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31.32.661 - TOURIST'S PERCEPTION ABOUT MARINE ECOSYSTEM SERVICES: CHOICES AND REACTIONS TO CHANGES

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INTRODUCION

Although the tourism sector is tightly connected to environmental issues it is one of the least prepared to deal with changes in environmental conditions and especially with climate changes. According to a recent report by the consulting firm (KPMG, 2016), tourism is among the industries least prepared for and the most vulnerable to climate change. In addressing disaster risk management in the tourism industry, the complexity, dynamism, and importance of this industry to the world and small island economies is recognized, along with the potential risks to coastal tourism investments (SHURLAND and JONG, 2008).

Therefore, coastal management strategies might evocate the concept of Ecosystem Based Management (EBM), that elucidate a new way of considering the relationship between humans and nature, seen as a necessary approach to deal with resource scarcity and biophysical changes (ARKEMA, ABRAMSON, and, DEWSBURY, 2006). Hence, due to the close relations between tourism and environmental quality, the assessment of stakeholders' perception about the benefits these ecosystems provide is a first step towards empowerment of coastal planning. In this sense, this work aims to assess the perception of tourists regarding marine Ecosystem Services (ES) and how alterations of these services, if noticeable, could lead to destination choice reaction.

The study area comprises the municipality of Ubatuba, on the northern coast of São Paulo State, Brazil, which exuberant vegetation and beaches are a significant tourist attraction, with summer tourism as the main economic activity of the region.

METHODS

Semi-structured interviews were applied to a total of 387 tourists in several Ubatuba beaches. A semi-structured interview is conducted with the use of a script, but with freedom for the addition of new questions by the interviewer (EASTERBY-SMITH, THORPE, and LOWE, 1991). The questionnaire used were divided into several sections, among which, for example: Perception of marine ecosystem services; activities on the beach; kind of information consulted before going to the beach; and willingness to visit the beach after environmental changes. The interviews where performed one week before and after the carnival´s season, period when the municipality usually receives more tourists comparing to other months. In this sense, there is the understanding that in such period the marine environment changes are more perceivable, due to the presence of massive tourism and impacts associated with it.

The interviews were conducted on seven beaches according to their physical characteristics (morphological and infrastructural) and position in the municipality, in order to cover the whole area and aiming to reach the maximum tourists diversity and beach characteristics. The beaches are: Lázaro, Itamambuca, Praia Grande, Enseada, Toninhas and Domingas Dias. The method for the interviews was inductive, with systematic observation, non-participant and individual, through semi-structured questionnaire applied face-to-face. The questions were made openly for the interviewees and according with their answer, marked in a category, whenever was possible, to facilitate the tabulation. The average time for the interviews was around fifteen minutes.

The questionnaire was designed to investigate the profile of the tourists who visits Ubatuba, the importance of water quality and weather conditions for the tourists, if it is fundamental for travel planning. Also, to identify the ecosystem services (MEA, 2005) perceived by them, to evaluate perceived changes in marine ecosystem and the factors associated to them. To investigate the tourists' perception about marine ecosystem services were used the concepts of Costanza et al. (1997) "the benefits human populations derive, directly or indirectly, from ecosystem functions", and MEA (2005) "the benefits people obtain from ecosystems.

Data obtained from the interviews with tourists were tabulated in different categories of the questionnaire. To obtain the results, an analysis of database was performed using PivotTables. Besides the use of PivotTables, several filters were

applied to obtain the number of mentions of specific factors. The number of mentions are presented in figures and transformed it in percentage to discuss the results.

RESULTS AND DISCUSSION

The results regarding perception of benefits from the marine ecosystem are as follows: the most mentioned benefits were recreation (62,53%), fishery (37,46%) and cultural services (36,43%). It is interesting to notice that only 5,16% of the respondents identified the regulation services.

It is important to mention that the sum of the percentages presented does not result in 100%. Since there are many cases where respondents mentioned two or three factors, for example, if all respondents mentioned two different factors, it means that 100% of respondents mentioned the "Factor 1" and 100% of respondents mentioned "Factor 2" too. In sum, the numbers presented represents the percentages of tourists who mentioned a certain factor.

Hence, it is evident, regarding marine ecosystem services that the cultural and provisioning services are the most perceived by tourists, and that regulatory functions like climate regulation and CO_2 capture are less perceived.

These results corroborate, partially, the finds of the international symposium "Future Management of Ocean Ecosystem Services", held at the University of Tokyo, on October 1 (2013), which recognized that ocean management activities are primarily focused on fisheries and other provisioning services, and important regulatory, supporting and cultural services, however, are often largely overlooked (BLASIAK et al., 2014).

When questioned about which activities the tourists perform when visiting the municipality's beaches, the most mentioned were: Bathing (74,93%) and sunbathing (54,26%), followed by sports practices (19,63%), walking (11,88%) and relaxing or resting (11,36%). It is noticed that once most respondents have contact with seawater, their perception of the marine environment might be more accurate than other stakeholders who have any relation with the beaches, but do not usually bath there. It is aligned with the idea that as closer as someone is to some environment, more perceivable are the changes (RUIZ-FRAU, EDWARDS-JONES, and KAISER, 2011; STEEL et al, 2005).

Regarding the factors that tourists consider more important to carry out such activities, most mentioned were water quality for bathing (60,98%), weather conditions (33,33%), beach cleanness (22,73%) and number of people on the beach (17,82%). Comparing with previous studies about reasons for beach choice (BOTERO et al., 2013), similar results of relevant parameters can be noted. While this work evidences water quality as the most important parameter to carry out preferred activities at the beach, worldwide studies presents differences according with geographical and regional characteristics. In Europe, for example, the most important parameter is safety, while this study evidences only 1,29% of respondents' preference. Anyway, beach users' preference in the Caribbean was "water and sand quality", partially corroborating the results of this study.

Regarding the reaction to environmental changes that affect seawater aspect/quality, the great majority affirmed they would go to a different destination. Few of them would stay, but would avoid going into the water. A small amount affirmed they would go bathing anyway, especially when referring to seaweed abundance. These results highlight the fragility of tourist destinations regarding seawater quality alterations. As Cottet, Piégay, and Bornette (2013) have found, the visual parameters like water transparency and colour, the presence and appearance of aquatic vegetation, the presence of sediments, seems to be more reliable to influence human perception than ecological parameters. Another interesting issue was the importance of monitoring seawater quality/aspect. Once the municipality is economically dependent of touristic demand, a fail in this process could lead to a relevant socioeconomic impacts, especially if there is no emergency plan. The lack of proper planning has threatened consolidated touristic destination like Yucatán Peninsula, by algae blooms (INSKEEP and KALLENBERGER, 1992); Caribbean and South American coastal zone, by marine debris (COSTA et al., 2010; DO SUL and COSTA, 2007).

CONCLUSION

This study focused on the assessment of tourists' perception about marine ecosystem services and how alterations of these services, if noticeable, could lead to destination choice reaction.

The objectives were aimed and general results shows that regarding the perception of benefits from marine ecosystem, the most mentioned benefits (understood as ecosystem services) were recreation, fishery and cultural services, demonstrating that the respondents perceive ecosystem services more locally and by visual parameters. The most common activities performed at the beaches were bath and sunbath, noticeable, activities that are dependent of seawater to be performed. In addition, seawater quality was a crucial aspect for destination choice, and the majority of respondents indicated to move for a different destination in case of changes on seawater quality.

Because the importance to include the tourist's perception about marine ecosystem services in the process of coastal planning, monitor the quality of sea water to ensure the maintenance of long-term tourist visits is essential matter. In the specific case of the study area - Ubatuba, in the north coast of São Paulo, Brazil - this type of information should subsidy the decision makers for the elaboration of

coastal planning policies. The inclusion of this type of information in coastal planning would lead to policies that contemplate the conservation of such ecosystem services (especially in relation to water quality and impacts on the landscape), protecting and conserving the local ecosystem and maintaining and encouraging the flow of tourists, as an economic activity, in a sustainable way.

We suggest that future studies investigate the perception of other stakeholders considered as directly involved with marine ecosystem services, affecting and being affected by changes on its dynamics, as fishermen, dive and sailing operators and public authorities.

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