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A research at sustainable urban scale: example of Çanakkale

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Abstract The aim of the study is to assess the renewability of the urban texture in Çanakkale, to recycling and renewable energy resources within the scope of sustainability of physical, ecologic, and social life cycles. Urban development is revealed in concepts like ecologic, smart, sustainable, and green town for town concepts. Within the framework of sustainable town approaches, this study assesses Çanakkale at the point of green space planning; urban solid, gas, and liquid waste management and planning; and recycling of agricultural waste by researching cyclical operations and processes and literature studies. Additionally, SWOT analysis is performed on the rapidly changing and developing sustainable structure in Çanakkale with attempts made to develop recommendations about the status in the near future. The study is important as no similar study has been performed in Çanakkale and in terms of partly illuminating the potential of the town as a sustainable town. The green space per person of 3.05 m^2 is well below the standards and is indicated as one of the leading results within the scope of the study. This situation makes it mandatory to increase planning for esthetic and functional green space within the town in general. Additionally, the water sample after treatment in the wastewater treatment plant had total suspended solid matter of 29 mg/L and was identified at ideal levels. Chemical and biochemical oxygen demands provided similar results. As a result, it was revealed that river water does not represent a risk in terms of human health. Within the scope of notable points, with multiple management and planning strategies, rational steps should be taken about renewability and recycling of solid, liquid, and gas wastes. Rational use of all natural and cultural resources by administrators and local government with cooperation of non-governmental organizations will improve the current conditions in Çanakkale and make considerable strides to becoming a sustainable city.

Keywords Çanakkale · Turkey · Ecocity · Sustainable city · Renewable energy · Recycling

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Introduction

Currently, we see cities as a stage for variation and development in terms of expectations within the scope of renewal, transformation, and dynamics. Especially in the recent years, in parallel with the development of digital technologies, approaches about planning within a multiparticipatory understanding of administration are currently a sign that cities will not be left to themselves (Kaygısız et al. 2017; Baloguna et al. 2020). Examples of these important developments in the urban concept can be noted in concepts like ecologic city, smart city, sustainable city, and green city. For development of towns, factors like primarily population projections, population structure, climate, and natural and geographic structure should be noted. In this development process, shaping of urban structure remains linked to esthetic and functional elements, with great place and importance given to perceptions and thoughts of population groups about administration (Alkan and Kelkit 2019). Within this scope, green space planning comes to the forefront (Cengiz et al. 2014; Aklibasinda 2019). Inclusion of population groups in the planning and design processes of public areas like sports areas, children's playgrounds, neighborhood parks, and urban parks involves rational development (Kaygısız et al. 2017). Additionally, development of smart strategies to meet the town's requirements in the long term within the scope of renewable, developable, and transformation of a town's resources like nature, culture, ecology, geography, and agriculture is unavoidable at the point of sustainability (Köseoğlu and Demirci 2018). Within this scope, drinking and utility water, the foundation for public health, should be provided continuously and obtained based on hygiene rules. The town's wastewater treatment facilities should provide continuity based on sufficient and recycling working principles and should be a priority for all public and civil organizations and institutions. Within the scope of integrated solid waste storage facilities, inclusion of units like separation, collection, compost, biofuel, stored gas energy, and seepage water treatment will increase the quality of life for the townspeople and, thus, mean that it has the quality of being a livable town (Uçar et al. 2017). Additionally, rational use of ecologic factors like solar, wind, soil, and water resources with applications like renewal and recycling will provide positive contribution and feedback to the town and townspeople (Alkan and Uzun 2016). Within the scope of all these processes, the town components of Çanakkale were researched in place and within the scope of the literature. An attempt was made to support the qualities/information available in relation to these processes with photographs. Additionally, within the framework of sustainable town approaches, this study performed SWOT analysis of Çanakkale in an attempt to develop recommendations about the current status of the city and status in the near future.

Material and methods

The areas of the study based on ecocity, green city, and sustainable city approaches for the Çanakkale urban area were determined as Kepez Wastewater Treatment Plant located in Kepez, Çanakkale Drinking Water Treatment Plant, Çanakkale Advanced Biological Wastewater Treatment Plant, Solar Energy Power Plant and Çanakkale Regulated Waste Storage Facility. Additionally, areas with renewable, recycling, and bioenergy utilization possibilities within the urban structure were included. For this, explanatory photographs, photographs from Google Earth, and metric values from 1/1000 scale Implementation Development Plan obtained from Çanakkale Municipality were used. The locations are included in Figs. 1 and 2 and are listed as follows: Çanakkale Advanced Biological Wastewater Treatment Plant and Solar Energy Power plant 40° 8′ 33.22–40° 8′ 23.50 latitude north, 26° 28′ 22.06–26° 28′ 7.21 longitude east; Kepez Wastewater Treatment Plant 40° 5′ 47.21–40° 5′ 43.00 latitude north, 26° 22′ 55.75–26° 22′ 50.76 longitude east; Çanakkale Solid Waste Regulated Storage Facility 40° 10′ 41.21–40°10′ 23.81 latitude north, 26° 32′ 55.91–26° 32′ 32.16 longitude east; and Çanakkale Drinking Water Treatment Plant 40° 9′ 12.71–40° 9′ 10.33 latitude north, 26° 26′ 41.84–26° 26′ 37.34 longitude east. In this study, SWOT analysis was performed for these facilities about the sustainable and ecologic values of the city (wind, water, air, and solar) supported by available data and visual aids with recommendations developed in line with assessments.

Results

Sustainability may be provided by survival of the town linked to variation and development that is not externally dependent. Within this scope, the strategy of towns



Fig. 1 Geographic location of Çanakkale province (adapted from Google Earth 2020)

for efficient, renewable, and recycling use of their resources is important. This study dealing with the Çanakkale urban area from this aspect reached the following information and findings. Çanakkale Drinking Water Treatment Plant covers a 4-decare area including the administration building and is shown in Fig. 3. Area calculations were calculated from Google Earth 2020. With an important place in terms of public health, the facility is nearly 12 km from the town and operated by evaluating river water sourced in Kazdağları (Mt. Ida) flowing into Atikhisar Dam Lake. The importance of the facility in meeting the drinking and utility water needs of the town makes it irreplaceable. Under these conditions, there is the possibility of meeting the town's water needs in the long term.

Within the potential of renewable energy sources, integrated photovoltaic systems were installed in an area of approximately 13 decares as seen in Fig. 4; it was



Fig. 2 Geographic locations of wastewater treatment plants in Çanakkale province and Kepez, solid waste regulated storage facility, and drinking water purification plant (adapted from Google Earth 2020)

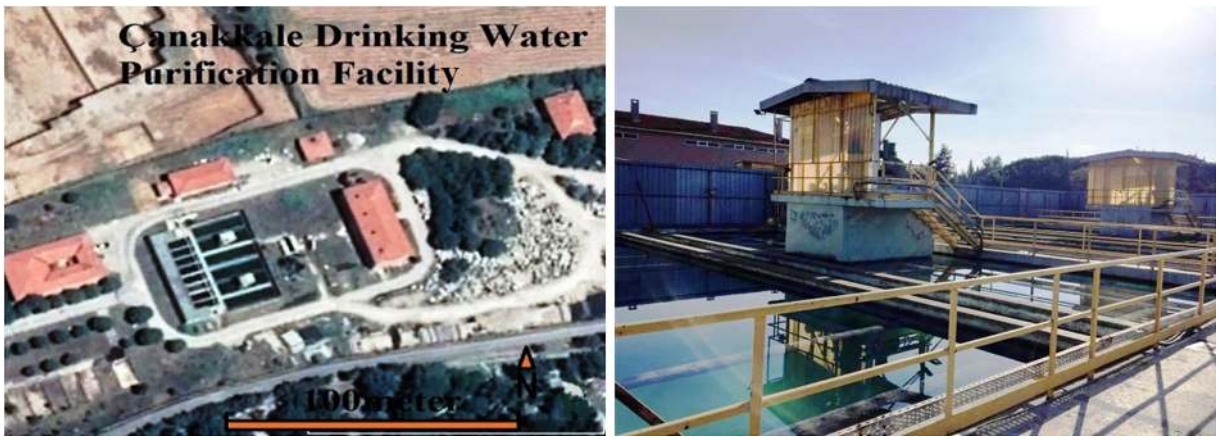


Fig. 3 Geographic location and photographs of Çanakkale drinking water purification facility (adapted from Google Earth 2020)

revealed as an exemplary use of a solar power plant. The area calculations are taken from Google Earth 2020. This facility, adjacent to the Çanakkale Advanced Biological Wastewater Treatment Plant, meets electrical energy requirements for the treatment plant with excess electricity evaluated in different savings by the local administration. Increases in these approaches are important in terms of sustainability of the city (Fang et al. 2020). With the same calculation (Google Earth 2020), the Çanakkale Advanced Biological Wastewater Treatment Plant covers nearly 35-decare area and is shown in Fig. 4. Technical processes based on the principle of disposal of harmful bacteria by beneficial bacteria (biological intervention) obtain two different products of water and sludge (sediment) as a result of wastewater separation processes. The sludge is sent to different



Fig. 4 Geographic location of Çanakkale Advanced Biological Wastewater Purification Facility and Solar Energy Central (adapted from Google Earth 2020) and photographs

Table 1 Analysis results of sample from treated wastewater discharged into the Sarıçay canal from Çanakkale Wastewater Treatment Plant

Test report				
Sample analysis results				
Analyzed parameters	Analysis date	Analysis method	Analysis result	Limit value
Biochemical oxygen demand (mg/l)*	29 Jan. 2020	SM 5210 B	20.3	25
Chemical oxygen demand (mg/l)*	24 Jan. 2020	SM 5220 B	89.2	125
Total suspended solid matter (mg/l)*	25 Jan. 2020	SM 2540 D	29.6	35

*Indicated parameters encompass analyses included in accreditation

cities for use. Sludge is sent to different major cities such as Izmir in Turkey and is assessed as "solid fuel/biomass" or "fertilizer additive." This point brings a strong detail to the forefront that will strengthen Çanakkale town. It is necessary to determine different strategies to use the sludge within the town. Rather than releasing the water into the Sarıçay river which divides the city into two, different plans may be developed by Çanakkale local administration in line with different water resources or alternative water uses.

The analysis results from treated water samples after solid wastewater treatment processes are given. From the analysis results, it was found that the discharge of the treated water into the Sarıçay would not cause pollution of water in the river. Within this scope, the analysis results found total suspended solid matter (mg/L) amount was 29 (max limit: 35), while it is significant that the biochemical oxygen demand and chemical oxygen demand levels were identified within acceptable limits (Table 1). It may be concluded that the river water does not represent a risk factor in terms of public health. The lack of negative effect of solid waste water on the river water will allow the opportunity to use the river water in agricultural and industrial areas and also as a renewable energy resource (Anonymous 2020).

GEMAR Environmental Analysis Laboratory/ Kepez-Çanakkale - Çanakkale Municipality Wastewater Treatment Plant Wastewater sample, sample coordinates: X: 40,14000; Y: 26,47000; Sample retrieval method: Composite sample (24 hours): TS ISO 5667-10, sample date: 24.01.2020; Report No: 2020/154; Report date: 13.02.2020 (Anonymous 2020).

The Kepez Wastewater Treatment Plant located in Kepez central town in Çanakkale was identified to occupy an 8-decare area including the administration building (calculated from Google Earth 2020). The facility based on biological intervention meets the wastewater needs of the town, and onsite investigations are shown in Fig. 5. The recycling of the water and sludge portions separated by the wastewater treatment is noted to be insufficient. Hence, the necessity to develop policies within the scope of alternative uses for water and sludge was clarified for sustainability of the city.

As seen in Fig. 6, pellet/granule samples can be obtained from different materials by using portions remaining after forestry products have been processed. These examples are among the important developments in terms of recycling for bioenergy (solid fuel). The SEBA Forestry Product Processing Operation in Çanakkale Organized Industrial Zone uses 100% *Pinus brutia* (Calabrian pine) for pellet production. The produced wood pellets have international "ENplusA1" certificate, and properties are given in Fig. 6. The operation uses pure forestry products like sawdust, wood, wood chips, and board by subjecting them to grinding, drying, and high-compression processes to produce high-calorie biofuel. The pellets in Fig. 6 are made from olive pulp, straw, sawdust, and grass pellets. With an important place in recycling of solid waste, this and similar operations should be developed for different agricultural branches and are important in terms of Çanakkale being an ecocity and for sustainability.

Çanakkale Solid Waste Regulated Storage Facility seen in Fig. 7 contains a mechanical separation unit, alternative fuel unit (biofuel), compost unit, seepage water treatment unit, storage gas energy unit, collection-admission unit, and container unit. Operation of the integrated facility produces secondary raw material from waste, alternative fuel, energy from stored gas, and compost and the income contributes to financing waste management. A very limited capacity for drop-off



Fig 5 Geographic location of Kepez Wastewater Purification Facility (adapted from Google Earth 2020) and photographs

banks for domestic, agricultural, industrial, and recyclable packaging waste was identified in the urban texture. There is scattered enforcement of recycling with separate waste collection according to type and separation of mixed waste throughout the urban area. In line with the data obtained from the facility, the facility has (zero) waste planning by increasing separation potential and this will ensure an increase in the capacity of the storage area. Within the scope of solid waste management, integration of collection, transport, preliminary processing, recycling, and disposal processes are encountered as an important finding at the point where a smarter and more sustainable approach could be displayed within the urban area. Çanakkale municipality is engaged in a



Fig. 6 Types of pellets (biomass/solid fuel) made from forestry products (olive pulp, straw, sawdust, grass, and wood pellets, in order) (Anonymous 2020c)

recycling activity via the private sector (Suez Çanakkale RR company) at the point of domestic, agricultural, industrial, and other solid waste management, though only recently. In fact, currently, Suez Çanakkale RR company still continues field planning so there is not much information about this topic. However, the expectations of the local structure are high. Within the scope of the processes, mechanical separation, alternative fuel, compost facility, leak water treatment facility, improvement of storage site, stored gas energy facility, collection vehicles, collection centers and containers are included (Anonymous 2018a).

The headings analyzed as strong and weak aspects, along with opportunities and threats, in relation to operations in the sustainable urban texture of Çanakkale are stated in Table 2 in the scope of SWOT analysis.

Discussion and Conclusions

Considering nearly half of the global population of the earth live in cities, the importance and place of digital technologies and widespread network services in urban area planning is incontrovertible (Kaygısız et al. 2017). Within the scope of construction and environmental connections in the urban texture linked to development, we may witness increased recycling and low-energy smart investments and equipment. In future time periods, it will be unavoidable that this situation will increase sustainable cities and individual welfare (Kaygısız et al. 2017). Unplanned increase in urban populations and spread of information technology facilities will increase the potential and versatility of the effect of actors in urban administrations (Mentzelou 2017). This situation will bring more rational management of densely populated towns and limited public resources through artificial intelligence–dominated technological tools (Köseoğlu and Demirci 2018). Studies by Köseoğlu and Demirci (2018) and Mentzelou (2017) revealing the interaction between smart cities and smart information technologies found it important to mention similar results to this study. The study by Uçar et al. (2017) observed more rational progression of economic, social, and environmental qualities with time at the point of urban development. In line with the rising demands for multiple management forms at city level, e-democracy, e-administration, and e-participation formations came to the forefront with effects on urban planning. Within this scope, studies about feedback from local residents on websites of many local administrations confirm the findings of this study (Kaygısız et al. 2017). Related to increasing the potential for electrical automobiles, motorcycles, bicycles and public transport vehicles, facilities offered to city dwellers by Çanakkale local administration within this scope include rental bicycles, spread of cycling routes through the city in general, and increased public transport in combination with digital transport stops come to the forefront on the sustainable city scale (Tang et al. 2020). However, dense vehicular traffic in the city and lack of sufficient parking facilities negatively affect the compact structure of Çanakkale. Sustainability in the urban concept involves rational use of ecological assets and stable/natural seasonal norms in climate conditions. In Stockholm this situation involves renewable energies obtained from urban heating/cooling, vehicular fuels, bioenergy, solid fuels, and fossil fuels with electrical energy obtained from wind and water turbines (Anonymous 2019c); in Çanakkale, there are relatively similar applications with solid waste savings through energy and recycling, electrical energy production from wind turbines and solar panels, and bioenergy production from forestry products. Pedestrian, cycling, and public transport applications for urban transport in Çanakkale are similar to green capital identity gains for Copenhagen in relation to movement action plans for bicycles, pedestrians, and electrical and fueled vehicles (Anonymous 2019c). The important energy resource in the world of "biomass" is an effective solid fuel type for urban heating and industry. Within this scope, "pellets" produced from available forms of forestry, agricultural, and industrial wastes have an effective and important place in solid waste recycling and energy savings. The potential variety and amounts of this production activity should be increased in Çanakkale (Anonymous 2020c). Smart waste containers, smart parks, benches, and pergolas should be used more widely in landscape designs. Strategies should be developed for alternative savings like bioenergy, compost, and fertilizer from agricultural waste by expanding the recycling applications for available forestry products. Preventing agricultural areas from being opened for construction and resulting use of 1st- and 2nd-degree agriculturally fertile land for agricultural activities with productive aims should be guaranteed with legal legislation (Alkan and Uzun 2016). Fertilizer production should be arranged by separation of organic-derived material/waste. Additionally, recycling of seepage water should be ensured (Anonymous 2020d). A leading element in solid waste management is increasing awareness of townspeople and

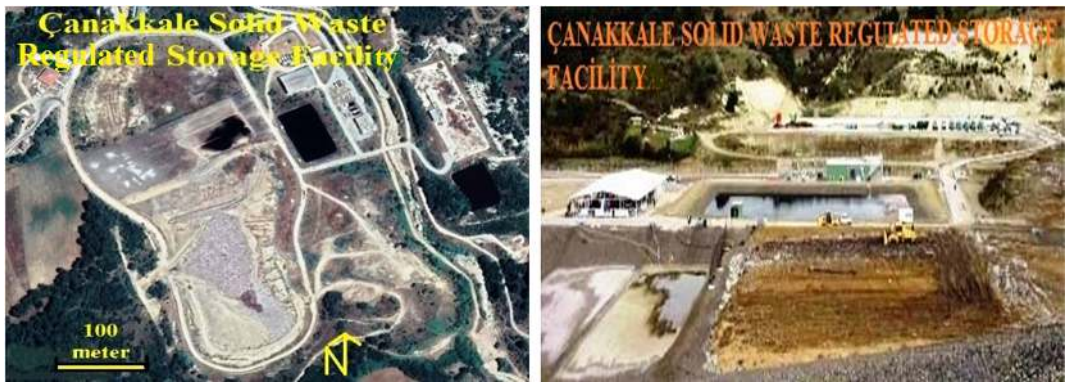


Fig. 7 Geographic location of Çanakkale Solid Waste Regulated Storage Facility (Adapted from Google Earth 2020) and photographs of the area (Anonymous 2020b, c)

ensuring recycling by collecting waste according to type. It is clear that transformation of fuel (methane) forming in waste storage areas to energy will have an important place in Çanakkale gaining an ecocity identity. Additionally, local administrators of the city should target an exemplary local administration vision building facilities in accordance with EU norms for disposal of medical waste, to prevent environmental and visual pollution and to transfer cultural, historical, and touristic texture to the future without damage. The main path followed by local administrations is to act with awareness and impulse to present future generations with more livable cities through a social municipality understanding focused on environmental problems (Anonymous 2020b, c). An attempt is made to give information from similar theoretical and technical studies about smart town applications in Turkey and the European Union. Migration for economic reasons and increasing population structure make dispatch and management of cities difficult. These management problems variegate urban development strategies in the form of smart, eco, green, livable, and sustainable city planning (Sınmaz 2013). Management involving multiple actors using digital systems is effective in revealing sustainable innovative approaches at the point of renewal of older and disregarded sections of cities (Kaygısız et al. 2017). Local administration displays rational and innovative approaches to uncontrolled population increase in cities and linked requirements. Within this scope, smart city applications contribute to the sustainability of cities (Uçar et al. 2017; Kıvılcım and Duran 2015). An applicable strategy about describing the relationship between formal structure and functions of compact and scattered cities was revealed (Pili et al. 2017). Change and development in the external venue forms in cities during the historical process was researched. Spatial criteria were used for this, emphasizing the importance of these criteria for urban planning and design (Aguilera et al. 2011). They stated the most important explanation for sustainability in the urban process was the combination of natural and social sciences (Alberti et al. 2003). The limitations of feedback mechanisms at the point of interaction of urban pattern and ecosystem dynamics were noted. An attempt was made to associate the venue forms of a city with ecosystem functioning (Alberti 2010). The relationship between dense population and field use in terms of compact cities in China was assessed in the scope of benefits and costs from an environmental perspective. It was concluded that there was a direct relationship between ensuring sustainability in the long term and land savings in cities (Chen et al. 2008). Barcelona represents an important structure at the point of reducing negative effects of many scattered settlements with a polycentric spread. The negative effects of this situation were emphasized in monocentric urban areas like in Çanakkale (Çatalan et al. 2008). Additionally, the following recommendations are mentioned in line with identifications revealed by SWOT analysis.

- Spatial form should be gained for unused urban areas in polycentric urban formation with tax reforms.
- Strategies should be developed for renewable energy resources and management focused on these (Allam 2020).
- Paid parking by local administration with widespread use in the city should be ended and different solutions developed to reduce traffic in the city.

Table 2 Findings identified as a result of SWOT analysis

Strengths
Has drinking water treatment facility
Has wastewater treatment facilities (Kepez and Çanakkale)
Has regulated solid waste storage area
Has rich structure in terms of natural flora, has maquis plant formation
Location of the city at sea level
Increased spread of bicycle and pedestrian transport network in the city in general; should be planning for overpasses for pedestrians and municipal bicycle rental points
Has conscious townspeople portfolio
Townspeople display positive approach to sustainable urban cases
Local administration has necessary equipment
Has necessary irrigation water potential
Increasing smart transport stop approaches and public transport within the scope of vehicular traffic
Importance given by local administration to multiparticipatory strategies like e-public, e-democracy, and e-participation
Opportunities
Sarıçay geography dividing the city into two
City having conscious and prudent local government and organization and civil administration
Normal annual rainfall amount in the region of 662.3 mm which is above the average for Turkey (normal annual rainfall amount for Turkey in general, 574 mm) (Anonymous 2019a)
Excess annual rainfall amounts allow saving of alternative water resources
City has plant population potential which will contribute to the vital texture
Use of the wind factor, with significant place in Çanakkale's climate for electrical energy production using turbines
Use of solar radiation, one of the city's ecological resources, for electrical energy production
Still no significant threat (Air Quality Index/AQI:37) for the city due to the greenhouse gas effect (Anonymous 2020e)
Characteristics features of Mediterranean and Black Sea climates
Inclusion of Çanakkale Onsekiz Mart University in the urban area
Giving an effective role to ecologic factor of solar radiation in the city, functional role for solar energy for production of electrical energy
Weaknesses
Insufficient infrastructural and superstructure techniques in terms of irrigation possibilities
Dense urban vehicular traffic and linked to this widespread paid parking areas
Lack of inclusion of plant formation at sufficient rates in urban potential
Application of vehicle parking fees in central locations in the city
Some administrators and workers are against innovation
Insufficient levels of smart parking facilities within the scope of city vehicular traffic problems at the forefront in the compact urban texture
Lack of sufficient drop-off banks for domestic, agricultural, industrial waste, and recyclable solid waste types in the urban texture
Insufficient levels of coastline/beach facilities abiding by Blue Flag criteria
Lack of widespread use of smart parks, benches, and pergolas in landscape designs
Sarıçay river dividing the city into two is not used fully and effectively in terms of recreation
Insufficient levels of planting to positively contribute to air composition in the city
Absence of energy-saving and long-life LED lighting in the city in general
Insufficient amounts and types of smart waste containers on the streets
Certain section of townspeople are resistant to change, development, and innovative approaches
Surface water from rain given to the infrastructure, lack of use within the scope of forming a water resource
According to 2018 data, the urban area contains 414,324 m^2 green space for population of 136,002, leading to green space per person amounts well below standards (3.05 m^2 standard, 10m^2/person) (Anonymous 2014, 2018a, b; 2019b; c; Cengiz et al. 2014)
Insufficient use of solar panels for city lighting, insufficient inclusion of LED lighting in the city in general
Insufficient inclusion of smart residences in architectural structures and lack of residential identification including technical information like electrical consumption and earthquake resistance
Threats
Potential for marginal climatic values that may occur
Allocating sufficient allowance for landscape design and planning
Mass groups displaying attitudes against innovative approaches
Missing coordination between relevant organizations and institutions
Mixing of dangerous gas with water, soil, and air composition due to mining exploration activities in the region. Mining exploration in Ağı Mountain and Kirazlı regions is a risk for the streams and rivers feeding Atikhisar Dam Lake representing the drinking water source for Çanakkale especially (Anonymous 2013). As stated in the Turkish Medical Association Report, attention should be paid to the dimension of the threat to human health and all underground and surface water sources, plant cover, air quality, and landforms within the scope of gold and silver exploration activities in the region (Anonymous 2013)

- Strategies should be developed to increase energy efficiency of present architectural structures and for new architectural structures to abide by minimum energy efficiency standards (Kıvılcım and Duran 2015).
- Rational policies should be developed within the multiple management understanding for alternative use which will contribute to the city identity like designs for recreational, water sports, canoe

transport, horse/walking sports in planting, and landscaping equipment of Sarıçay river.
- Necessary strategies should be developed with the aim of gaining Blue Flag status for the coastal strip used as a beach (Anonymous 2020a).
- Water and sludge created in the wastewater treatment plants should be used within the city as potential water resource, biomass, or by transformation to solid fuel.
- It is necessary to increase and popularize agricultural varieties within the scope of transformation of agricultural waste to biological fuel (Sharma et al. 2019).
- Separate drop-off bank equipment for domestic, agricultural and industrial transformable waste packaging should be increased in the city in general
- Efforts should be made for planning and application of informative educational activities (Rosa et al. 2019).
- It is necessary for local and administrative organizations and non-governmental organizations to display sensitive attitude to negative effects of chemical material used for mining exploration activities on the drinking water, soil, and air in Çanakkale's ecology.
- This appears to be one of the most important problems that may obstruct Çanakkale on the road to becoming sustainable. It is clear that mining and exploration activities in the region cannot be prevented due to technical reasons. The priority of local, administrative, non-governmental, and professional organizations should be generating common denominator solutions by calculating regional and country interests ignoring ethnic, political, and socio-economic structure differences.
- Townspeople conscious of the town's strong aspects should have a say in local administration.
- Natural resources like natural plant cover dominated by heathers and maquis and broad presence of forest should be protected and positive contribution to the city's air conditions should be maintained (Liua et al. 2020).
- Weight should be given to tree planting along roads to reduce air pollution due to traffic (Ottosen and Kumar 2020).
- Agricultural production and the tourism sector should benefit from climate conditions at sufficient rates.
- The wind, solar, and water resources of the city should be used at maximum levels for electrical energy production.
- Awareness of ecotourism should be developed and expectation levels increased. Efforts should be made to transform the cultural and natural structure to gains in this area (Villeneuve et al. 2006).
- In ecotourism studies, coordinated approaches by civil, administrative, local, and university administrations and sensitive attitudes should be supported (Heinke 1997).
- Rainwater should not contribute to groundwater; strategies should be developed for alternative savings like natural ponds, wetland areas, and potential water resources (Ronchi et al. 2020; La Rosa and Pappalardo 2020).
- A sponge city policy should be developed ensuring friendly management of rain water at ecologic scale (Qiaoa et al. 2020).
- Purified wastewater should be used as an alternative resource for agricultural and industrial purposes (Karamouz and Olyaei 2019).
- The topics included in the study are defined. It is clear that different dimension studies with broader scope may be performed. The need to lay the groundwork for scientific studies with similar structure is emphasized in this study. It is expected that the study will contribute to the literature in this way.

Compliance with ethical standards

Conflict of interest The author declares that there is no conflict of interest.

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