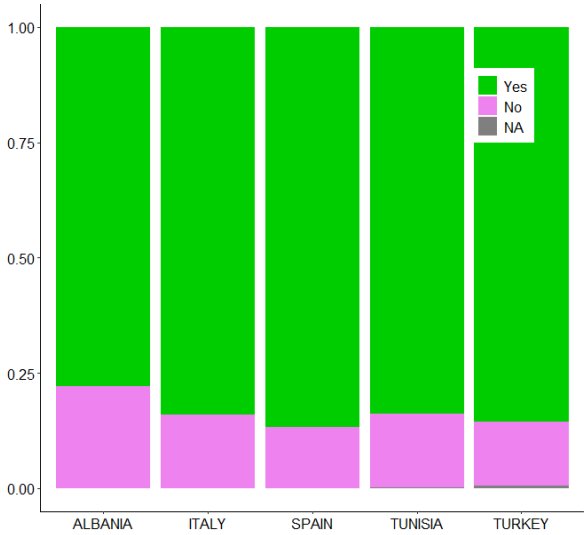
ARE SEA TURTLES A CRUCIAL COMPONENT OF THE MARINE ENVIRONEMENT?



DID YOU KNOW THAT THIS IS ONE OF THE MOST IMPORTANT AREAS FOR SEA TURTLES IN THE MEDITERRANEAN SEA?



DID YOU KNOW THAT SEA TURTLES ARE THREATENED?



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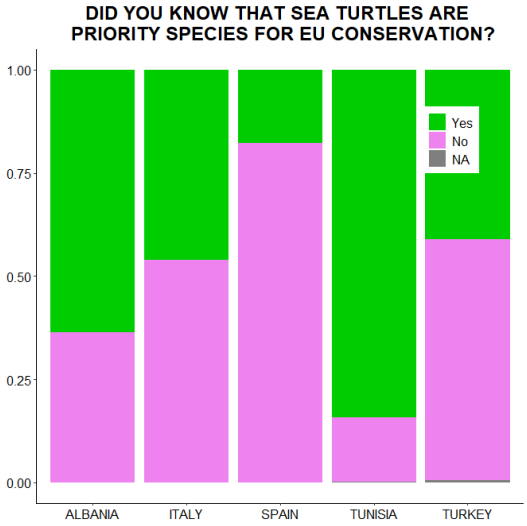

Importance of turtles for local stakeholders

The majority of the respondents (81.1%) considers the condition of the marine environment as very important (scores 4 and 5) for their occupation. Although most of the respondents (80.4%) would support the creation of a marine protected area for sea turtles in the region, only 57.9% of the respondents believe that the presence of an MPA in the region could have a positive effect on the economy of the region. However, the touristic sector is attractive for them, with 43.7% of the respondents being interested in becoming a touristic operator working specifically on the sea.

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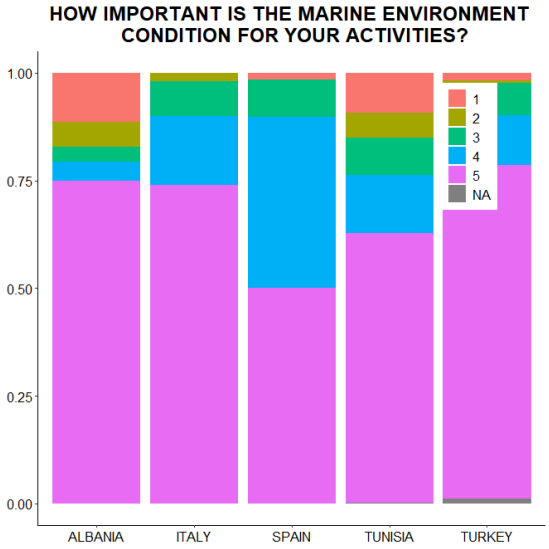

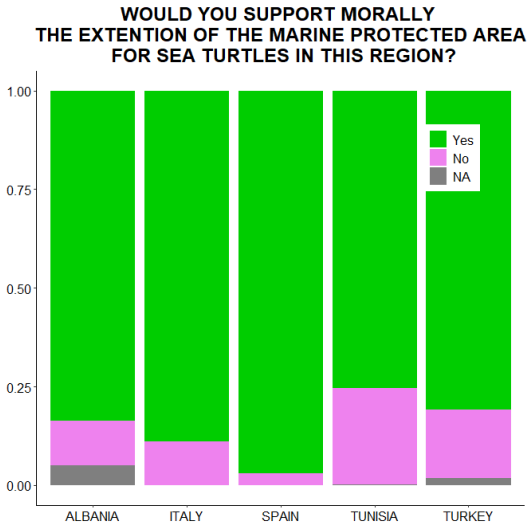

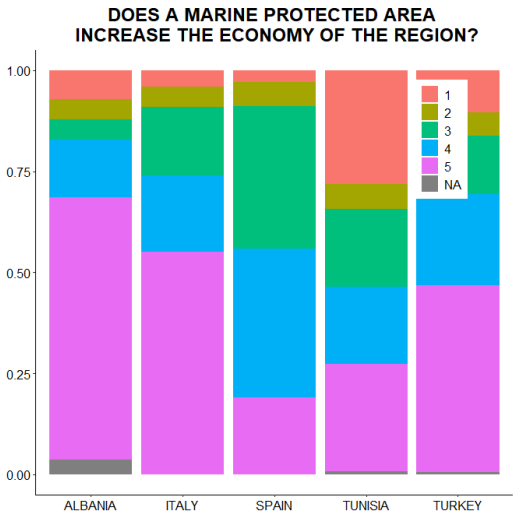

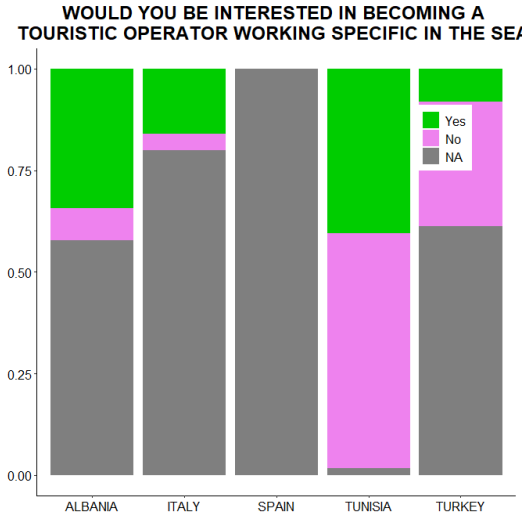

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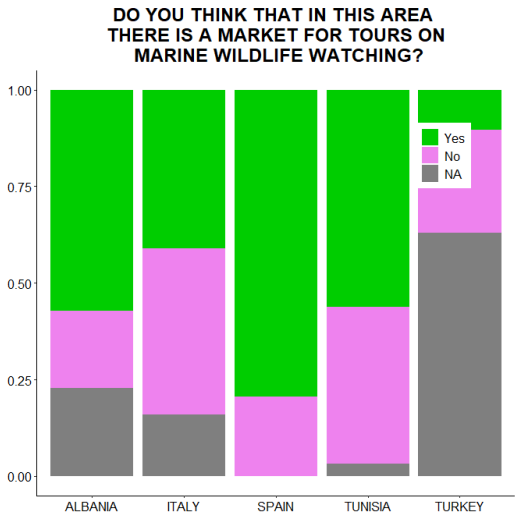
Potential methods for funding long-term conservation

The demand for developing an eco-touristic offer, which would provide tangible experience with sea turtles, was high: 79.9% of the respondents believes that there is a market for a sea turtle rescue centre or education centre and 77.7% believes that visitors would pay a premium for a dedicated marine wildlife watching trip. The modal value of the amount of money the respondents believe that visitors are willing to pay was 1-3 € for an entrance fee for a sea turtle rescue centre, while answers about a ticket fee for a wildlife watching tour where more heterogenous across countries. Finally, 73.7% of the respondents believe that visitors would be willing to contribute to a conservation fund for sea turtles while on their holiday and the median value of the amount per day they would be willing to pay was slightly less than 2 €.



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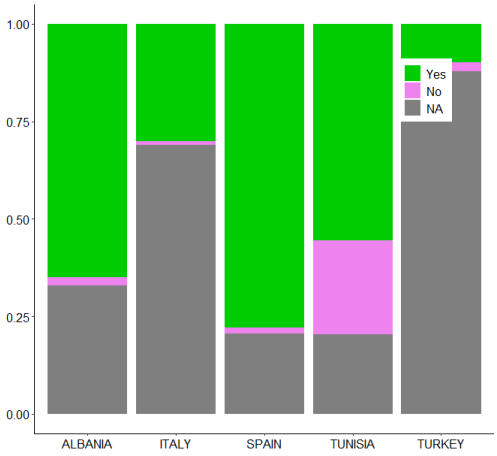
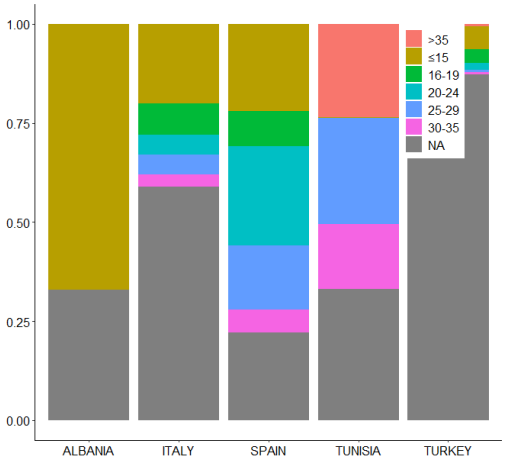
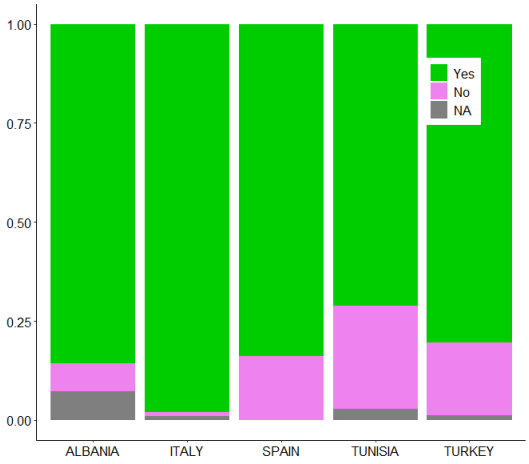
DO YOU THINK THE VISITORS WOULD BE WILLING TO PAY A SUPPLEMENT FOR THIS ACTIVITY?



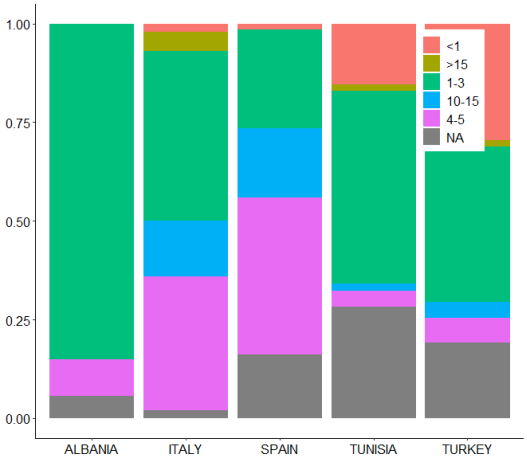
HOW MUCH DO YOU BELIEVE VISITORS WOULD BE WILLING TO PAY EACH?



DO YOU BELIEVE THAT IN THIS AREA A SEA TURTLE RESCUE CENTER WOULD ADD VALUE, AWARENESS AND EDUCATION TO CONSERVATION?



ACCORDING TO YOU, HOW MUCH THE VISITORS WOULD BE WILLING TO PAY AS ENTRANCE FEE OF A SEA TURTLE RESCUE CENTRE PER PERSON?



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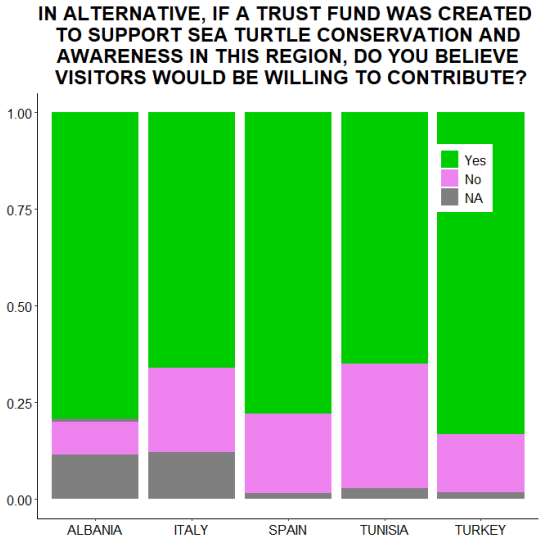

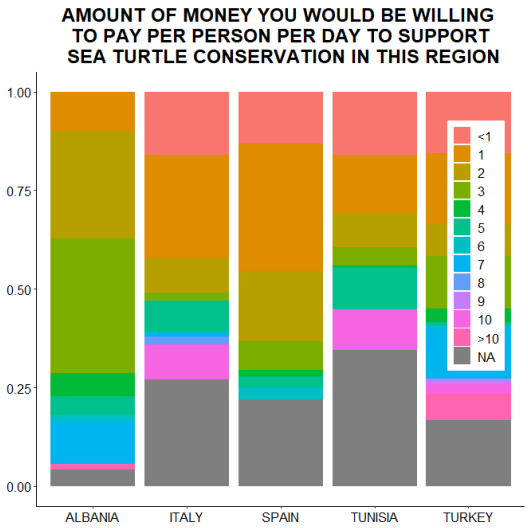

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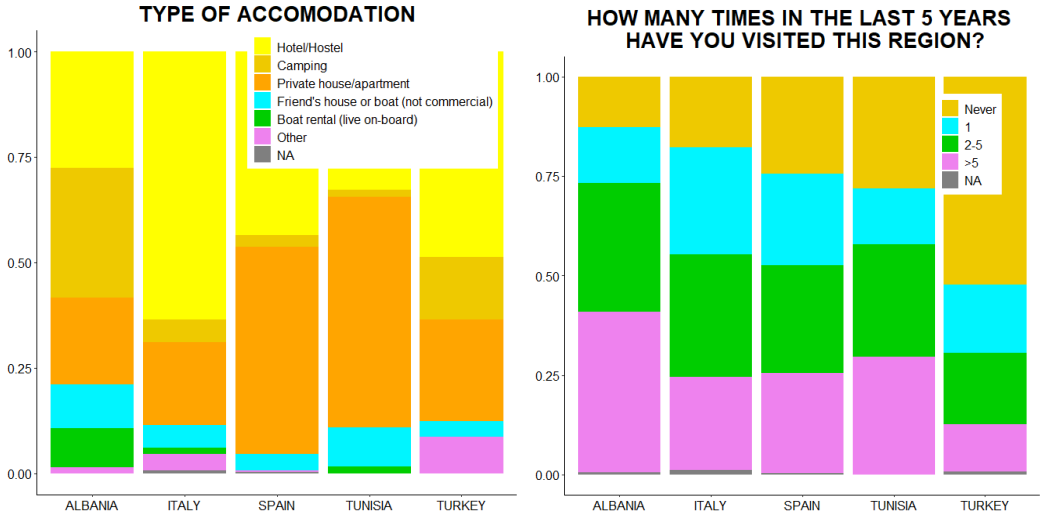
Survey on the visitor-tourist perception of sea turtles (Q2)

A total of 1144 interviews were carried out (298 in Albania, 264 in Italy, 266 in Spain, 64 in Tunisia, 252 in Turkey). 51% of the interviewed were males (n=1137). The median age was 39 years. The median number of days staying in the area was 5.



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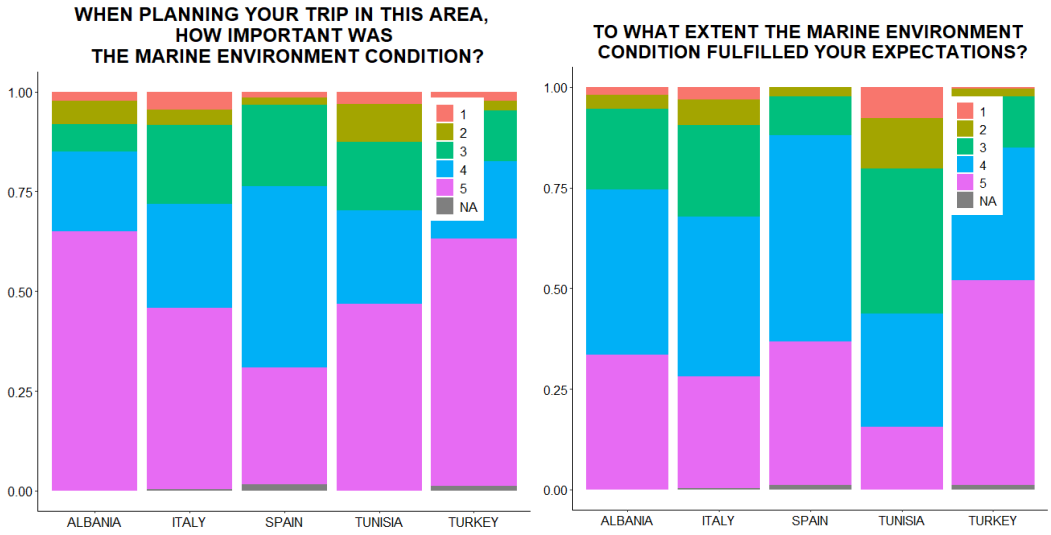
Importance of the environment for the choice

Results show that the respondents were very interested in the condition of the marine environment when deciding on their trip (scores 4-5: 78.4%) and the existence of a MPA increase the attractiveness of the region (scores 4-5: 78.4%). Expectations of the marine environment were fulfilled (scores 4-5) for 76.5% of the respondents. Moreover, 79.1% of respondents were influenced (scores 4-5) to return because of the condition of the marine environment.



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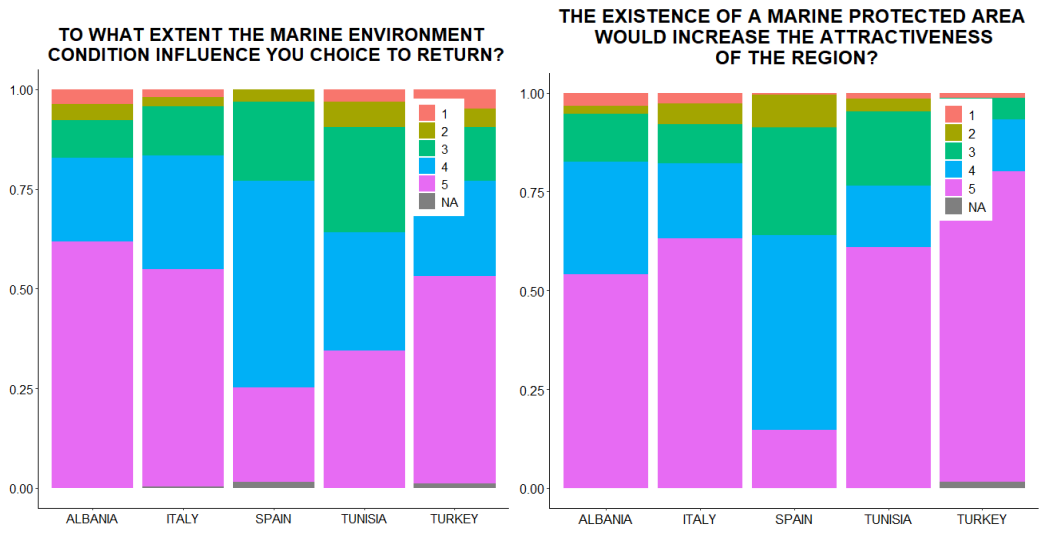

Knowledge on turtles

The majority of the respondents think that the presence of sea turtles enhances the condition of the marine environment (scores 4 and 5: 81.5%). The awareness of the importance of the area as the sea turtles' habitat was low (47.3%). 85.1% of the respondents knew that sea turtles are threatened species, while only 47.8% of the respondents knew that they are a priority species for conservation in the EU.

Analysis of questions investigating tourists' awareness of threats to sea turtles showed that respondents considered entanglement and plastic ingestion as the most important threat (scores 4-5: 92.1%), followed by bycatch (79.4%) and strikes by speedboats (69.9%).

Willingness to support actions that would mitigate threats to sea turtles was strong, first regarding speedboats (97.3% supporting speed limits), followed by plastic ingestion (88.4% willing to support only natural cotton bags available in local shops) and bycatch (83.4% willing to pay 10% more for certified local seafood products where subsidized eco-methods have been used to reduce bycatch). The majority of the

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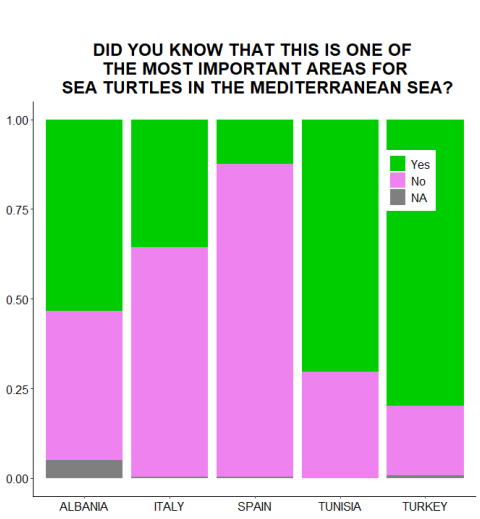
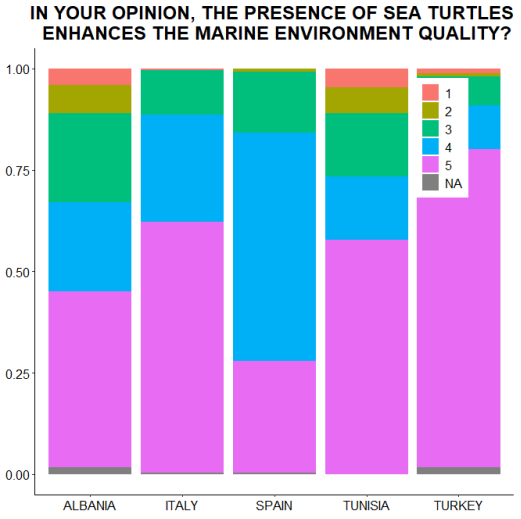
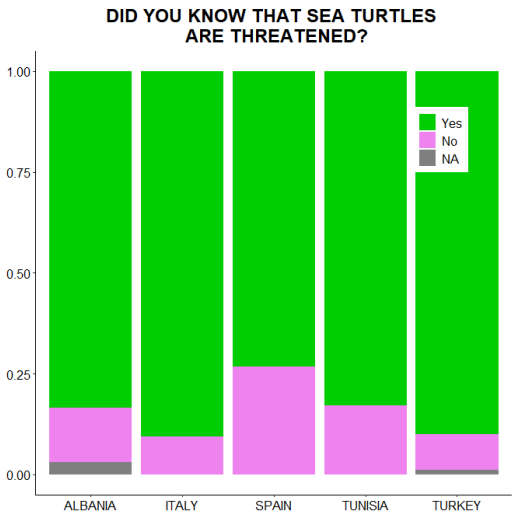
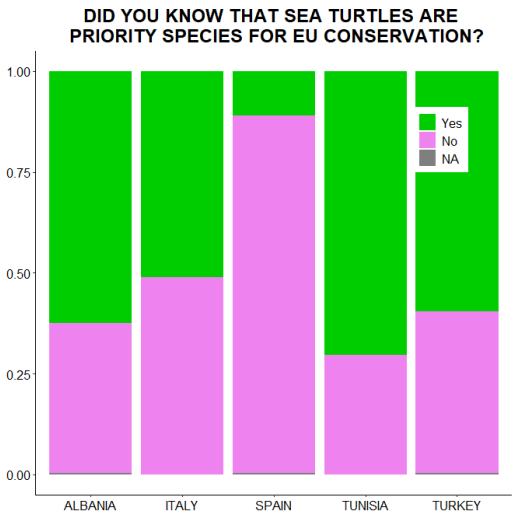
respondents (96,9%) would morally support the call for the creation of MPA in the region









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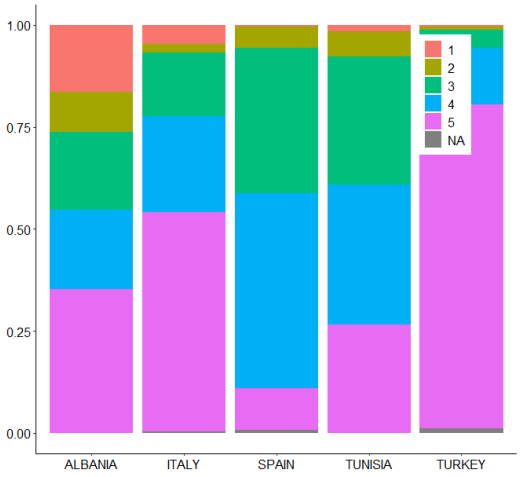
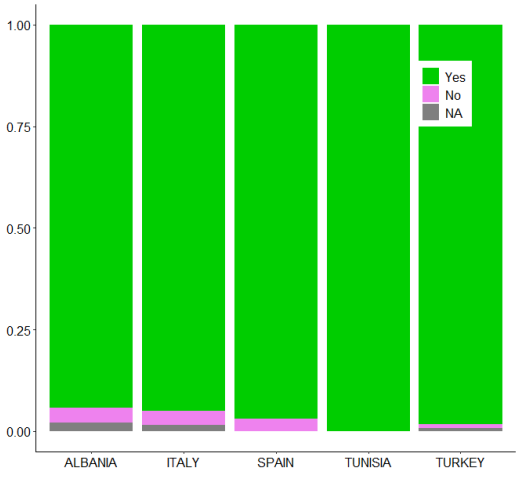
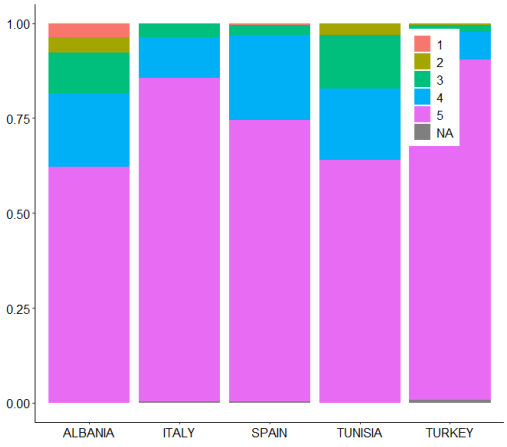
IN YOUR OPINION, TO WHICH EXTENT SEA TURTLES ARE TREATENED BY STRIKES WITH SPEEDBOATS?



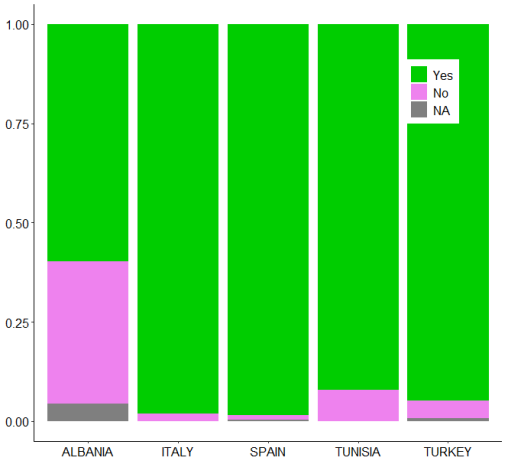
WOULD YOU DRIVE MORE SLOWLY ON THE SEA AND SUPPORT THE SPEED LIMITS FOR BOATS?



IN YOUR OPINION, TO WHICH EXTENT SEA TURTLES ARE TREATENED BY ENTANGLEMENT WITH FISHING NETS AND PLASTIC INGESTION?



WOULD YOU HAVE ONLY NATURAL COTTON BAGS AVAILABLE IN LOCAL SHOPS?



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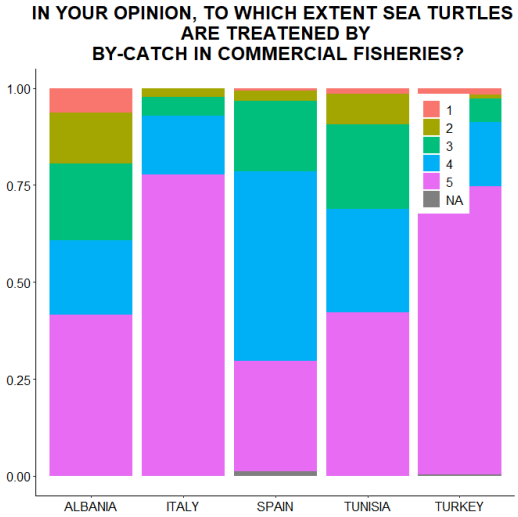

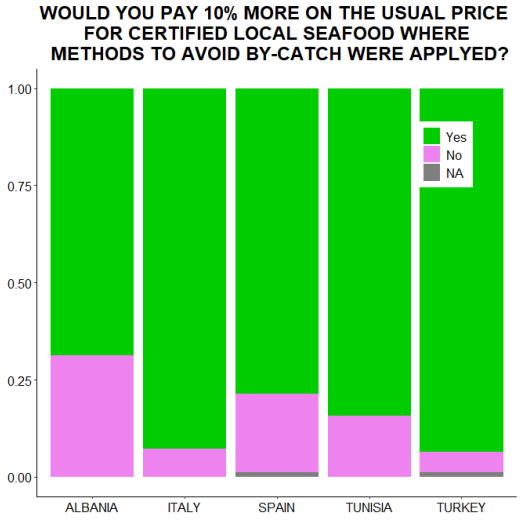

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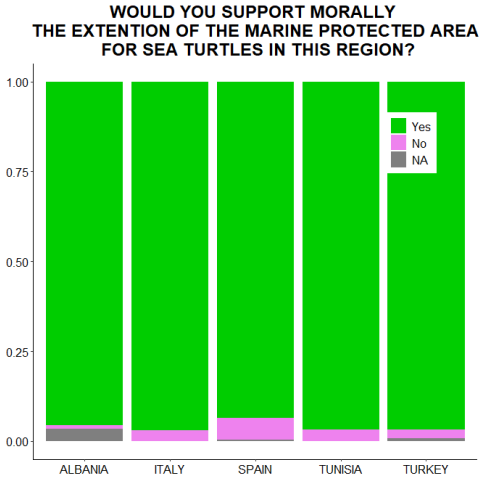

Potential methods for funding long-term conservation

Results showed that the majority of respondents (63.1%) had never see sea turtles in the wild and the demand for developing an eco- touristic offer is high, with 84.9% and 89.1% of responded being interested in marine wildlife watching and visiting a sea turtle rescue centre, respectively. The median value of the amount of money the respondents are willing to pay for those two activities was around 15 € and 5 €, respectively. Finally, 85.8% of the respondents would be willing to contribute to a conservation fund for sea turtles while on their holiday and the median value of the amount per day they would be willing to pay was 3 €.

The results show that loggerhead sea turtles have non-use and use-value with the potential to generate/ensure income for their conservation.

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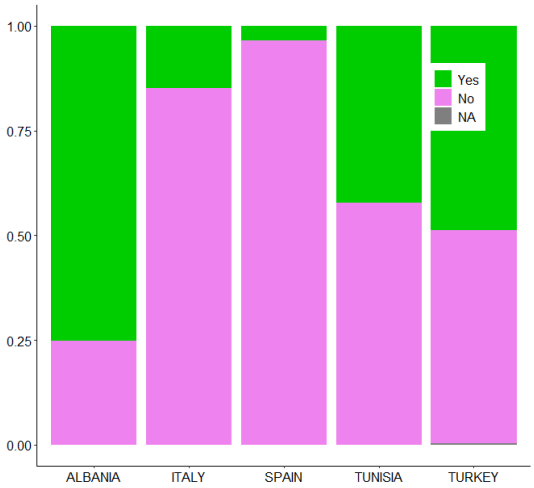
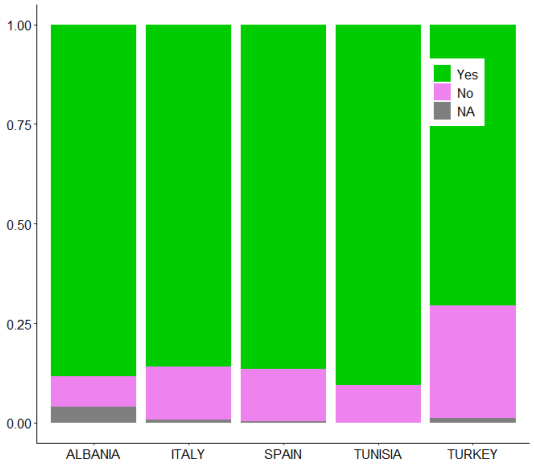
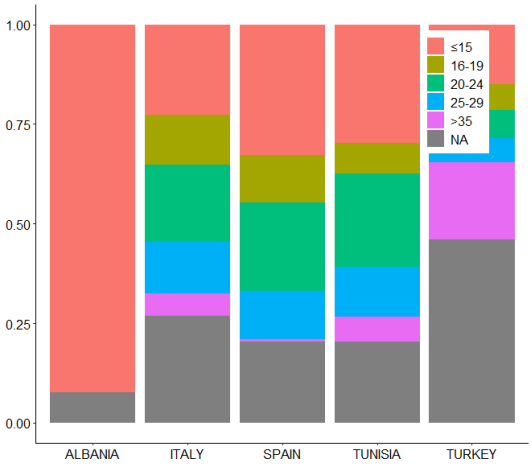
HAVE YOU EVER SPOTTED A SEA TURTLE IN THE WILD IN THIS REGION?



WOULD YOU BE INTERESTED IN A DEDICATED TOUR ON MARINE WILDLIFE WATCHING DURING YOUR HOLIDAY IN THE REGION?



HOW MUCH WOULD YOU PAY PER PERSON PER DAY FOR A DEDICATED TOUR ON MARINE WILDLIFE WATCHING?



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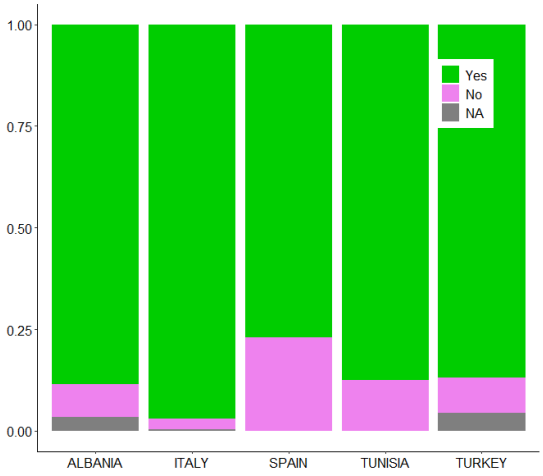
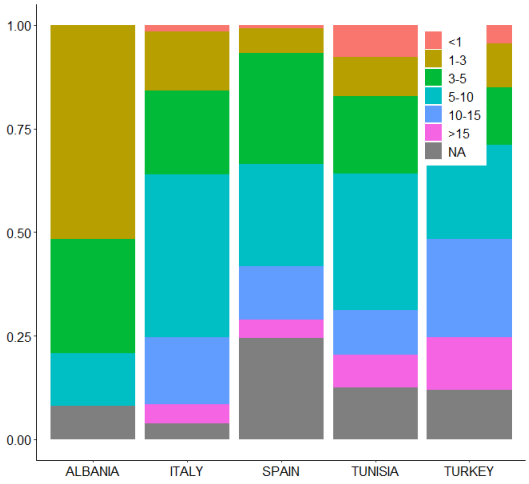
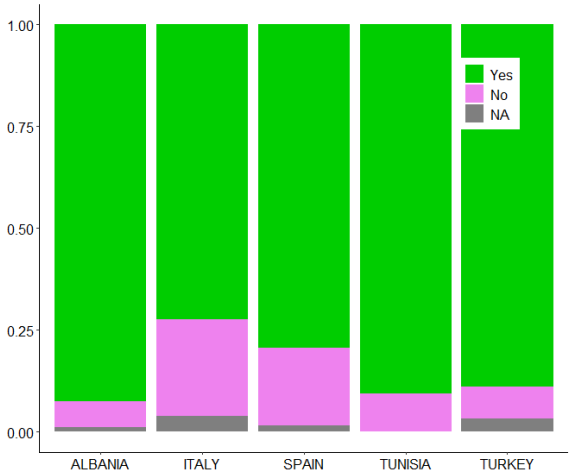
WOULD YOU BE INTERESTED IN VISITING A SEA TURTLE RESCUE CENTER OR AN EDUCATIONAL CENTER DURING YOUR HOLIDAY IN THIS REGION?



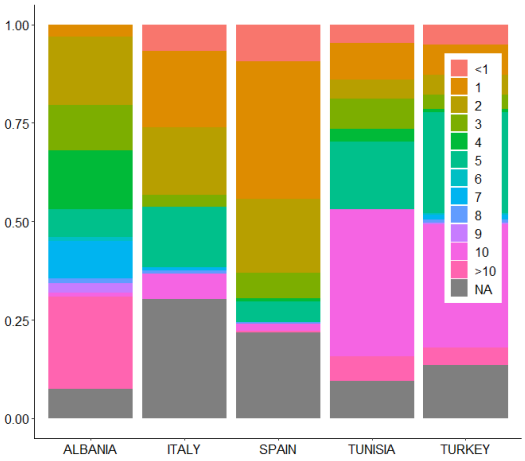
HOW MUCH WOULD YOU PAY PER PERSON PER DAY AS RESCUE CENTRE ENTRANCE FEE ?



IN ALTERNATIVE, IF A TRUST FUND WAS CREATED TO SUPPORT SEA TURTLE CONSERVATION AND AWARENESS IN THIS REGION, WOULD YOU BE WILLING TO CONTRIBUTE TO IT?



AMOUNT OF MONEY YOU WOULD BE WILLING TO PAY PER PERSON PER DAY TO SUPPORT SEA TURTLE CONSERVATION IN THIS REGION



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DISCUSSION

Sea turtles have non-use economic value with the potential to ensure additional long- term funding for their conservation in the region. The non-use value had a median value of circa 2 € per person per day in the opinion of the local stakeholders and 3 € as expressed tourists' willingness to pay.

Sea turtles have use value with the potential to ensure direct income for their conservation in the region. The median value that visitors are willing to pay for an entrance ticket to a sea turtle rescue centre was 5 €, higher than what thought by local stakeholders. The sample showed a generally high interest in visiting a sea turtle rescue centre, which could be a result of the respondents' desire to learn about sea turtles and their importance in the region. Visitors WTP for a dedicated marine wildlife trip is lower than the amount expected by local stakeholders. It is probably because the amount people are willing to spend largely depends on the charisma of the species (Kontoleon & Swanson, 2003). Even though sea turtles are charismatic species (Bjorndal & Jackson, 2003), the question only asked for an estimation of WTP for a dedicated marine wildlife trip, without specifying it as a sea turtle watching trip.

Plastic was considered as the biggest threat, which might be a result of the presence of sea turtles in environmental messaging for addressing plastic pollution issues (Eagle et al, 2016). It was followed by bycatch, which is a globally recognized threat to other marine species, and collision with boats as the least important, because there is little evidence of the direct impact of boat hits (Casale et al, 2018) which leads to less environmental messaging regarding that issue.

The willingness to make behavioural and/or financial commitment to mitigate threats to sea turtles was strong. The overall results showed how more than 80% of the respondents are willing to make behavioural and/or small financial commitments.

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Furthermore, there is high moral support (>80%) from both stakeholders and tourists for the creation of an MPA in the region. Tourism is used to provide economic benefits (Stronza & Gordillo, 2008) important for conservation and Eco-tourism is seen as a potential strategy for conservation while meeting human needs (Stronza & Pegas, 2008).

The respondents showed low knowledge about the importance of the region for the sea turtles and about their priority for the EU. So educational programs need to focus on raising awareness on (i) the importance of sea turtle for the EU, (ii) sea turtle important areas, (iii) the relative importance of threats, with bycatch being the most important one, and (iv) the most promising conservation measures.

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