GeoJournal of Tourism and Geosites
ISSN 2065-1198, E-ISSN 2065-0817

Year XV, vol. 40, no. 1, 2022, p.302-312
DOI 10.30892/gtg.40136-832

EVALUATION OF ENVIRONMENTAL ISSUES IN THE COASTS OF EDREMIT GULF IN TERMS OF SUSTAINABLE TOURISM

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Citation: Çelik Uğuz, S., Kaimuldinova, K.D., Yildirim, G., & Kabiyev, Y. (2022). EVALUATION OF ENVIRONMENTAL ISSUES IN THE COASTS OF EDREMIT GULF IN TERMS OF SUSTAINABLE TOURISM. *GeoJournal of Tourism and Geosites*, 40(1), 302–312. https://doi.org/10.30892/gtg.40136-832

Abstract: In the last half century, while there have been many positive effects in the field of transportation and tourism with the acceleration of the rapidly developing industry, agriculture, service sectors in the global sense, it has been seen that serious environmental problems have arisen in the countries/regions where tourism has developed rapidly. In Turkey, especially on the seacoasts, the unplanned increase in tourism businesses, and the construction of tourism activities in a way that exceeds the carrying capacity have caused environmental problems. In this study, it has been attempted to determine how the environmental issues seen on the shores of Edremit Gulf are perceived by the members of the environmental organizations living in the region. In this context, the members of environmental organizations were asked what the environmental issues in the gulf area, the environmental policies developed for the environmental issues in the gulf, and the environmental protection measures in the gulf were, and the participants were asked to evaluate these protection measures. The coasts of Edremit Gulf, which show a great touristic density especially in the summer months, is one of the most important sea tourism centers of Turkey, which mostly serves domestic tourism. Tourism businesses and tourism activities may bring environmental issues or affect some regional environmental issues negatively. Therefore, in this study, how the representatives of environmental organizations, who are thought to be more sensitive to environmental issues, perceive these issues, and in line with the results obtained, various suggestions for the solutions of these issues are put forward.

Key words: sustainability, sustainable tourism, pollution, edremit gulf, environmental organizations

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INTRODUCTION

The environment, in general terms, is the sum of the physical, chemical, biological, and social factors over a certain time, which can have an indirect or direct effect on human activities and living beings immediately or in a given time. The environment, at the same time, is the set of universal values. Flora and fauna, inanimate objects, the civilization created by humankind up to now and their products also form parts of the environment (Keleş and Hamamcı, 1993). Foreign substances created as a result of human activities in the natural environment cause the issue called "environmental pollution", and these substances damage the existing balance of water, air, and soil by being processed physically, chemically, or mechanically (Akıncı, 1996). The main cause of environmental pollution that is rapidly spreading all over our planet is the industrialization and urbanization that started in the 19th century and developed rapidly. Natural resources began to deplete rapidly in the 20th century, and natural ecosystems also started to be under the influence of intense anthropogenic pressures. The reason for this planet-wide negative ecological change is both the rapid development of science and technology, and the ever-increasing production and consumption needs.

Natural resources and vulnerable ecosystems have been sacrificed in the name of industrialization, urbanization, enrichment, and development. In addition, the use of chemical fertilizers and new agricultural technologies instead of traditional farming methods have also caused serious damage to the natural environment (İlkin ve Alkin, 1991). Pure ecosystems, depleted natural resources, and vulnerable plant and animal species pay the price of industrialization, urbanization, frenzied consumption, and rapid development. In the last half century, with the modernization of agriculture,

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agricultural productivity per hectare has started to increase rapidly, but chemical fertilizers and pesticides that harm the environment have also become widespread. As a result of wrong irrigation policies, some streams, lakes, and marshes started to dry up; As a result of wrong farming methods, thousands of hectares of land started to become unproductive.

The slow death of the Aral Sea, one of the largest lakes in the world, is one of the first ecological disasters that our planet has experienced. In one hand the never-ending increase of human population of the planet, and the increase in anthropogenic and technological pressure on the natural resources in the other, forests and cultivated lands, meadow-pasture and freshwater areas, and plants and animal species per capita are all decreasing rapidly. Our enriching and industrializing planet is paying the price with impoverished ecosystems and swiftly disappearing natural resources (Atasoy, 2015).

In the 1970s, as a result of the increase in environmental pollution deteriorating the ecological balance of the world and human health, a public awareness began to emerge in developed countries for the protection of the environment and the prevention of environmental pollution. The rapid increase in the number of environmental associations, environmental political parties, and non-governmental organizations established especially in developed countries during the 1970-2000 period, as well as the number of articles, papers and books written about the natural environment can be shown as evidence of the increasing interest in the natural environment.

Activities such as “environmental/ecology movements” started to become widespread in this period, especially in the USA and European countries. In parallel with these developments, it was the first time that governments developed common long-term policies against environmental issues, and the first global initiative was carried out with the conference on "Environment and Human" held in Stockholm, the capital of Sweden, incorporated by the United Nations (UN) in 1972. In the following period, the framework of the measures and steps to be taken on a global scale was created with the UN Environment Program. The reflection of this initiative on the European Community was with the Paris Conference, held by the member countries of the community in the same year.

At the Paris Conference, the member countries of the community stated that air, water and soil pollution now threatens human, animal and plant health and decided to establish a community-wide environmental policy. These were followed by other initiatives formed by regional and international institutions and organizations. Planned and long-term environmental policies were established for the first time in industrialized countries in this context (Ekeman, 1998).

With the rapid growth of the transportation and services sectors, industrialization and the increase in the average income of the families, not only the migration waves from rural areas to the cities accelerated, but also the needs for recreational and sport/art activities increased. All these have led to the intensification of domestic and foreign tourism activities on a global scale and tourism becoming an important economic power in the development of nations in the last half century. The swift increase in tourist facilities and tourism activities in some regions has caused some deep environmental issues. In other words, in the last half century, the rapid development of industry, agriculture, transportation and tourism sectors on a global scale has had some positive effects and repercussions, as well as some negative social, economic and ecological ones. In this study, it has been investigated how environmental issues in the coasts of Edremit Gulf, located in the northwest of the Republic of Turkey, are perceived by environmental organization members. Thought to be an interesting example of detecting environmental issues and producing solutions, discussing the environmental sustainability situation in Edremit Gulf adds more of an importance to the research.

SUSTAINABILITY AND ENVIRONMENTAL ORGANIZATIONS FOR DESTINATIONS

Sustainability refers to the power to protect natural resources and to preserve these resources for future generations while meeting today's needs (Collin, 2004: 207). The concept of sustainability is increasingly becoming a part of daily life in various areas of life and development decisions made by human beings. This global trend also affects the field of tourism due to its environmental, economic, social and cultural effects (Kapera, 2018: 581). The fact that tourism activities depend on undisturbed ecosystems and at the same time create a significant human pressure on these ecosystems points to the contradictory situation in the "tourism-natural environment" relations.

Therefore, tourism destinations need both healthy and clean ecosystems, and sustainable tourism planning to a large extent (Vuković et al., 2019). Sustainable tourism planning is an approach that aims to meet the needs of the tourists, improve the living standards of locals, protect the environment, and preserve them for the future generations, and it is possible with the cooperation of stakeholders (Güzeloğlu and Gulc, 2021: 57). Goeldner and Ritchie (2012) categorize stakeholders as local people, regional/national public administration, environmental organizations, domestic and foreign tourists, overnight tourists, sub-sector representatives of tourism enterprises, destination management organizations, cultural heritage groups, and social/health/education groups. Environmental organizations, which have an important place among these stakeholders, implement various practices and policies in protecting the environment and preserving existing resources for future generations. Environmental organizations are establishments that aim to observe, protect and analyze natural environments. At the same time, these organizations produce data and information on the state of certain natural resources and create actions and policies at local, national and global levels to counter the negative environmental consequences of human behavior and processes (Yong, 2017).

The inclusion of environmental organizations as one of the many stakeholders in sustainable destination management is extremely important in providing more sustainable and long-term benefits to the region (Simpson, 2008: 7). Therefore, environmental organizations play a crucial role in ensuring sustainability of tourism. These roles include meeting the expectations of local people and tourists, protecting nature and the cultural environment, raising environmental awareness, local/regional/international environmental regulations, and green activities (Kennedy and Dornan, 2009: 188; Malik et al., 2020: 2). Researches also emphasize that environmental organizations have an

important place in sustainable destination management. In one study, Finnetty (2001) put forward that environmental organizations on various environmental protection issues in Belize, a Central American country, are a key factor not only in the tourism sector, but also in the development of the country. Erkuş-Öztürk and Eraydın (2010) emphasized in their study that environmental organizations act as a bridge in sustainable tourism management and that cooperation with other tourism actors is necessary for the continuity of this development. Here, environmental organizations are the most important components of sustainable destination management in terms of increasing responsible production and consumption, protecting the environment and its inhabitants, and preserving them for the future (Khan et al., 2020: 4).

There are many environmental organizations and various activities carried out by these organizations in the world and in Turkey. Sustainable Destination Council's (SDC); "Tourism For Tomorrow Awards and the United Nations Environment Program (UNEP), World Travel and Tourism Council's (WTTC); Climate and Environment Action, Future of Work and Destination Management projects, World Tourism Organization's (UNWTO); the Tourism and Sustainability Committee (CTS) is an example of these global organizations and their activities. In Turkey, the Blue Flag Program carried out by the Turkish Environmental Education Foundation (TÜRÇEV), the Environmental Awareness Campaign (Green Star) of the Ministry of Culture and Tourism, the ATAK project and the TÜRSAB - UNDP Sustainable Tourism Cooperation can be cited as examples for national organizations and their activities.

EDREMIT GULF

Edremit Gulf, located in the northwest of Turkey, is in the northeast of the Aegean Sea coasts, between the cities of Balıkesir and Çanakkale. Being one of the three largest gulfs of Turkey in terms of surface area, Edremit is connected to the Aegean Sea by the Müsellim Strait in the northwest and the Dikili Strait in the south. If we look at the natural borders of the gulf, we can see that it starts with Cape Baba, which is known as the westernmost point of Turkey, and ends with Ayvalık-Sarımsaklı in the south. In terms of administrative geography, coasts of Edremit Gulf are located within the borders of Ayvacık in Çanakkale, and Ayvalık, Burhaniye, Edremit, Gömeç, and Havran in Balıkesir (Figure 1). These provinces are also important coastal destinations and are places where domestic tourism demand is high, especially in summer. Located within the triangle of Çanakkale, Balıkesir and İzmir, the Edremit Gulf region stands out with its geographical location close to historical and cultural tourism centers such as Troy, Assos, Pergamon, Ephesus and Ayvalık. When the geographical, economic, and ecological characteristics of the 5 districts of Balıkesir province that have a coast on the Edremit Gulf are examined, the Mediterranean climate is experienced along the coastline, it is in an advantageous position in terms of transportation networks (land, sea, air, and railway), and the local economic structure depends on olive cultivation, olive oil production, trade, and tourism. Edremit Gulf, located between Mount Ida and Madra Mountains, and known for its olive oil production, has been known as the "valley of the winds" since ancient times. On the shores of Edremit Gulf, holiday resorts, olive groves, commercial areas, hotels, cultivated lands, and residential areas are merely intertwined. For this reason, it can be said that there is competition between the agriculture, tourism, and trade sectors in the gulf coasts in terms of financial resources and economic investment. Assos, Altınoluk, Küçükkuyu, Güre, Akçay on the northern shores of the heavily populated gulf, and Burhaniye, Ören, Gömeç, Karaağaç and Ayvalık on the southern shores are the main settlements of the area (Figure 1).

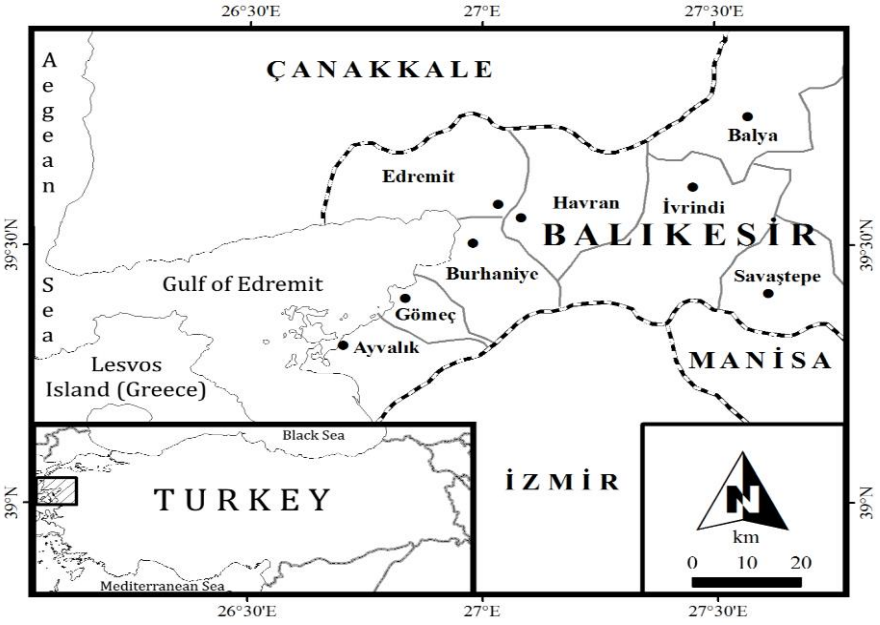

Figure 1. Geographic Location of Edremit Gulf Region (Source: Compiled by the authors)

Edremit Gulf region has a rich natural environment with its natural vegetation, endemic plant diversity, maquis species, forests containing various tree species, valleys, plains, thermal springs, and olive groves. Edremit-Mount Ida National Park (900 plant species), Ayvalık Islands Nature Park (752 plant species) Mount Ida Fir Nature Reserve, Madra Mountain (400 plant species) have unique ecosystems in terms of vegetation. Mound Ida National Park, Mount Ida Fir Protection Area, Darıdere Nature Park, Madra Mountain, Kozak Plateu, Ayvalık Islands Nature Park, Sarımsaklı Nature Park and Wildlife Development Areas are the main nature protection areas in the Edremit Gulf region (Figure 2). "Ayvalık-Şeytan Sofrası" and "Karakoç Stream" are Wetlands of Local Importance, and they have rich flora and fauna diversity. Also there are many streams and freshwater bodies in the gulf region, as well as rich, healing waters beneficial for human health. The coasts of Edremit Gulf attracts thousands of tourists every year with its natural forests, canyon valleys, waterfalls, and gulf shores, as well as monumental trees, beaches, and interesting geomorphological formations. The Edremit Gulf coasts have a rich historical and cultural heritage, and also have many cultural attractions with its historical buildings, museums and archaeological remains, rich architectural and folkloric items, traditional cultural artifacts, and colorful festivals.

According to the Address Based Population Registration System data, the total population of 5 districts in Edremit Gulf in 2020 is 337,871. The largest and most populous district of the Gulf is Edremit with a population of 161,145, while the district with the smallest population is Gömeç with a population of 15,207 (2). With its coastline of 291 kilometers, Edremit Gulf is the most important center of Balıkesir sea tourism. Balıkesir, with a population of 1.2 million people in the winter months, goes up to 3 million in the summer months thanks to tourism (Güney Marmara Kalkınma Ajansı, 2021). Although there is no clear statistical data on the number of secondary residences in the Edremit Gulf area, it is stated that this number is approximately 130,000 only in Edremit province (Avcıkurt et al., 2018: 532). It is claimed that the number of secondary residences in Ayvalık is around 60,000 (3). It is stated that there are 7,177 secondary residences in the Pelitköy district of Burhaniye (Ceylan and Somuncu, 2020: 495).

According to the statistics of the Balıkesir Provincial Directorate of Culture and Tourism's accommodation facilities with operating certificates for 2020, a total of 49 accommodation facilities with touristic operation certificates operate in Edremit Gulf. 23 of these facilities are located in Ayvalık district, 19 in Edremit distrct, 6 in Burhaniye district, 1 in Gömeç district, and there no facilities with operation certificates in Havran district (Balıkesir İl Kültür ve Turizm Müdürlüğü, 2021). Thus, it is seen that the accommodation facilities with operating certificates are mostly concentrated in Edremit and Ayvalık districts. In addition, according to the municipality and operation certified accommodation statistics of the Ministry of Culture and Tourism for 2020, the total number of overnight stays in Edremit Gulf (Ayvalık, Burhaniye, Edremit, Gömeç) in 2020, including domestic and foreign tourists, is 1,316,193 despite Covid-19. In Balıkesir this figure is 1,977,944 province, wide, and Edremit Gulf Coasts with 66.5% ranks first (Kültür ve Turizm Bakanlığı, 2021). As can be seen, the Edremit Gulf Coasts, with its natural and cultural attractions, is the busiest and most popular touristic region of Balıkesir with its accommodation facilities and the number of tourists.

OBJECTIVE AND IMPORTANCE OF THE RESEARCH

In this study, it has been attempted to determine how the environmental issues seen on the shores of Edremit Gulf are perceived by the members of the environmental organizations living in the region. In this context, the members of environmental organizations were asked what the environmental issues in the gulf area, the environmental policies developed for the environmental issues in the gulf, and the environmental protection measures in the gulf were, and the participants were asked to evaluate these protection measures. The coasts of Edremit Gulf, which show a great touristic density especially in the summer months, is one of the most important sea tourism centers of Turkey, which mostly serves domestic tourism. Tourism businesses and tourism activities may bring environmental issues or affect some regional environmental issues negatively. Therefore, in this study, how the representatives of environmental organizations, who are thought to be more sensitive to environmental issues, perceive these issues, and in line with the results obtained, various suggestions for the solutions of these issues are put forward.

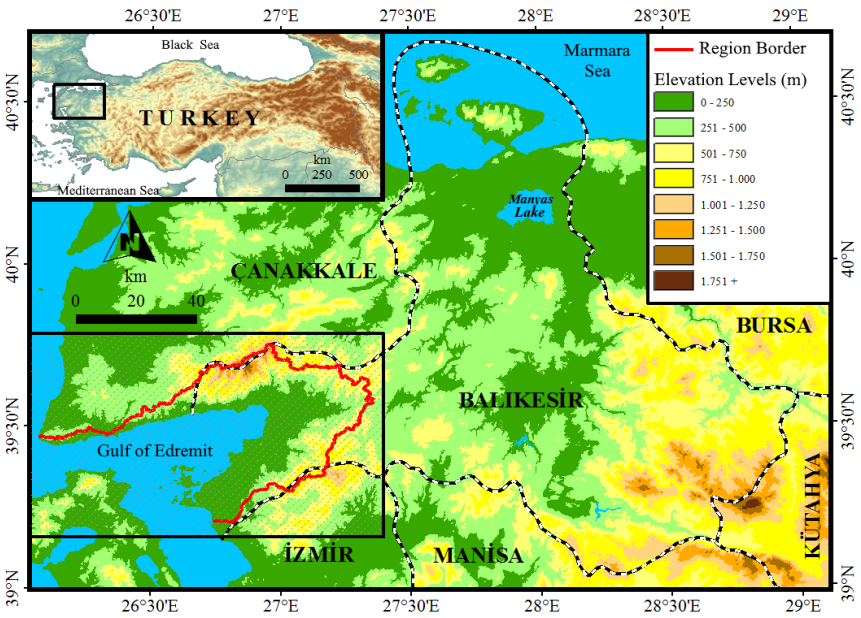

Figure 2. Physical Map of Edremit Gulf Region (Source: Compiled by the authors)

RESEARCH METHOD

In the study, it was attempted to determine the perceptions of 6 environmental organization representatives on environmental issues, operating in 5 provinces (Ayvalık, Burhaniye, Edremit, Gömeç, and Havran) located within the borders of Balıkesir and also on the coast of Edremit Gulf. For this purpose, one of the most suitable methods for in-depth information gathering, qualitative research method was used. It is possible to define qualitative research as "a research in which qualitative data collection techniques such as observation, interview, and document analysis are used; Perceptions and events are revealed in a realistic and holistic way in their natural environment" (Yıldırım ve Şimşek, 2008).

In the researches designed with the qualitative method, there is an effort to reach a deep understanding of the subject and the issues are analyzed in isolation from the ethos in which it was formed and developed. In addition, the network of relations that dominate the situations is attempted to be interpreted in its natural environment or to be revealed of their meanings (Neuman, 2012). In this study, the perceptions and thoughts of the participants, who constitute the sample of the research, were attempted to be determined. The study aims to collect data on what individuals think about the process, and data on existing perceptions (Yıldırım ve Şimşek, 2008). To collect the data, the techniques of interview and examination of written materials were used. The improbable purposive sampling method was used in this study. Therefore, in the selection of the participants, it was examined whether they were related to the research subject rather

than their power to represent the population (Neuman, 2012). Convenience sampling was chosen from the purposive sampling methods. Representatives of 6 environmental organizations in Edremit Gulf were included in the study.

Table 1. Socio-Demographic Information about the Study Group

Code of Environme. Organization	Founding Year of Environmental Organization	Number of Members of Environmental Organization	Age of Participant	Educational Background of Participant	Sex of Participant
EO1	2010	20 corporate and individual volunteer participants	40 and older	Undergraduate	Female
EO2	2017	3500	40 and older	Secondary education	Male
EO3	2017	143	40 and older	Postgraduate	Male
EO4	2019	3	40 and older	Postgraduate	Female
EO5	2018	1354	40 and older	Secondary education	Male
EO6	2012	470	40 and older	Undergraduate	Female

The identification of these environmental organizations is not specified in the study because of ethics. Each of the environmental organization representatives was given a code (EO1, EO2.....EO6). Socio-demographic information about the study group is given in Table 1. Due to the restrictions applied due to the Covid-19 pandemic at the time of data collection (10.01.2021 - 20.08.2021), some of the interviews were made over the phone, and an on-line interview form was sent to some participants. Telephone interviews lasted an average of half an hour, and the interviews were noted down. The interview technique is a powerful method in revealing perceptions, but supporting the data obtained in the interviews with written documents increases the validity and reliability of the research (Yıldırım ve Şimşek, 2008). At the same time, activity reports of the workshop, meeting, etc. of the relevant environmental organizations were also examined. The researcher who is responsible for conducting the interviews lives in the research area and this researcher has a certain level of contact with the interviewees. It is thought that this situation allows the participants to answer the questions sincerely in the data collection stage. In order to carry out the research in accordance with its purpose and to understand the concepts related to the subject correctly, an environmental issues literature review was conducted. During the analysis phase, the relevant literature was used while creating themes (Li et al., 2009; Akıncı, 1996; Keleş, 2015; Bayramoğlu et al., 2014). The data obtained at the end of the research were subjected to content analysis. Content analysis required a closer examination of the obtained data and reaching the concepts and themes that explain this data (Yıldırım and Şimşek, 2008). In addition, in the content analysis, the data that were found to be similar and related to each other were brought together and interpreted within the framework of certain concepts and themes (Altunışık et al., 2010).

FINDINGS

This study attempts to determine how the environmental issues seen on the coasts of Edremit Gulf are percieved by the members of the environmental organizations living in the region. In this context, environmental organization representatives were asked about the environmental issues in the gulf. In line with the answers received, environmental issues in Edremit Gulf are categorized as water pollution, air pollution, noise (sound) pollution, aesthetic pollution (visual pollution), waste problem, use of natural resources, ecological deterioration, land use problems, coastal use, green area losses. There are three themes in water pollution category. These are the factors that cause water pollution, the types of these factors and the affected areas. According to the data obtained from the participants, it has been revealed that the causes of water pollution are mines (iron, copper, molybdenum and gold mines), quarries, factories, landfills, debris, pesticides, wastes, inadequate treatment facilities and geothermal waters.

It has been stated that the waters of Madra Stream and Karakoç Stream are polluted due to the iron ore enrichment works in Karaayıt village. Participants such as EO2, EO4 and EO6 emphasized that a gold mine has the potential to contaminate all surface and underground water resources in Madra Mountain. It has been shown that the water coming from Eybek Mountain and flowing in the fountains in the city is polluted for various reasons, and the copper and molybdenum mine in Tepeoba, located on the route, is the reason for this. It was stated by some participants that olive pomace oil[1] and small industrial factory wastes pollute the streams and sea waters in some parts of the Edremit Gulf (EO1, EO2, EO4). According to the information obtained from the participants, the wastes that cause water pollution are categorized as domestic wastes, wastes of sea transportation vehicles, sewage wastes and industrial wastes.

According to the information obtained from the participants, the factors causing air pollution in Edremit Gulf were categorized as factories, burning coal and olive pomace oil in winter, gold mine operations, thermal power plants, exhaust gases and fires (landfill and forest fires). Some of the participants stated that there is air pollution from olive oil factories in some regions in Edremit Gulf and that the residential areas near these factories are affected by this (Table 3). Some participants stated that the coal and olive pomace oil burned in the winter had a negative impact on some residential areas (EO1, EO3, EO6). In addition, it was stated that the gold mine operations in the region caused air pollution and the families living in the villages close to the mine site were adversely affected, especially in terms of productivity, due to the dust from the works in the mine area (EO2, EO6). In addition, it has been revealed that air pollution (smoke and ash) originates from the thermal power plant in the neighboring province. It was stated by some participants

[1] **Olive pomace oil** is obtained from olives. It is obtained by refining the olive oil remaining in the olive pomace with chemical solvents and other different chemical processes after the first pressed natural extra virgin oil is obtained from olives. Olive pulp (pomace) is a by-product of the extra virgin olive oil production process. Olive oil is squeezed by cold pressing method, and olive pomace oil is squeezed by hot pressing method (http://www.selinyag.com.tr/79_pirina-yagi-rafine-prina-yagi)

that during the summer period, population growth problems caused by tourism activities and air pollution caused by exhaust gas, landfill and forest fires also create negative environmental consequences (Table 3).

Table 2. Water Pollution on the Coasts of Edremit Gulf

	Causes	Type	Affected Areas	Environmental Organization
Water Pollu-tion	Mines	Iron Ore Enrichment (BİLFER) (Karaayıt Village)	Madra Stream Karakoç Stream	EO1, EO4, EO6
		Gold Mine	Madra Mountain	EO2, EO4, EO6
		Copper and Molybdenum Mine	Water coming from Eybek Mountain and flowing out of taps in the city	EO5, EO6
	Quarries		Underground and surface waters	EO1, EO2
	Factories	Slow flowing water left by the Olive Pomace Factories	Nikita Stream - Gömeç	EO1, EO4
		Small industrial factories	Streams and seas	EO2, EO4
	Landfills		Underground and surface waters	EO1
				EO1
	Random Disposal of Debris		Underground and surface waters	EO1
	Pesticide Use		Underground and surface waters	EO1, EO6
	Waste	Domestic Waste	Sea	EO2, EO6, EO4
		Marine transportation vehicle waste	Sea	EO6, EO1
		Sewage Waste	Streams and seas	EO6, EO1
		Industrial Waste (Animal and Factory Waste)	Sea, Havran Stream	EO2, EO4, EO6
	Inadequacy of Waste Treatment Facilities		Underground and surface waters	EO3
	Geothermal Waters		Streams	EO3

Table 3. Air Pollution on the Coasts of Edremit Gulf

	Causes	Affected Areas	Environmental Organization
Air Pollu-tion	Factories	Residential areas near olive oil factories	EO1, EO5
	Burning Coal and Olive Pomace Oil in Winter	Residential areas, especially Küçükkuyu	EO1, EO3, EO6
	Gold Mine Operations	Plateaus and villages close to mining sites	EO2, EO6
	Thermal Power Plant	Residential areas near Thermal Power Plant	EO3
	Exhaust Gas (Summer season population)	Gulf coast settlements	EO6
	Fires (Landfill and Forest Fires)	Gulf coast settlements	EO6, EO3

Table 4. Noise (Sound) Pollution on the Coasts of Edremit Gulf

	Causes	Environmental Organization
Noise Pollu-tion	Loud music in entertainment venues	EO1, EO6
	Loud music in accommodation establishments	EO1
	Loud music and noise from recreational crafts	EO1
	Horns of motor vehicles in traffic	EO1, EO6
	Loud music from cars and passenger vans	EO1, EO5, EO6
	Loud shouting of peddlers	EO1
	Motorcycle noise	EO5
	Roaming of trucks and heavy tonnage vehicles in the city	EO5

Table 6. Waste Issue on the Coasts of Edremit Gulf

	Causes	Environmental Organization
Was-te Issue	Discharge of waste into the sea	EO1
	No separation and no recycling in garbage collection	EO1, EO4, EO6
	Uncontrolled discharge of bilge wastes from fishing boats	EO1
	Sewer leaks	EO1, EO3
	Insufficiency of liquid waste sewers and collectors	EO3
	Mixing of sewer and rainwater conduits	EO3
	Solid wastes being collected without separation and transported by trucks to the city center	EO3
	Failure to rehabilitate old landfills	EO3, EO6
	Constant fires in old landfills	EO3, EO6
	Waste management issue	EO4, EO6
	Stacking of industrial wastes on the soil in the open area and slow flowing water from olive production being left unfiltered in the channels	EO4
	Inadequate central wastewater treatment plant despite population growth	EO4
	Dumping debris by the local government to wetlands with high bird populations	EO4

Table 5. Aesthetic Pollution/Visual Pollution on the Coasts of Edremit Gulf

	Causes	Environmental Organization
Aesthetic Pollution/ Visual Pollution	Advertising and workplace signs	EO1, EO6
	Allowing tall buildings on the coastline	EO1, EO6
	Power lines passing through residential areas	EO1
	Neglected visual of public and local administration buildings	EO1
	Garbage containers	EO1
	Parking lots in residential areas	EO1
	Unplanned urbanization near the ancient city of Adramytteion	EO2
	Slums and unplanned structuring	EO2, EO3
	Random parking in the streets due to the lack of parking lots	EO5
	Disordered sales stands set up on the streets in summer	EO6

According to the information obtained from the representatives of environmental organizations participating in the research, it has been revealed that noise pollution in residential areas in Edremit Gulf is caused by the noise coming from

entertainment venues, accommodation establishments, recreational crafts, and motor vehicles, and sometimes the shouting of peddlers. Participants put forward various factors that cause aesthetic/visual pollution in Edremit Gulf. These are advertising and workplace signs, tall buildings along the coastline, power lines, neglected public and local administration buildings, garbage containers, unplanned urbanization, unplanned buildings near some ancient cities, random car parking in streets and disordered sales stands. Some participants stated that power lines that are not underground cause visual pollution (Table 5).

Participants stated that there are various waste problems in residential areas in Edremit Gulf. One participant (EO1) stated that wastes are discharged into the sea especially in central neighborhoods of Ayvalık. Some participants, on the other hand, claimed that industrial wastes were piled up on the soil in the open area in Gömeç in the gulf, the slow flowing water from olive production was left unfiltered in the channels (EO4), and there was no separation and recycling in garbage collection (EO1, EO4, EO6). It has been suggested by some participants that there is a waste management problem in Gömeç (EO4). Some participants stated that the bilge wastes of the boats are thrown into the sea in an uncontrolled manner in Edremit Gulf, there are sewage leaks in some places, and the liquid waste sewers and collectors are insufficient (EO1). Other waste problems expressed by the participants (EO3, EO6) are the mixing of sewer and rainwater conduits, the collection of solid wastes without separation and transporting them with trucks to the city center, the failure to rehabilitate old landfills, and the constant fires in old landfills (Table 6). One participant (EO4) claimed that despite the rapid population growth, the central wastewater treatment plant was insufficient and the wetlands with high bird population were used as debris dumping sites by the local government. Participants interviewed within the scope of the research claimed that there are some issues related to the use of natural resources. One participant (EO1) stated that the unsensible use of pesticides and artificial fertilizers in agricultural areas caused soil pollution, and excessive irrigation in agricultural areas led to salinization of the soil and increased PH value (Table 7). This participant also stated that the presence of prospecting areas in water basins causes the waters to be under the threat of exposure to heavy metals, and the storage of the waste from the mines in the pasture areas brings the invasion of the pasture areas. It is stated in the issues related to the use of natural resources that uncontrolled fishing in the seas causes the deterioration of marine ecology. It has been argued by some participants that the zoning of olive fields, pastures and other agricultural areas to structuring leads to the destruction of green areas, while man-made fires in Nature Parks and forest lands, and the zoning of registered wetlands to housing and settlement leads to the destruction of natural areas (Table 7).

Table 7. Use of Natural Resources on the Coasts of Edremit Gulf

	Causes	Conclusion	Environmental Organization
Use of Natural Resources	Unsensible use of pesticides and artificial fertilizers in agricultural areas	Soil contamination	EO1
	Excessive irrigation in agricultural areas	Salinization of the soil and increase in PH value	EO1
	Prospecting areas in water basins	Heavy metal exposure threat to waters	EO1
	Storing the waste from the mines in the pasture areas	Invasion of pasture areas	EO1
	Pollution of sea waters	The salt of the facility, which obtains it from the sea, beginning to smell	EO1
	Wild hunting in the seas (tripang)	Disruption of marine ecology	EO1
	Zoning olive fields, pastures and other agricultural areas for structuring	Destroying green areas	EO1, EO2, EO4
	Man-made fires in Nature Park and forest lands	Destruction of natural areas	EO1
	Zoning of registered wetlands to housing and settlement	Destruction of natural areas	EO2

Participants claimed that ecological degradation had some negative consequences. One participant (EO1) stated that foreign (invasive) species have been detected in the seas, sea grass, shellfish, and red corals that maintain marine ecology are endangered due to marine pollution, the plant pattern has changed due to agricultural policies, the yield of the stone pines in the region has decreased considerably, and the covered olive green areas are under threat due to structuring. Another participant (EO3) argued that Wind Power Plants (WPP) were built in forest lands, dams disrupted the local climate balance and humidity, and the extensions of the Mount Ida ecosystem on the coasts, the reeds, were destroyed.

Table 8. Ecological Deterioration on the Coasts of Edremit Gulf

	Types	Environmental Organization
Ecological Deterioration	Sea grass, shellfish and red corals that maintain marine ecology are endangered due to marine pollution	EO1
	Foreign (invasive) species detected in the seas	EO1
	The yield of stone pines in the region has decreased considerably	EO1
	Vegetation pattern has changed due to agricultural policies	EO1
	Covered olive green areas are under threat due to structuring	EO1
	The dams considered in the region increase the annual average temperature by 2-3 degrees	EO1
	Wild irrigation is happening in agricultural areas	EO1
	Destruction of the extensions of the Mount Ida ecosystem on the coasts, the reeds.	EO3
	Dams disrupt the local climate balance and humidity	EO3
	Construction of Wind Power Plants (WPP) in forest lands	EO3
	Increasing number of mining operations in mountainous areas	EO3
	Bat species are at risk of extinction due to the disturbance during the construction phase of Havran Dam	EO5

It was also stated by another participant (EO5) that bat species are at risk of extinction due to the disturbance during the construction phase of Havran Dam. In line with the information obtained from the participants, it has been emerged that there are some land use issues in the gulf region.

These are the increase in structuring due to the increase in the population of the city, the division of agricultural lands into small pieces and the loss of production value of agricultural areas, the use of sea coasts as land arrangements, the structuring that is not suitable for earthquakes and the granting of high-rise zoning permits for areas with soil liquefaction, fault lines not being processed on the current zoning plans, olive grove areas in the form of construction and settlement (Table 9). Other land use issues are open pit mines and quarries not being rehabilitated when they are abandoned, housing built on archaeological remains, a Prospecting Pool built on archaeological remains, the ancient city in the village of Havran Tepeoba being invaded by treasure hunters and being in danger of disappearance, the zoning of agricultural areas, forests and pastures to construction, mining and energy investments.

Table 9. Land Use Issues on the Coasts of Edremit Gulf

	Types	Environmental Organization
Land Use Issues	The increase in structuring due to the increase in the urban population	EO1, EO6
	Division of agricultural lands into small pieces and loss of production value of agricultural lands	EO1, EO3
	The use of coasts in the form of land arrangements	EO2
	Granting high-rise zoning permits for buildings that are not suitable for earthquakes and for soil liquefaction	EO3
	Failure to process fault lines on current zoning plans	EO3
	Zoning olive groves to housing and settlement	EO3, EO6
	Failure to rehabilitate abandoned open pit mines and quarries	EO3
	Housing on archaeological remains	EO3
	Construction of the Prospecting Pool on the archaeological remains	EO3
	The ancient city in the village of Havran Tepeoba being under the invasion of treasure hunters and being in danger of disappearance	EO5, EO6
	Zoning of agricultural areas, forests and pastures to construction, mining and energy investments	EO6

Table 10. Coastal Use Issues on the Coasts of Edremit Gulf

	Issues	Environmental Organization
Coastal Use	Frequent filling of coastlines to increase settlement area	EO1
	Actions and unplanned structuring disrupting the coastlines	EO1
	Decreased quality of life due to increased migration to coastal cities	EO1, EO6
	Allocating the beaches to private property and preventing the public from benefiting from the coasts	EO6
	Structuring that does not fit the coastline	EO6
	Inadequacy of the open to public areas with infrastructure towards public need	EO6

Table 11. Green Area Losses on the Coasts of Edremit Gulf

	Issues	Location	Environmental Organization
Green Area Losses	Fires caused by humans or electric wires	Ayvalık Islands Nature Park and Madra Mountain	EO1
	Logging done by mining and quarry companies in the region	Gulf	EO1
	Zoning of high quality olive lands for housing	Gulf	EO3
	Destroying calabrian pine forests to make olive groves	Gulf	EO3
	Concretion in coastlines and destruction of green areas	Coastlines	EO3
	Pollution and zoning of old pastures	Gulf	EO3, EO6
	Damage done by the gold/copper mines and quarries to agricultural lands	Havran and its surroundings	EO5, EO6
	Due to the increase in WPPs, the villagers being disturbed and leaving the agricultural and arable fields	Kocadağ (Hacımahmutlar settlement), Karalar Village, Eybek Mountain	EO5
	Very few areas allocated to green areas in zoning regulations		EO6

Representatives of environmental organizations participating in the research claimed that there are some issues related to coastal use in Edremit Gulf (Table 10). These are the frequent use of fillings of coastlines to increase settlement and economic areas, the actions and unplanned structuring that disrupt the coastline texture, the decrease in the quality of life due to the increase in migration to coastal cities, the allocation of beaches to private property and the prevention of people's use of the coasts, the structuring that does not comply with the coastline, and the inadequacy of the open to public areas with infrastructure towards public need. Participants stated that some activities carried out in the gulf region cause green area losses (Table 11). These activities include fires caused by humans or electric wires, logging done by mines and quarries in the region, the zoning of very high quality olive lands for housing, the destruction of calabrian pine forests to open new olive groves, concretion and ugly structuring in coastlines, pollution and zoning of old pasture lands, the damage done by the gold/copper mines and quarries to agricultural lands, villagers being disturbed due to the increase in WPPs and leaving agricultural and arable fields, and very few areas allocated to green areas in zoning regulations. Participants were asked to evaluate environmental policies developed for environmental issues in the

gulf, if there were any. One of the participants (EO5) did not want to answer this question. 4 participants stated that there was no policy developed, but non-governmental organizations made an effort regarding this issue (Table 12).

Table 12. Environmental Policies Developed for Environmental Issues on the Coasts of Edremit Gulf

Environmental policies developed for environmental issues in the Gulf	Yes	No	Trying Institution	Type
EO1		+	Non-Governmental Organization	Mount Ida and Madra Workshop
EO2		+		
EO3	+			Local governments and central institutions have separate environmental policies. There is no coordination.
EO4		+		
EO6		+	Non-Governmental Organizations	

One participant stated that local governments and central institutions and organizations have separate environmental policies for environmental issues in the gulf, but there is no coordination. The participants were asked about the environmental studies they have done in Edremit Gulf and what their solution proposals were for environmental issues. One of the participants (EO4) did not answer this question. Environmental organization members participating in the research organized various workshops and conferences, developed projects, prepared scientific reports, conducted environmental trainings and various activities in cooperation with various institutions to solve environmental issues. It was emphasized that instead of making efforts separately for the provinces in the gulf for the solution of environmental issues, the environmental issues of all provinces should be resolved as a unit, with a common mind.

Table 13. Studies on Environmental Issues on the Coasts of Edremit Gulf

	Environmental Organization	Studies
Studies on Environment	EO1	• First and Second Mound Ida Workshops • Madra Mountain Workshop • Zero Waste Project • Climate Change Project • Red Corals Project • Ayvalık Islands Nature Park • Sustainable Energy Workshop • Environmental Cleaning with National Education Schools and Ayvalık Municipality • Increasing Ecological Culture and Environmental Education in Schools • Forest Fire Prevention Training
	EO2	We organize panels, scientific meetings, walks on days such as 22 March World Water Day, 5 June World Environment Day. We are trying to prepare reports on ecological problems in our region. Especially in recent years, we have started to act together with all environmental organizations in Edremit Gulf and to establish a communication network. We are trying to solve the issues with a common mind with unity.
	EO3	In May 2018, we prepared our joint report titled "Our Opinions and Suggestions Regarding the Edremit Gulf Issues" for the Marine and Coastal Workshop; In July 2018, we organized the "Edremit's Environmental Issues and Solution Proposals" conference; In February 2019, we organized the "Edremit Gulf Environmental Plans and Policies" conference with the Chamber of Geological Engineers; In January 2019, we prepared a very detailed "Environmental Local Government Declaration"; As a result of a massive petition campaign for the coordination of the Gulf Master Plan and institutions, we ensured that the first "Gulf Environment and Climate Change Workshop" was held, Now we await the final report and the second and third workshops.
	EO5	We are trying to raise public awareness by organizing protests and petitions for the gold mines around us, together with our immediate environmental groups. In 2019, we started a petition in Havran marketplace on Friday, 2 August to make our voices heard against the Büyükşapçı Demirtepe gold mine operators in Havran center. As a result, we were informed that the project was canceled by the ministry. In the same year, we organized an environmental and cultural tour for 75 people with groups operating in Edremit Gulf in order to see the negative effects of the mines around us more closely.
	EO6	They organize workshops, panels, conferences, prepares reports, and file lawsuits on environmental issues. They conduct social media campaigns to raise awareness. They organize an Eco-Festival every year with a selected theme.

CONCLUSION

With the industrialization in Turkey, internal migration from rural areas to cities has accelerated in the last half century, unhealthy urbanization and rapidly increasing urban population have led people to more touristic activities. The intensification of tourism activities on the coastlines has caused some environmental issues in these regions. In this study that examines how the environmental issues experienced on the coasts of Edremit Gulf are perceived by the representatives of environmental organizations, it has been revealed that there are deficiencies in the practices in the solution of environmental issues, although there are various regulations regarding environmental issues (Ekeman, 1998; Arat, 1998).

The fact that those who negatively affect the environment and those will protect the environment are both humans, constitutes one of the biggest difficulties of environmental issues (Keleş, 1994: 279). The data obtained from the study show that the main causes of environmental issues are industrialization, urbanization, wrong land use, technological

developments and rapid increase in touristic activities. Environmental issues on the shores of Edremit Gulf include water pollution, air pollution, noise (sound) pollution, aesthetic pollution (visual pollution), waste issue, use of natural resources, ecological deterioration, land use issues, wrong coastal use and loss of green areas. Mining activities, quarries, factories, landfills, debris, pesticides, domestic and industrial wastes, inadequacy of treatment facilities, geothermal waters are among the main causes of water pollution in the region. Factors causing air pollution are factories, burning coal and olive pomace oil in winter, gold mines, thermal power plants, exhaust gases from motor vehicles, and fires. It has been revealed that noise pollution in residential areas in Edremit Gulf is caused by loud music coming from entertainment venues, accommodation establishments, recreational crafts, and cars, vehicle horns in traffic, the noise coming from motorcycles, trucks, and heavy tonnage vehicles, and shouting of peddlers.

Participants suggested various factors that cause aesthetic/visual pollution in the gulf. These are advertising and workplace signs, high-rise buildings on the coastline, power lines, neglected public and private administration buildings, garbage containers, unplanned urbanization, unplanned structuring near some ancient cities, random parking in the streets, and disordered sales stands. According to the information obtained from the environmental organizations participating in the research, it has been revealed that there are issues encountered in the use of waste and natural resources on the coasts of Edremit Gulf, that ecological deterioration has begun, that there are problems in land and coastal use, and that there are green space losses. In this study, it was concluded that environmental organizations made various efforts to solve environmental issues, but these were insufficient. It was emphasized that the relevant units should act as a whole rather than working separately in the solution of environmental issues on the coasts of Edremit Gulf.

In the light of the results of this study, the following suggestions can be made to local administrators and political officials:

- In order to ensure sustainable destination management in Edremit Gulf, a tourism model should be developed according to the unique characteristics of the region,
- Successful studies in the world on sustainable destination management should be taken as an example, and and the indicators developed by the World Tourism Organization for sustainable destination management should be taken as a basis in the planning to be made,
- According to Buhalis (2000), the sustainability of a touristic destination depends on components such as local people, executives, operators and visitors. A serious "stakeholder cooperation" should be ensured with the participation of all stakeholders in sustainable destination management plans in the region and especially environmental organizations should be carried out in cooperation,
- To have the tourism activities in the region not only as sea tourism, sustainable tourism types should be increased in the region, new alternatives should be developed by making appropriate plans, and more eco-festival, fair, and international art/sports organizations should be organized,
- Solid waste storage and waste treatment systems and water treatment facilities in the region should be increased,
- Long-term city policies and strict control rules should be implemented by local governments in order to prevent aesthetic/visual pollution in the region and improve the architectural appearance of the region,
- In order to minimize the noise pollution in the region, restrictions should be imposed on accommodation, entertainment businesses and recreational crafts, the horns of the cars, the music of the vehicles in the traffic, and peddlers,
- In order to protect and improve the coastal areas of the region, the natural appearance of the coasts should be protected by restricting any action that disrupts the coastline or unplanned structuring on the coasts,
- In order to solve the water and air pollution and waste problem in the region, treatment systems should be made mandatory especially for industrial facilities,
- In order to reduce the air pollution in the region, the inspections of the existing industrial enterprises regarding the "Industrial Air Pollution Control Regulation", such as the use of filters, should be increased,
- In order to measure and minimize the negative environmental effects of tourism activities in the region, environmental impact assessment studies should be increased,
- The production of renewable energy sources in the region should be increased,
- In order to protect green areas and olive groves, zoning of the green areas in the region should be prevented and the number of green areas should be increased,
- Instead of large-scale, huge tourism facilities in the region, the construction of small-scale, authentic-looking simple accommodation units suitable for the regional architecture and nature should be encouraged,
- Accommodation businesses in the region should be encouraged to operate in sustainable tourism with such as ecological facilities, green hotels, environmentally friendly hotels, green star, white star,
- In order to prevent ecological deterioration and land use problems, the development and promotion of ecological agriculture should be provided to the people of the region through various trainings or different practices,
- Various "green projects" should be created in rural areas in order to ensure both the rural development and sustainable destination management of the region and the participation of the local people in sustainable tourism. Villages that meet the sustainability conditions in the region should be promoted with the title of "eco-village", "nature friendly village", and a holistic touristic promotion of the region should be created.

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Article history: Received: 22.11.2021 Revised: 28.01.2022 Accepted: 22.02.2022 Available online: 15.03.2022