Vânia Lopes / Sara Moreno Pires / Rui Costa

A strategy for a sustainable tourism development of the Greek Island of Chios

Abstract

Despite several advances to comprehend tourism impacts and its relationship with sustainable development challenges, there is still a lack of worldwide examples of strategies for sustainable tourism development of destinations. Particularly in less developed European regions, tourism development strategies are still poorly implemented, emphasising the need to support them towards more balanced policies and actions that can effectively promote a sustainable tourism destination. The Island of Chios in Greece faces several challenges in order to develop such a strategy. Besides being a region particularly affected by the financial and refugee crisis of the last years, the Island does not have a Land Use Plan approved so far or any Strategy or Plan for Tourism. As such, the main goal of this paper is to propose a planning framework for sustainable tourism development of the Island of Chios considering the United Nations Agenda 2030 and its 17 Sustainable Development Goals. To accomplish such goal, the research involved a serious of different steps through an action-research approach based on a three-month internship at the local municipality. The qualitative and quantitative methodology was developed with the input of local key stakeholders and it enabled to identify the critical need for developing a sustainable tourism strategy for the territory. Results show that Chios is a destination with potential growth and increased competitiveness and attractiveness for visitors but major steps would have to be taken for the establishment of a participatory sustainable tourism strategic plan that could involve all the stakeholders and promote a sustainable growth and a more balanced development of the region.

Key words: planning; development; tourism strategies; sustainability; Greek Island of Chios; UN Agenda 2030

1. Introduction

During the last 11,000 years, the world's temperatures have been in natural constant and warm values, and this geological epoch has been named as the Holocene. However, scientists believe temperatures raised faster and drastically since Industrial Revolution and mainly by human action (Steffen et al., 2009). In the decade of 1980, the sustainable development concept was officialised, and since then worldwide scientists, researchers, politicians, academics and other public and private bodies have been discussing the solutions for the global growing environmental problems but with few successes to invert these trends. Conferences and political negotiations, such as the United Nations (UN) Agenda 21, the Kyoto Protocol or later, the Paris Agreement, have been conducted, and this problematic has been discussed and disseminated into various economic sectors such as tourism. More recently, the United Nations Agenda 2030 approved 17 Sustainable Development Goals (SDGs) to be addressed until 2030. Tourism is a key sector in this Agenda for SDG 8, 12 and 14, focusing on tourism jobs, promotion of local culture and preservation of marine resources (United Nations, 2015), namely:

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- 8.9. "By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products" (p. 24);

- 12.b. "Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products" (p. 27);

- 14.7. "By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism" (p. 28).

Tourism assumes a strong position in the development of worldwide territories. For the positive impacts in terms of wealth and well-being, it is used as a strategic sector to improve the economy of countries and regions (Sharpley & Knight, 2009; Tourism of Portugal, 2017). However, the negative impacts are strongly visible, being considered a vehicle of green gas emissions through the transportation sector or a contributor to fossil fuel dependence (Stilwell, 2013), to biodiversity loss and water consumption, among others. Besides the damages it causes to the environment, without proper planning, tourism translates into processes of gentrification (Gant, 2015), rise of land prices (Mathieson & Wall, 1982), overcrowding and loss of traditional values and other social and cultural stresses. For carrying limited resources and capacity (United Nations Environment Programme [UNEP] & International Council for Local Environmental Initiatives [ICLEI], 2003), evidences of tourism impacts are even more critical in Islands than in continental regions, which reinforces the need for planning towards a sustainable future development.

As humanity is living in a period of global pressures and rapid changes, tourism can be a vehicle to achieve the SDGs and contribute to more sustainable transitions. However, a lack of successful strategies of sustainable tourism development is still a major concern and authors agree on the lack of and need for guidelines to implement such strategies (Candiotto, 2009; Chan, 2010; Sharpley, 2010; Swarbrooke, 1999). In the world, there are only 9 certified regions, islands and islet classified as sustainable tourism development destinations (Tavares, 2017). In this sense, it is critical to discuss such problematic and to contribute, through an academic work, to the design of a planning framework for sustainable tourism development in the Greek Island of Chios, as a case study. Even though sustainable tourism development is multifaceted and there is no "one size fits all" solution (Chan, 2010), a planning framework can contribute and help political decision-makers to use it as a guideline to improve current practices. Additionally, this framework can then be used to discuss the challenges faced by Islands in less developed European regions.

As such, the main goal of this paper is to propose a planning framework for sustainable tourism development for the Island of Chios, considering the United Nations Agenda 2030. To accomplish such goal, the research involved a serious of different steps through an action-research approach based on a three-month internship at the local municipality of Chios. This paper intends to emphasize that planning for sustainable tourism development must be focused on such type of research approaches.

2. Literature review

Pre-historic times were characterized by the nomad man changing from a place to another, in search of subsistence, because the Earth's temperatures were on constantly natural modification. The Era of human fixation happened since around 11,000 years ago, when our Planet found a relative stability, representing what the scientists call the "Safe Operating Space" and the "Holocene" for geologists (Steffen et al., 2009).

However, this panorama changed since Industrial Revolution, when a new Era had begun, the "Anthropocene", characterized for the human impacts on the Earth stabilized system, due to an exponential growth of the human population, different options of living, such as our strong dependence on fossil fuels, weak land use management and planning, unsustainable waste generation and exaggerated food consumption (Stilwell, 2013; Steffen et al., 2018).

Since then, experts have been reflecting on the global environmental change effects and various studies have been undertaken towards sustainability. With the establishment of the concept of Sustainable Development by the Report "Our Common Future" in 1987 (United Nations [UN], 1987), the idea of saving and managing the territory resources was reinforced. However, more than 30 years after the formalisation of this concept, human impacts on the environment did not decrease, on the contrary, they have continuously been increasing at a faster pace. 2015 was a critical year for the international agenda on these matters with the approval of the United Nations Agenda 2030 and the Paris Agreement.

The concept of sustainable tourism development was officialised on the World Tourism Organization Conference of Sustainable Tourism in 1990. According to World Tourism Organization and United Nations Environment Programme (UNWTO & UNEP, 2005, p. 12) sustainable tourism development can be defined as an activity "…that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities". Generally, sustainable tourism development can be considered as a vehicle to achieve sustainable development principles (Chan, 2010; Hoppstadius & Sandell, 2018; Sharpley, 2009) but having several critical negative impacts to take into account (see Table 1).

Islands are chosen as elected holidays of many families, since they represent isolated territories (Cordeiro, 2008 in Tourtellot, 2000b) and offer unique characteristics associated with a different lifestyle, unique land formations, diverse flora and fauna and ocean and coastal resources. Because of their small size with limited resources, susceptibility to natural disasters, environmental fragility, cultural sensitivity, high costs of trading and restricted access to services (either by boat or plane), they are critical territories to respond to the Sustainable Development Agenda (Cordeiro, 2008 in Briguglio, 1995; UNEP & ICLEI, 2003; UNWTO, 2012). Their characteristics also justify the reason to carefully recognize tourism impacts and to better plan and manage a sustainable tourism development. As an example, the Tai Maya Bay Island received around 5,000 visitors per day and the incensement of tourism during the years created irreversible negative impacts for the Island. According to a deputy dean of the University of Bangkok, the beachfront hotels, the boat anchors and the plastic waste dumped into the sea are the main negative effects (Coldwell, 2018). To solve such problematic situation in the Island, national authorities applied a strategy to reverse environmental damages, by closing the Island in 2018 low season from June to September.

As such, sustainable tourism development policies, covering environmental, economic and socio-cultural aspects, are determinant for the future of islands (Sheldon, 2005).

Literature shows that planning for tourism is a recent matter. Until 1920, tourism was seen as a leisure and recreational activity outside the governmental sphere. Only after Second World War, the sector assumed a position of profit generated by the public and private sectors and with the growth of mass tourism, political decision-makers started to understand the impacts that the sector creates. For Choi and Sirakaya (2005), the negative impacts of tourism are especially visible when a destination becomes popular without any prior planning, management or preparation. So, even though sustainability is a responsibility of all those involved directly and indirectly within tourism sector as well as of tourists, Governments have many tools that can be used to make a difference, such as the power to implement

regulations, offer economic incentives and create cooperation between institutions to promote and disseminate good practices (UNWTO & UNEP, 2005).

Table 1
Impacts of tourism

	POSITIVE	NEGATIVE
ECONOMIC	• Employment • New business opportunities • Income (through multiplier effect) • Regeneration and restructuring of urban economies • New investments	• Precarious, seasonal and low wages jobs • Over-dependence on one sector • General price rise • Investment on expensive infrastructure • Land prices increase • Property speculation
ENVIRONMENTAL	• Natural resources protection and appreciation • Creation of natural reserves • Re-use of disused buildings • New architectural styles • Infrastructure upgrading	• Kill animals to supply goods for souvenirs • Migration of animals and overfishing • Water consumption and pollution • Deficiency on water supplies • Air pollution • Noise pollution • Visual pollution • High food consumption and food waste • Waste production • Loss of nature and open spaces • Deterioration of cliffs, caves and other geological elements of nature • Increases risk of erosion and avalanches • Increase the dependence on fossil fuels • CO_2 emissions
SOCIAL / CULTURAL	• Reduces depopulation • Culture exchange • Conservation of costumes and traditions • Restauration and preservation of monuments and historical sites • Increases religion respect by tourists • Improves the mobility system • Rise of communities' self-esteem • Progress on security systems • New markets of traditional crafts and re-born of traditional art forms • Tourists positive values and behaviours influences host communities • Increases quality of museums	• Building of non-traditional architectonical buildings • Conflicts between cultures • Overcrowding places • Material heritage degradation • Social stratification and modification • Traffic congestion • Increases crime • Fake culture sense • Communities' alienation over planning • Pressure on local languages • Loss of control on the commercialization of local resources

Source: Author elaboration (Ferreira, 2009; Kreag, 2001; Mathieson & Wall, 1982; Neto, 2011 in Vieira, 1997; Swarbrooke, 1999).

Planning for sustainable tourism development is not just about controlling and managing the negative impacts of the industry. It is about joining the economic development and environmental protection forces (and social) and mutually reinforce each other (UNWTO & UNEP, 2005). This means that planners need to adopt a holistic approach and take actions in a global way, reflecting on the economic, environment, social, culture, political factors together and other sectors of the industry in each territory (Chan, 2010; Sharpley & Knight, 2009)

The main steps that should be given by political decision-makers to plan for a sustainable tourism destination can be seen in Figure 1.

Figure 1
Implementation steps for a sustainable tourism development strategy

STEP 1 Diagnosis	STEP 2 Vision	STEP 3 Action plan	STEP 4 Implementation	STEP 5 Monitoring

Source: Author elaboration (Visit England, 2012; UNEP & ICLEI, 2003).

The first step is the diagnosis phase. It is characterized by an overview of the socio-economic and environmental context, strategies or policy documents (Hristov & Petrova, 2018; UNEP & ICLEI, 2003) and a review on tourism laws to understand the weaknesses and threats but also the potential and opportunities of the territory. Then, a shared long-term vision should be established with key stakeholders (Step 2) and an action plan with specific goals should be designed (Step 3) also with stakeholder's consultation, to consider their opinion and suggestions and to respond to their needs. Stakeholders' participation promotes the articulation of actors, develops community cohesion and improves the quality of decisions (Neto, 2011). They are one of the most important components of any strategy for tourism development (Eusébio & Carneiro, 2012). If planners do not involve locals into the strategy and selection of priorities, actions and targets, the model of tourism development, which is being applied, will not have the desirable outcomes (Angelevska-Najdeska & Rakicevik, 2012; Coutinho, 2016).

Involving tourism professionals is also important because they are directly or, indirectly connected with the sector and have key answers and information to help implementing the strategy (Step 4). In this way, developing a strategy for a sustainable tourism destination can be a time consuming and difficult process at the local level (Choi & Sirakaya, 2005). It requires involvement of all stakeholders and diverse ways of thinking and acting. In most cases, there is competition among the different interests of many stakeholders, which creates difficulties in the process. The key is to help them to understand how they can benefit by cooperating and working together in one common structural strategy (Coutinho, 2016).

It is mainly important for the planning process to do a continuous evaluation of the process, through the collection of indicators, monitoring and reporting (Step 5). Indicators can be extremely helpful to simplify reality and quantify some aspects that allow us to understand where we are, where are we going and how distant we are from where we want to be. Angelevska-Najdeska and Rakicevik (2012) claims for a need to develop performance indicators for sustainable tourism development so that we can monitor our progress and recognize where we are failing.

Even though the difficulties, a sustainable tourism development strategy must be developed through a participatory process, involving stakeholders on all the key steps because without their participation, it will be hard for any project to succeed and be sustainable, particularly in the context of Islands (Neto, 2011).

3. Research methodology

As stated above, the main goal of this paper is to propose a planning framework for sustainable tourism development of the Island of Chios considering the 17 SDGs through an action research methodology. To accomplish such goal, the research involved a serious of different steps focusing on the first three steps of Figure 1. Step 4 and Step 5 could only be developed in a later stage and therefore do not appear in this methodology.

The investigation was done through an action-research approach based on a three-month internship of one of the authors at the local municipality of Chios, having a role as a "participant-observer" (Marujo,

2012). The methodology was developed within a qualitative and quantitative approach, taking into consideration the input of key local stakeholders (see Table 2). Action-research is a field methodology that aims to be applied research, reducing the distance between researcher and research field (Heimerl & Peters, 2019), and to use different qualitative and quantitative methods (Cheia, 2010; Marujo, 2012) in order to be able to study, act on, and study again, a certain phenomenon. In tourism, the researcher can develop an action-research approach as a "participant-observer" by interacting with local stakeholders and developing informal relationships with them, observing the naturally of the physical environment and creating perceptions in the tourist point of view. This is a crucial methodology for tourism research to obtain information concerning the phenomena, allowing to register attitudes and behaviours in its own context (Marujo, 2012). Heimerl and Peters (2019), for instance, developed an action research methodology to assess future scenarios for tourism destination development for an Alpine region in Austria, with the aim to develop a participative strategy development tool and discuss key topics to create awareness and to proactively face upcoming challenges for tourism destination networks.

Table 2
Methodological steps to draft a sustainable tourism strategy and data collection procedures

METHODOLOGICAL STEPS	DATA COLLECTION PROCEDURES
Step 1 - Diagnosis • Audit of strengths and weaknesses, opportunities and threats (SWOT analysis)	• Research on websites and official documents • 13 informal conversations to local tourism stakeholders • Visits to tourism facilities • Attendance to a marketing event
Step 2 – Vision • Definition of a shared long-term vision	• Literature review • Questionnaire to tourism professionals
Step 3 – Action plan • Definition of strategic goals and the action plan (actions, targets and indicators)	

Source: Author elaboration.

The mixed methodology approach was based in several data collection procedures and it started with a three-month internship at the Department of Employment, Maritime Affairs and Tourism (DEMAT) at the Municipality of Chios, between October and December 2017, through an Erasmus+ Program Internship. The aim of the internship was to draft a sustainable tourism development plan for the Island within that Department. The internship involved a serious of different activities, from a preliminary diagnostic phase researching about Chios tourism on websites and consulting available official data and documents in English (since the intern had no knowledge on the Greek language), to thirteen informal conversations with academics (2 stakeholders), representatives from hotels and accommodation associations of the Island (2 stakeholders), tour operators (5 stakeholders) and tourism management professionals from the Department of Tourism of the North Aegean Region (4 stakeholders). Additionality, visits to tourism facilities were made to three hotels, the local thermal waters spa, an olive oil manufacturing industry, a winery and souma liquor production factory and the hiking trail "Fa-Lithi". Furthermore, the attendance of a marketing event was a crucial opportunity to collect details about tourism activities of the Island. These different activities allowed to collect data and provide a diagnosis of the socio-economic and environmental context of the Island for DEMAT and build a matrix of the strengths and weaknesses, opportunities and threats of the tourism sector in the Island that did not exist until that time.

After those initial activities it was possible to anticipate a long-term vision for the sector and define a first draft of strategic goals and an action plan (actions, targets and indicators) for a sustainable tourism

strategy, based on a literature review and on the UN 2030 Agenda. The UNWTO's guidebook for policy makers "Making Tourism more sustainable" and many tourism experts such as Buckley and Swarbrooke were sources of inspiration to draft such a strategy for Chios within the DEMAT.

The proposed draft strategy was discussed within DEMAT and after the internship ended, an online questionnaire written in English was prepared to ask tourism professionals about their opinion on the thirty-one actions proposed. A pre-test of the questionnaire was done in October 2018 and the final version of the questionnaire was online for one month, between October and November of 2018. It was sent to 99 tourism professionals of the Island, from: 1) bus and boat transportation companies, airport 2) hotels associations, hotels, hostel, aparthotels or similar accommodations, 3) restaurants, bars, cafes, 4) tourism departments, tourism office, university, 5) guided tours, water activities, mountain activities, radical activities, 6) museum, archaeological assets, cultural institutions and 7) scooters, bikes, bicycles, cars, similar vehicles companies. Tourism professionals of Chios were asked to give their opinion on the proposed actions, according to a Likert scale of 5 points, from 1 ("totally irrelevant") to 5 ("totally relevant"). Only 15% of the tourism professionals answered, with a total of 15 answers. Data was collected within the Lime Survey Platform, provided by the University of Aveiro, where results were analysed through SPSS Program and tables were draw on Excel Program.

4. Research results

Chios has a strong potential to become a competitive tourism destination. The Island can be considered a cultural and nature tourism destination. It is the 5th largest Island of Greece, covering 842.5 km, located in the north of the Aegean Sea, in the border of Europe, near Turkey (Figure 2). The Island belongs to Chios Regional Unit of the north Aegean Region of Greece and it is composed by Chios, Psara and Oinousses Islands. This group of three Islands has its own local government, being Chios the most populated Island with 51,390 inhabitants (Enterprise Greece, 2016) (Table 3).

Figure 2
Chios Island
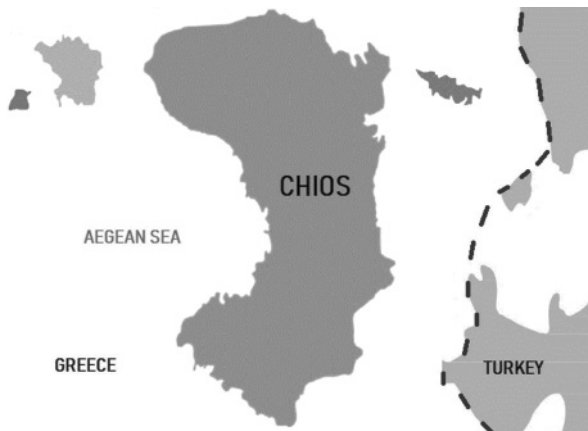
Source: Author elaboration.

Table 3
Chios geographical information

Dimension	842.5 km
Population	51,390 (census 2011)
Climate	Mediterranean
Fauna	Goats and sheep
Flora	110 species
Protected areas	2 natura 2000 regions
UNESCO sites	3 monasteries
Main resources	Mastic, souma liquor, mastelo cheese, craft beer, honey, wine, olive oil

Source: Author elaboration.

Chios population is mainly dependent on the public administration, education, health and social work activities sector, contributing to 30.6% of the Gross Value Added (GVA) of the Island (Enterprise Greece, 2016). Trade, transportation and storage, accommodation and food services are pointed as

main economic activities of the Island, as well as real Estate activities (corresponding to 21.1% and 19.7% of the GVA, respectively).

Nevertheless, the unemployment rate has been growing gradually. Chios have been facing two critical political and social problems, following national trends. In 2008, Greeks faced several austerity policies in result of a global economic crisis, which had effects on unemployment rates. Moreover, a new phenomena started in Greece in 2015, which affected mostly the Islands of the Eastern Aegean Region. Around 857,000 migrants transited to Greece, coming from countries as Syria, Afghanistan and Iraq, in order to fight for their lives and escape from war (European Commission & European Civil Protection and Humanitarian Aid Operations, 2018). This was the beginning of a new crisis in the country: a humanitarian crisis. In a situation of serious economic crisis, the social crisis emerged and deteriorated even more the situation. So, substantial government investments were done not only to help these people to be accommodated, to have the minimum access to basic needs, as combating hunger and fighting against diseases, but also to protect the Greek community from possible robbers and attacks. As an example, it was estimated that over 70 million euros were invested by Greece and Spain on equipment as drones and off-road vehicles to close their borders (Osterbo, 2015).

Regarding the tourism sector, the Island of Chios is dependent on Turkish tourists, who arrive by boats, during summer season, being August the peak of such economic activity. As an example, in August 2016, 11,446 Turkish tourists arrived in Chios by boats, comparing to 2,872 in November of the same year (information provided by Chios Tourism Department of the North Aegean Region), reinforcing the idea that Chios is a seasonal destination.

Chios also received charter-flights from cities as Vienna, Lanark, Oslo, Amsterdam, Brussels and Prague in the previous years, during summer season. The number of international air arrivals decreased from 12,090 international arrivals in 2010 to 771 in 2017. Concerning occupancy, in 2010 the rate of occupancy was 32.2% decreasing until 2018 to 23.3% (Insete, 2020).

Regarding local natural resources, mastic is a resin produced by Pistacia plant, cultivated in Chios Island, which can be planted in other parts of the world and even on the north part of the Island, but the resin will not be produced (Dimas et al., 2012). For this reason, it has been announced as a competitive advantage of the Island, playing an important role since ancient times and used nowadays in diverse applications, such as cosmetics, cooking and beverages.

Based on the first data collection activities and on the context of the Island of Chios it was possible to summarize a SWOT matrix of the tourism sector for the Island (Table 4).

Taking into consideration the results from the diagnosis phase and consequent TOWS analysis, the vision for Chios was established, according to the three pillars of sustainability: environmental development, social and cultural development, economic development and a pillar for tourism activity development (see Figure 3). This vision, being a major guiding framework enabled to support the development of the 5 strategic goals (Environmental Protection; Social and Cultural Development; Economic Dynamism; Tourism planning and management; Tourism Planning and Management; Tourism Activity Development) and 31 actions were defined for a sustainable tourism development of Chios' Island.

Table 4
TOWS matrix

		Strengths (S)	Weaknesses (W)
		• 5th biggest Greek Island • Mediterranean climate • Diverse vegetation: 2 Natura2000 areas • Mastic as a competitive advantage • Rich material and immaterial heritage: 3 UNESCO sites • Vast production of consumable products	• Mercury on the tap water (Dimitrios, 2005) • Seasonal destination • Lack of statistical data • Weak public participation • Lack of stakeholder's cooperation/ partnerships • Low occupancy rate • Deficiency of public infrastructure • Poor mobility system • No DMP or land use plan
Opportunities (O)		SO	WO
• Mass European destinations • Low-cost flights • North-Aegean region strategy 2014-2020 • Environmental awareness • Demand for authentic experiences • Independent tourist profile • Social networks influencing tourism		• Incite tourism sustainable experiences with locals • Increase branding on mastic product	• Combat low occupancy rate • Raise sustainable tourism awareness on locals through public meetings
Threats (T)		ST	WT
• Global environmental changes • Refugee influx • Financial crisis • Vulnerability to tourism impacts • Vulnerability to earthquakes (Pavlides et al., 2009)		• Promote volunteer tourism activities with refugees • Improve air and boat connections as emergency exits	• Develop sustainable practices in terms of mobility, infrastructures, facilities and services • Monitor tourism impacts and increase statistical data

Source: Author elaboration.

Figure 3
Long-term vision for Chios destination
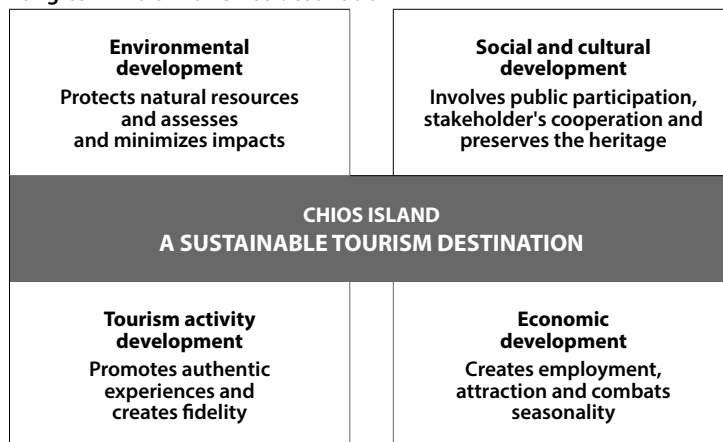
Source: Author elaboration.

4.1. Action plan for Chios and the UN Agenda 2030

The action plan was developed considering the Island context and the UN Agenda 2030. The following tables show the relationship among the proposed actions and the 17 SDGs so that they could enforce the Island's sustainable tourism development (Tables 5, 6, 7, 8 and 9).

The diagnosis concluded that some tourism accommodations are located near the coast and this can lead to irreversible damages to the environment, deteriorating the cliffs and increasing the risk of erosion. Therefore, local government should discuss what should be the minimum acceptable distance from the coast for the building of tourism businesses (Goal 1.1.).

Mastic has a precious competitive advantage to the Island, so it is crucial to be protected by law, regarding its cultivation, management, exploitation and prevention from fires or other natural catastrophes (Goal 1.3.). Such actions meet the requirements of UNWTO (2015) and the SDG15, in claiming for the protection, promotion of sustainable use of ecosystems, sustainable management of forests and desertification.

Table 5
Goal 1. Environmental protection

ACTIONS	SDGS
1.1. Prohibit the construction of tourist facilities at a minimum distance from the coast	6 CLEAN WATER AND SANITATION
1.2. Implement systems to clean the beach areas	15 LIFE ON LAND
1.3. Guarantee the protection of mastic trees cultivation	11 SUSTAINABLE CITIES AND COMMUNITIES
1.4. Incite tourism accommodations to provide efficient energy and water consumption systems and adopt reduce, re-use and recycle policies	7 AFFORDABLE AND CLEAN ENERGY
1.5. Restrict the use of public space by tourism businesses	10 REDUCED INEQUALITIES
1.6. Implement regulations of tourism water activities	14 LIFE BELOW WATER
1.7. Develop a system to encourage enterprises to reduce their greenhouse gas emissions	13 CLIMATE ACTION
1.8. Create regulations to increase the quality of water consumption	6 CLEAN WATER AND SANITATION

Source: Author elaboration.

In Chios, the pipe waters contain mercury that can lead to serious health problems if drinkable. To solve this problem, it should be created regulations and infrastructures to ensure water treatment (Goal 1.8.). This would also reduce plastic bottles' consumption and guarantee health safety for the visitors and locals, matching with SDG6.

Still giving importance to the Island water use and management, but in the perspective of tourism, Chios' tourism activities such as sailing, yachting, fishing, scuba diving, kayak and thermal baths should be regulated to prevent overfishing, water pollution or destruction of species (Goal 1.6.), which is what SDG14 claims for.

Government must incite tourism professionals to provide sustainable energy systems in their services as well as motivate for re-use, reduce and recycle waste policies (Goal 1.4.). They should also be pushed to report their greenhouse gases emissions, by monitoring their activities, as they are crucial actors for a sustainable tourism development (Goal 1.7.). This would have a positive impact on SDG7 and SDG13, respectively.

Table 6
Goal 2. Social and cultural development

ACTIONS	SDGS
2.1. Promote an annual calendar of events	2 ZERO HUNGER
2.2. Create thematic meetings with locals about tourism	16 PEACE, JUSTICE AND STRONG INSTITUTIONS
2.3. Implement an agreement with flight companies of free luggage to carry help for refugees	1 NO POVERTY
2.4. Create a program of tourism at school with direct access to the University	4 QUALITY EDUCATION
2.5. Develop a program for low income locals to travel around the Island	10 REDUCED INEQUALITIES
2.6. Incite volunteer tourism activities	3 GOOD HEALTH AND WELL-BEING
2.7. Promote rural tourism activities	2 ZERO HUNGER

Source: Author elaboration.

Regarding social and cultural dimensions, it should be created an annual calendar of events (Goal 2.1.). Activities such as local products markets with local farmers and artisans would have a positive impact on SDG2, which is related with combating hunger and promote sustainable agriculture. Tourism can promote local production and include these stakeholders in the tourism value chain, which would increase the injection of direct flux of tourism revenues into locals.

SDG3 intends to promote health and well-being for everyone and tourism economic growth can have a direct contribution to the wealth-being of communities. Action 2.6. can have this effect, by promoting volunteer tourism and inviting people from all over the world to help refugees and rural communities in the Island.

According to UNWTO (2015), a well-trained and skilful workforce is crucial for tourism to prosper. Tourism education and awareness are therefore critical for a stronger human capital in the Island (Goal 2.4. and Goal 2.5.).

Table 7
Goal 3. Economic dynamism

ACTIONS	SDGS
3.1. Implement incentives programs for tourism businesses	1 NO POVERTY
3.2. Reinforce the requalification project of Chios airport	9 INDUSTRY INNOVATION AND INFRASTRUCTURE
3.3. Increase the number of flights and trips by boat	8 DECENT WORK AND ECONOMIC GROWTH
3.4. Implement processes to connect with key-travel agencies and media	17 PARTNERSHIPS FOR THE GOALS
3.5. Increase tourism connections with Psara and Oinousses islands	17 PARTNERSHIPS FOR THE GOALS

Source: Author elaboration.

SDG1 aims to end poverty and guarantee the access for basic needs to everyone. According to UNWTO (2015), sustainable tourism development can have positive outcomes for SDG1 by promoting entrepreneurship and empowering less favoured groups. Goal 3.1., by creating incentives for tourism businesses in rural areas, will increase attraction to other non-explored parts of the Island, combat social exclusion of this population and increase social cohesion of the territory.

Taking into consideration the on-going requalification project of Chios airport (Goal 3.2.), the idea is to reinforce such project and increase the number of flights and international-charter flights as well as international trips by boat (Goal 3.3. and SDG8). It is crucial, however, to find a balance between the Island's tourism development and its economic growth with the consequent environmental impacts, since aviation is one of the main drivers of CO_2 emissions (Stilwell, 2013; UNWTO & UNEP, 2005).

Tourism can also accomplish SDG17 by strengthen private and public partnerships and engage multiple stakeholders – international, national, regional and local (UNWTO, 2015). Therefore, policy-makers could discuss the possibility of increasing connection with Psara and Oinousses Islands, which belong to the same group of Islands, to create new and alternative offers and promote peace and cooperation between the three Islands (Goal 3.5.).

Table 8
Goal 4. Tourism planning and management

ACTIONS	SDGS
4.1. Collect data about tourism to monitor the impacts and trends	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
4.2. Implement a technological system to manage the numbers of visitors	9 INDUSTRY INNOVATION AND INFRASTRUCTURE
4.3. Hire professionals of Tourism	11 SUSTAINABLE CITIES AND COMMUNITIES
4.4. Include policies for sustainable tourism development in the Municipality Land Plan	11 SUSTAINABLE CITIES AND COMMUNITIES
4.5. Create a tourism observatory	11 SUSTAINABLE CITIES AND COMMUNITIES

Source: Author elaboration.

Land use management and planning is a vital goal. Chios Municipality needs to support a Land Use Plan and define policies for Sustainable Tourism Development (Goal 4.4.). To accomplish that, hiring professionals to be in charge for the tourism planning and management, to implement such strategy and monitor the process is a critical goal (Goal 4.3.). Monitoring social, economic and environmental impacts of tourism is the most important part of the strategy. By collecting data continuously (Goal 4.1.), the destination would provide a better tourism experience as well as reducing current and future negative impacts of tourism.

Next goal intends to be a tool to empower population and stakeholders' involvement, according to SDG5 with the creation of a tourism observatory (through debates, focus groups, seminars and conferences) (Goal 4.5.). This could improve public participation of all (men, women, and indigenous people) in decision-making processes related to tourism, raise stakeholders' awareness for the benefits of tourism and enable cooperation among private and public investors.

A resilient infrastructure and the strengthening of innovation, according to SDG9, is visible on the proposal to implement, for instance, a ticketing system to manage the number of visitors at the museums and sites (Goal 4.2.).

Table 9
Goal 5. Tourism activity development

ACTIONS	SDGS
5.1. Improve tourism signalization	10 REDUCED INEQUALITIES
5.2. Create new tourism offices	11 SUSTAINABLE CITIES AND COMMUNITIES
5.3. Incite the participation of target groups in tourism fairs	17 PARTNERSHIPS FOR THE GOALS
5.4. Create a guidebook with sustainable practices	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
5.5. Create cycle paths and provide adequately signalized bus stations	11 SUSTAINABLE CITIES AND COMMUNITIES
5.6. Facilitate the visa documentation processes for Turks and others foreign	10 REDUCED INEQUALITIES

Source: Author elaboration.

Goal 5.1. aims to improve the tourism experience, by remodelling tourism signs, basic infrastructures, facilities and services, making it accessible to everyone (even for non-Greek speakers) and to disable people, as SDG10 claims for. Examples of important actions can be the implementation of signs for the Tourism Office, trails, fauna, flora and historical information signs.

Make cities more sustainable with advanced infrastructure, heritage preservation and with measures to reduce transport pollution is the focus of SDG11 and action 5.5. The proposal is to create cycle paths and instigate it for tourism use. In this way, all the mobility system (e.g. bus routes, bus stations signals, service parameters, information systems for tourist) have to be re-designed, to foster inter-mobility.

As Turkish tourists are a key-target group for the development of Chios' tourism, an important process would be the simplification of the documentation process for Turks visitors, during all year (Goal 5.4.).

4.2. Tourism professionals' perceptions on the proposal action-plan

Most of the surveyed professionals work as tour operators (27%) and as receptionists (27%). These surveyed professionals have between 25-44 and 45-64 years old, corresponding to 47% and 40% of the answers, respectively, and there was only one answer from a professional with the age of 18-24. Most of them have bachelor's degree (47%) and master's degree (27%) or completed high school (20%).

Tourism professionals that answered the questionnaire consider that beaches and medieval villages are the most important elements of the Island that tourists appreciate most. Additionally, 33.3% consider that mountains and hiking trails are "totally irrelevant or irrelevant" and 13.3% consider the same for the immaterial heritage of the Island. Around 93% of the surveyed professionals agreed that tourism is seasonal and 60% considered it an uncompetitive destination.

To assess their support towards the implementation of the proposed actions, a color scale of priority actions for a sustainable tourism development was designed, in which the red color was considered as very urgent actions (corresponding to >80% of relevance), yellow as urgent (70%-79%) and green as not-urgent actions (<69%).

The very urgent actions to be applied for a sustainable tourism development of the Greek Island of Chios (visible in Table 10 with red color), according to the surveyed tourism professionals were: promote rural tourism activities; incite volunteer tourism activities; create a program of tourism at school; implement regulations of tourism water activities; incite tourism accommodations to provide sustainable consumption systems; guarantee *mastic* protection; implement processes to connect with media; increase number of flights and boats; requalification of the airport; implementation of incentives for tourism businesses; create cycle paths and better bus stops; include policies for sustainable tourism development in the land use plan and implement a system to manage number of visitors.

Table 10
Questionnaire results

	Action	Totally irrelevant %	Relevant %	Totally relevant %	Average	Standard deviation
Environment	**1.1**	20.0	13.3	66.7	3.87	1.356
	1.2	13.3	13.3	73.4	4.07	1.1
	1.3	13.4	6.7	80.0	4.27	1.28
	1.4	13.3	0.0	86.7	4.33	1.047
	1.5	20.0	13.3	66.7	3.53	1.302
	1.6	6.7	6.7	86.6	4.13	0.834
	1.7	6.7	20.0	73.4	3.93	0.884
	1.8	13.3	20.0	66.6	3.87	1.06
Society	**2.1**	20.0	13.3	66.7	3.73	1.1
	2.2	6.7	26.7	66.6	3.93	0.961
	2.3	6.7	40.0	53.3	3.6	1.056
	2.4	0.0	20.0	80.0	4.0	0.655
	2.5	13.3	13.3	73.3	4.0	1.069
	2.6	0.0	20.0	80.0	4.13	0.743
	2.7	6.7	6.7	86.6	4.47	1.125

Table 10 **Continued**

	Action	Totally irrelevant %	Relevant %	Totally relevant %	Average	Standard deviation
Economy	**3.1**	6.7	13.3	80.0	4.13	1.125
	3.2	6.7	6.7	86.7	4.2	1.082
	3.3	0.0	6.7	93.4	4.6	0.632
	3.4	13.4	6.7	80.0	4.2	1.265
	3.5	6.7	20.0	73.4	3.93	0.884
Planning	**4.1**	6.7	26.7	66.7	3.8	1.082
	4.2	13.3	6.7	80.0	3.93	0.961
	4.3	13.4	13.3	73.4	3.8	1.146
	4.4	6.7	13.3	80.0	3.87	0.99
	4.5	13.4	13.3	73.3	4.13	1.302
Tourism	**5.1**	13.4	20.0	66.6	4.0	1.309
	5.2	13.3	26.7	60.0	3.67	0.976
	5.3	13.3	20.0	66.6	3.87	1.06
	5.4	6.7	20.0	73.3	3.73	0.961
	5.5	13.4	6.7	80.0	4.13	1.246
	5.6	6.7	20.0	73.3	4.27	1.033

Source: Author elaboration.

Even though environmental actions have a clear importance for the respondents, it is possible to see that very urgent actions are concerned with economic goals.

5. Conclusions and implications

Current human living standards are driving the Planet into a state of global environmental change and its consequent natural disasters. The establishment of the 17 SDGs of the UN Agenda 2030 emerged to help us to recognize our responsibility in the root causes, but also our capacity to drive future changes. This research intended to demonstrate the need for participative planning processes towards sustainable tourism development, using Chios Island as an example.

Research results show that the Greek Island of Chios has a diverse touristic potential, in which mastic has a crucial role. On the other hand, it faces several challenges to become a sustainable tourism destination: a small capacity airport, deficiency in infrastructure and facilities supporting the sector, weak public participation in tourism related decision-making processes and a lack of shared vision and strategy for the sector. In relation to such results, a first proposal for a vision and an action-plan was prepared by the Municipality of Chios, based on a diagnosis that involved the perception of several stakeholders.

A questionnaire was then applied in order to perceive the stakeholder's opinion on the proposals. Results showed the most critical and urgent actions to implement, such as "increase the number of flights and trips by boat" with a percentage of 93.4% of relevance. The economic dimension was considered one of the most important dimensions to be developed for the respondents. Similar conclusions were taken by other studies such as in Nejati, Mohamed, and Omar (2014), where the majority of residents of two touristic islands in Malaysia perceive the positive economic, social and cultural impacts of tourism to be larger than their negative environmental impacts.

Although the process could have been much more participative, it is important to underline that this was the first time the Municipality of Chios made an effort to develop a strategy for Tourism. One critical recommendation is therefore the need for the Municipality to strengthen and broaden the participative process around such a challenging vision and strategy, namely: 1) to discuss the proposed strategy with a large number of stakeholders (e.g. as in Heimerl & Peters, 2019) and if possible with the engagement of residents (e.g. as in Nejati et al., 2014); 2) to implement the final strategy with a constant involvement and assessment of stakeholders, through different participatory methods and a strong monitoring process. Nejati et al. (2014) found that policy makers and tourism development managers need to engage more local representatives in their development plans and activities to better understand their attitudes towards tourism and to ensure a higher support by the community.

The obvious contrast between economic and social, or environmental goals and priorities, show how difficult it is to implement in practice an effective sustainable tourism development strategy. Sustainable tourism development is a complex concept to operationalise, which gives origin to behaviours and patterns that can be contradictory in essence and are not easy to distinguish. For instance, actions such as "reinforce the requalification project of the airport" will improve the economy of Chios, but it will contribute to raise greenhouse gases emissions. However, if the number of flights and boats will not increase in Chios, the destination will not evolve (because tourism in this Island is mainly based on these two ways of transport), and the number of visitors will be kept as low as it is. Finding the balance is a difficult task that implies a constant assessment on the detrimental impacts of tourism on the environment and the local community.

For future policies or actions, it is recommended that the Municipality:

- Evaluates the tourism business network in Chios and the potential of broadening partnerships or strengthening the existent ones;

- Collects the residents' perceptions concerning tourism development, for instance by applying the Sustainable Tourism Attitude Scale (SUS-TAS) measurement;

- Develops a communication strategy to reach a larger audience of target groups and to provide awareness on the benefits but also the dangers of tourism for the Island;

- Implement questionnaires to tourists to collect their perception of the Island;

- Supports a constant assessment of the positive and negative impacts of tourism in environmental, social, cultural and economic dimensions.

This research reinforces the need for more action research methods in collaborative planning for sustainable tourism processes, as also stressed by Heimerl and Peters (2019). It calls the attention for the critical exercise of planning towards a sustainable tourism destination, particularly in the context of Islands.

Future research should attempt to systematise the results of these experiences particularly in Islands not only to better understand the gaps and obstacles of those contexts, but mainly to support and develop guidelines that enable more balanced and sustainable approaches to tourism strategies. Fragile planning and governance systems, weak participatory processes and assessment structures can only lead to unsustainable tourism development and a fragile future for Islands. It requires a strong state intervention and the involvement of various stakeholders (tourists, tourism professionals, governments, residents, etc.) and even to those indirectly included in the tourism value-chain. For being powerful bodies, governments have an even more important role to influence the change towards these sustainable behaviours, because they have the tools and instruments. They can build inclusive

TOURISM   Original scientific paper
Vânia Lopes / Sara Moreno Pires / Rui Costa
Vol. 68/ No. 3/ 2020/ 243 - 260   258

and participatory strategies, by analysing the territory, building a vision, defining strategical goals and actions, monitoring and collecting indicators continuously. Public policies and research can contribute significantly to enhance these territories in supporting strategies for sustainable tourism development considering the UN Agenda 2030.

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