




Article

Employing Ecotourism Opportunities for Sustainability in the Aral Sea Region: Prospects and Challenges

Olimjon Saidmamatov ^{1,*}, Umidjon Matyakubov ¹, Inna Rudenko ¹, Viachaslau Filimonau ², Jonathon Day ³ and Tobias Luthe ^{4,*}

¹ Faculty of Tourism and Economics, Urgench State University, Urgench 220100, Uzbekistan; umidjan.mat@mail.ru (U.M.); irudenko@mail.ru (I.R.)

² Faculty of Hospitality Management, Bournemouth University, Bournemouth BH12 5BB, UK; vfilimonau@bournemouth.ac.uk

³ School of Hospitality and Tourism Management, Purdue University, West Lafayette, IN 47907, USA; gjday@purdue.edu

⁴ Department of Civil, Environmental, and Geomatic Engineering, Swiss Federal Institute of Technology, 8093 Zurich, Switzerland

* Correspondence: saidolimjon@gmail.com (O.S.); luthet@ethz.ch (T.L.)

Received: 19 October 2020; Accepted: 5 November 2020; Published: 6 November 2020



Abstract: The paper examines ecotourism in the Aral Sea region of Uzbekistan, an area with a fragile environment that has faced ecological crises and requires careful sustainable development. It looks at the supply side of ecotourism by examining Uzbekistani tour operators' awareness of benefits derivable from promoting ecotourism in the region, and the local tourism industry's motives to engage in this development. As a research methodology, the results of an exploratory survey of travel agents and tour operators highlight the policy-making and management interventions required for the more effective promotion and development of ecotourism in the Aral Sea region. The paper analyzes the challenges and opportunities associated with promoting ecotourism activities in the Aral Sea region in pursuit of sustainable regional development, improved livelihood for the local population, employment opportunity and income source creation, and enriched service exports. Key findings from the study show that stakeholders are aware of ecotourism's value and are motivated to implement ecotourism in the region, but they have limited experience, competence, and international networks to promote and market ecotourism products and services. Local stakeholders have raised the issue that infrastructure development and access to microfinance are their greatest needs from local authorities in Uzbekistan.

Keywords: ecotourism; sustainable development; Aral Sea region; explorative study

1. Introduction

The tourism industry has emerged as one of the leading service industries in the global economy in recent decades [1]. The gradual development of tourism and the change of its status within society and economy go hand in hand with scientific and research activities in this sphere [2]. Contributing a significant share of the global gross national product and the total employment of many countries, tourism has become the lead economic branch of numerous countries [3]. The tourism sector accounts for about 7% of world exports and 10% of world GDP [4]. Tourism is integrated in 400 industries, annually provides more than USD 1.5 trillion in revenue, and is actually the only industry in the world that has shown steady growth in recent years [5].

The Aral Sea Basin (ASB)—extending to five Central Asian countries, Afghanistan, and a small part of Iran—is a fragile ecosystem threatened by man-made ecological crises. Environmental impacts in the region could lead to the collapse of ecosystems, the deterioration of the health and livelihoods of local populations, and the threatening of sustainable development of the region [6]. It is therefore critical that regional development takes into account the environmental issues at hand. The Aral Sea region, covering northwest Uzbekistan, has many historical, archaeological, and ecological sites. The unique nature of the existing ecosystems and their flora and fauna suggests this area has great potential for ecotourism opportunities. Uzbekistan, which has the most important tourist potential in the Central Asian region, is one of the oldest centers of world civilization. More than 7000 historical and architectural monuments with invaluable spiritual heritage are located in the ancient cities Samarkand, Bukhara, Khiva, and Shakhrisabz, which are included on the UNESCO world heritage list [7]. Uzbekistan has a very strong competence in cultural, heritage, pilgrimage, and rural tourism, while ecotourism is considered a new, emerging direction of tourism in the country [8].

The modern development of tourism is based on the authentic quality of space and resources. For these reasons, and especially for its own long-term sustainable development, the tourism economy in Uzbekistan has to protect, improve and maintain the rational use of space and resources as its top priority. Ecotourism can contribute to environmental protection and conservation. It is a way to raise awareness of environmental values, and can serve as a tool to finance the protection of natural areas and increase their economic competence [9]. Because of the special relationships common between the resources and local communities of protected areas, ecotourism's potential as a supplementary or alternative livelihood for local communities is frequently emphasized [10]. Given that ecotourism involves multiple goals, it inevitably involves stakeholders with different interests, roles, and responsibilities [11,12].

Despite government interest in ecotourism development [13], its use has not been systematically studied with empirical evidence to assess the ways in which tourism stakeholders in Uzbekistan conceptualize ecotourism in the first place [14,15]. The purpose of the paper is to understand the perspectives on ecotourism among local stakeholders (i.e., travel agents, guides, tour operators) by exploring the ways in which Uzbekistani tourism stakeholders conceptualize ecotourism. Using data gathered from a quantitative, explorative survey of 86 travel agents and tour operators in Uzbekistan, this paper confirms that nature-based tourism activities form a small but promising part of the local tourism industry, and argues that local stakeholders are highly aware of ecotourism's non-monetary benefits. The research examines the potential of ecotourism development to strengthen sustainability in the Aral Sea region, and its questions ask how ecotourism can increase well-being and sustainability in the Aral Sea region. The study's goals are to (a) conduct an exploratory study of local stakeholder awareness of ecotourism, and (b) assess key stakeholders' perceptions of the market potential and opportunity for ecotourism in the Aral Sea region.

This research provides important insights for the development of ecotourism in the Aral Sea region, and fills an important gap in such research in the current literature.

2. Literature Review

2.1. Ecotourism and Sustainable Development

2.1.1. Benefits and Challenges of Ecotourism for Sustainable Development

Sustainable development through tourism has been an important topic of discussion in recent years [16]. Tourism is a major agent of transformation [17]. Wherever it occurs, tourism development changes society and its environment. Development brings new value to local resources and new strains on the existing infrastructure [18]. In addition to contrary evidence of tourism being a net contributor to poverty reduction and alleviation, tourism also contributes substantially to resource consumption and global change [19,20]. It is therefore critical that tourism development is undertaken to maximize benefits for the destination's community [21].

The development of ecotourism, a form of sustainable tourism, has been an important factor in the development of emerging destinations [22]. When it comes to ecotourism, there are different definitions and interpretations of the term. Hector Ceballos Lascurain, a Mexican environmentalist, coined the term ecotourism in 1983, defining it as “travelling to relatively undisturbed natural areas with specific objective of studying, admiring and enjoying scenery and its wild animals and plants” [23]. Since then, ecotourism has been described as “responsible travel to natural areas that conserves the environment and improves the well-being of the local people and involves interpretation and education” [24]. The key principles of ecotourism cover decreasing the negative environmental impact, increasing cultural and environmental awareness, and offering positive experiences for visitors and economic empowerment for the local population, while enhancing sensitivity to the host country’s environmental and economic policy [25,26]. Sustainable tourism is the freedom of tourist traveling, satisfying their economic, social, and aesthetic needs, while also preserving the characteristics of the local natural and social environment, and the cultural and historical heritage [3]. Ecotourism has been shown to preserve threatened biodiversity and enhance local economies in remote regions [27], though some researchers [22,28] argue that the specific meaning and implications of the term are not clearly articulated. At least three elements of ecotourism can be distinguished: first, the experience of close contact with nature and people from different cultures; second, the choice of tourism forms that maximize revenues for poorer people rather than large (international) tourism companies; and third, reducing the overall environmental impact of travel [29]. Ecotourism has the potential to benefit the environment by contributing to environmental protection and conservation. It is a way to raise awareness of environmental values, and can serve as a tool to finance the protection of natural areas and increase their economic competence [9].

Because of the special relationships common between the resources and local communities of protected areas, ecotourism’s potential as a supplementary or alternative livelihood for local communities is frequently emphasized [10]. Given that ecotourism involves multiple goals, it inevitably involves stakeholders with different interests, roles, and responsibilities [11,12]. Ecotourism development usually involves a wide variety of stakeholders, including tourists, residents, governments, managers, and so on [30,31]. As the description of ecotourism is made more complex and inclusive of multiple purposes [32], in practice it becomes increasingly difficult to meet various intentions simultaneously [19,33], mostly when confronted with complex natural, social and economic situations [10].

The importance of ecotourism has long been recognized politically, publicly and scholarly, and the related research agenda has grown significantly in the past two decades [34]. A seminal paper [35] effectively summarized the progress in ecotourism research and highlights that past studies have primarily been concerned with five major themes, namely (1) the supply of ecotourism activities, (2) the demand for ecotourism products and services, (3) the role of various institutions in planning, managing, and monitoring the development of ecotourism, (4) the impacts of ecotourism, and (5) the relationship between ecotourism and other tourism types and non-tourism economic activities. According to [35], the research within these five themes is, however, unbalanced, in that an increasing number of studies are examining the growing demand for ecotourism and the resultant accelerating impacts of ecotourism activities. Such themes as the supply side of ecotourism remain under-studied, and further research is required to expand this important field of knowledge [36]. Interestingly, the call for more research on the supply side of ecotourism was first made in 1999 (see a seminal study by Sirakaya et al. [37]), but the response to this call has apparently been insufficient to date [38]. Indeed, the review paper by Weaver and Lawton [35] suggests that the bulk of supply-side studies have focused on ecotourism venues operating, in particular, on protected areas. Further, scholarly interest in the industry providing ecotourism services has been limited in that the prime focus of existing research has been on the business success of ecotourism ventures [39]. The motives of tour operators and tourism businesses to engage in ecotourism have been studied to a much lesser degree [40].

The motives of tour operators and tourism businesses to engage in ecotourism can be intrinsic and extrinsic [36]. Such ecotourism stakeholders as policy-makers and destination management professionals should strive to comprehend these motives so as to design appropriate measures encouraging business engagement in ecotourism [29].

Arguably, the goal should be the “right” balance of motives; while tour operators and tourism businesses can be driven by a genuine desire to promote low-impact tourism in a specific destination (the intrinsic motive), it is critical to sustain this desire with tailored supportive actions and dedicated incentive mechanisms (the extrinsic motive). If one motive is absent or insufficiently articulated, it is fair to expect that tour operators and tourism businesses may gradually drop their initial intention to invest in ecotourism. This underlines the importance of recognizing the needs and wants of all ecotourism stakeholders, especially power- and finance-holders, from the outset of ecotourism projects [41]. Indeed, if a tour operator is intrinsically motivated to engage in ecotourism but national policy-makers do not see potential in developing ecotourism in a specific destination—and therefore provide no suitable support—then this “miss-match” in expectations may result in an unsuccessful business investment. Likewise, if policy-makers are willing to promote ecotourism in a specific destination as a vehicle for socio-economic development and/or environmental conservation, but a tour operator is only motivated by short-term financial gains, then this may lead to a conflict of interest, with subsequent challenges in ecotourism planning and management [42]. Ideally, all ecotourism stakeholders should understand the perspectives of each other and work collaboratively toward a mutual goal of sustained ecotourism development in a given destination [32]. This is particularly important in the context of developing countries and remote destinations, where the lack of resources and traditions of democratic governance may not only undermine the immediate success of ecotourism but also endanger the long-term well-being of natural ecosystems and local communities [43]. Nevertheless, ecotourism is often viewed as an easy entry into niche tourism markets, drawing on a perceived “inexhaustible” supply of natural products and gesturing toward ideals of sustainability and environmental awareness [28].

2.1.2. Ecotourism in Uzbekistan

The Aral Sea region is abundant with historical, archaeological, and ecological sites. The unique nature of the main river banks and their flora and fauna suggests that these places have great potential for ecotourism opportunities. The main functions of ecotourism—to protect natural areas, provide competitive tourism experience, and enhance local economies through nature protection, environmental education, and rural empowerment—may stimulate the rapid development of tourism, as well as other sectors of the economy, withhold the ongoing environmental degradation of the Aral Sea region, and improve the socio-economic well-being of the local population [14]. However, alarmingly, there is little awareness on the demand side (i.e., tourists) and the supply side (i.e., tour operators) about the ecotourism potential of the lower Amudarya state’s biosphere reserve, the Aral sea shore’s ship cemetery in Muynak, ancient Khorezm fortresses (i.e., Ayazkala, Tuprakkala), and especially the Nukus Art Museum named after Savitsky [15].

Uzbekistan has been taking extensive measures to promote ecotourism that can significantly improve living standards, create new jobs, and strengthen international relations. The successful implementation of ecotourism development in Uzbekistan shows the importance of properly understanding the scope and value of this advancement, as a factor of the whole state’s sustainable development. Ecotourism opportunities in Uzbekistan are diverse and rich, including Ugham Chatkal State Natural Park, the riparian forests in the delta of the Amu Darya River, the region of environmental disaster in the Aral Sea, desert terrain and the Kyzyl Kum desert, and the mountains and lake Nuratin Aydarkul in the Farish district of the Jizzakh region [13].

The tourism–recreation complex in the Uzbek economy, and its effective management, have been developed by Khamidov [44], who identified the index of ecological tourism in protected natural areas and determined possibilities for increasing the share of ecotourism in the gross domestic product (GDP) by increasing the income of ecological tourism. The concept and current conditions of ecotourism

in the case of the Khorezm region are analyzed, and recommendations are provided for further development [45]. The model of ecotourism development using protected natural areas in the Aral Sea Basin has been developed and tourist itineraries have been developed based on the Lower Amudarya State Biosphere Reserve, the Sultan Uvays Mountains, the Ustyurt Plateau, Sudoche and Saigachia, and the Aral Sea ecotourism potential [15]. Furthermore, theoretical and methodological issues surrounding the development of ecotourism in the Republic of Karakalpakstan are explored to raise the problems and their solutions, given the tourism potential assessment of Karakalpakstan, including analyzing new ecotourism destinations in the region [13]. Khalilova and Allaberganov [46] defined ways to solve the Aral Sea basin problem, the current conditions and the improvement of the ecological situation, and recommendations to create tourist zones in the region.

2.2. Tourism in Uzbekistan

2.2.1. Current Tourism Development in Uzbekistan

Uzbekistan, which has the most important tourist potential in the Central Asian region, is one of the oldest centers of world civilization. More than 7000 historical and architectural monuments with invaluable spiritual heritage are located in the ancient cities Samarkand, Bukhara, Khiva, and Shakhrisabz, which are included on the UNESCO world heritage list [7]. Uzbekistan has very strong competences in cultural, heritage, pilgrimage and rural tourism, while ecotourism is considered a new, emerging direction of tourism in Uzbekistan.

Modern tourism development is based on the authentic quality of space and resources. For that reason, and especially for its own long-term sustainable development, the tourism economy in Uzbekistan has to protect, improve, and maintain the rational use of space and resources as its top priority. Most incoming tourists to Uzbekistan visit in order to enjoy the cultural heritage of Tashkent, Samarkand, Bukhara, and Khiva—mainly their historical buildings and delicious foods. Most of the touristic load is concentrated in three cities: Samarkand, Bukhara, and partially in Khiva.

With the new government's introduction in 2016, many strategic reforms have been taking place to promote the tourism potential of Uzbekistan. The cancellation of the Uzbek visa for over 80 countries and the removing of bureaucratic barriers to tourism investors are truly supporting the liberalization of the tourism market in Uzbekistan [47]. In 2019, over 6.7 million tourists visited the country, while the figure was 2.7 million in 2017. About 250,000 people are employed in the hospitality market of Uzbekistan [48]. International tourism is becoming an important source of foreign exchange, job creation, and economic growth in the country.

Uzbekistan has been taking extensive measures to promote ecotourism that can significantly improve living standards, create new jobs, and strengthen international relations. The successful implementation of ecotourism development in Uzbekistan shows the importance of properly understanding the scope and value of the advancement, as a factor of the whole state's sustainable development. Ecotourism opportunities in Uzbekistan are diverse and rich, including Ugham Chatkal State Natural Park, riparian forests in the delta of the Amu Darya River, the region of environmental disaster in the Aral Sea, the desert terrain and the Kyzyl Kum desert, and the mountains and lake Nuratin Aydarkul in the Farish district of the Jizzakh region [13].

2.2.2. Tourism Development in the Aral Sea Region

The Aral Sea region has an abundance of historical, archaeological and ecological sites. The unique nature of the main river banks and their unique flora and fauna suggests that these places have a great potential for ecotourism opportunities. The main functions of ecotourism—to protect natural areas, provide competitive tourism experience, and enhance local economies through nature protection, environmental education, and rural empowerment—may stimulate the rapid development of tourism, as well as other sectors of the economy, withhold the ongoing environmental degradation of the Aral Sea region, and improve the socio-economic well-being of the local population [49].

Some researchers [13,15] have suggested there is little awareness on the demand side (i.e., tourists) and supply side (i.e., tour operators) about the ecotourism potential of the lower Amudarya state's biosphere reserve, the Aral sea shore's ship cemetery in Muynak, ancient Khorezm fortresses (i.e., Ayazkala, Tuprakkala), and especially the Nukus Art Museum named after Savitsky (Figure 1).



Figure 1. Map of Aral Sea basin in Central Asia (Source: Nations Online Project (2018). Map of Aral Sea basin in Central Asia. <https://www.nationsonline.org/oneworld/asia.htm> [50]). Source: Nations Online.

Because the Aral Sea region is not very accessible, most tour agencies prefer not to focus on travel to the Sea. It is associated with comparatively poor infrastructure (i.e., road, electricity) and noncompetitive service at hotels and restaurants in comparison with Samarkand and Tashkent [13]. However, to increase people's well-being and livelihoods in the Aral Sea region, policy-makers must stimulate all touristic units so as to increase the quality of the services provided, leading to marketing and the promotion of destinations in the long-term [51]. To diversify tourism in Uzbekistan, encouraging tourists to stay at least 1–2 nights more in the Aral Sea region is recommended (i.e., Nukus, Muynak or the seashore). While observing local travel agencies, the authors came across brilliant solutions to attract more tourists. An established tour agency in Khiva Islambek Travel includes a travel route to the Aral Sea and its surrounding areas.

Tourists arriving in Khiva drive to the Aral Sea while passing through the 5 or 10 ancient fortresses during their 10 h journey (Figure 2). Long trips are favored by tourists when they want to discover more about the sea, desert, fortresses and lakes, while a short trip is less expensive and provides a general introduction to the Aral Sea and its surroundings. The desert's beauty and dry continental weather help visitors explore more about the climate and environmental situation in the region. Passing through canyons and staying overnight on the seashore expands visitors' insights into the enormous industrial potential of the 1960s. Rich flora and fauna show the region's diverse nature and climatic conditions. Indeed, the ancient Khorezm fortresses (i.e., Ayazkala, Tuprakkala) teach visitors about early human civilization in the region in the 3rd through to the 1st century BC [15].

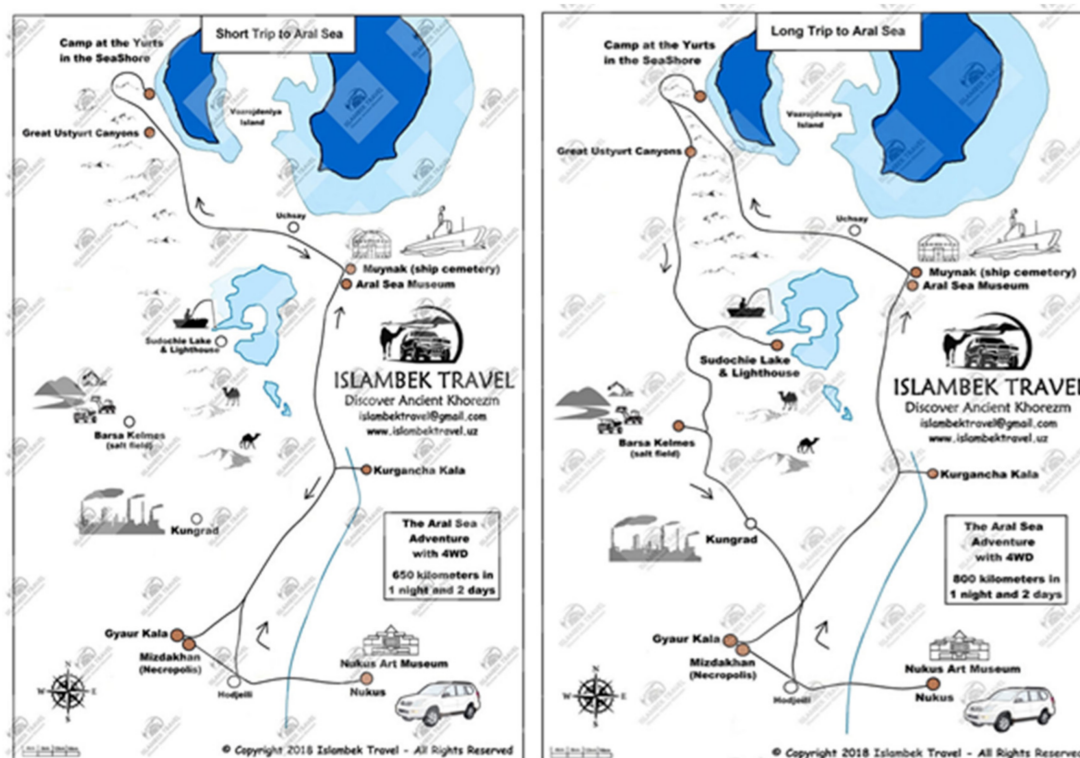


Figure 2. Short and long trips to the Aral Sea (Source: Courtesy of Murodjon Jumaniyozov, founder of Islambek Travel <http://islambektravel.uz/> [52]). Source: Islambek Travel.

3. Methodology

3.1. Survey Design

A quantitative survey was designed to collect the perspectives of local stakeholders in the Uzbek tourism sector to examine the scope of ecotourism development in the Aral Sea region of Uzbekistan. The survey aimed at (1) establishing the motivations of tourism businesses in Uzbekistan to engage in ecotourism, (2) assessing how important the specific roles of ecotourism for local (destination and community) development are to tourism businesses in Uzbekistan, (3) evaluating the extent of business understanding of the “classical” attributes of ecotourism, (4) identifying the determinants of the successful provision of ecotourism products and services in Uzbekistan, and (5) outlining the key operational barriers to ecotourism development in the Aral Sea Region.

Six ad-hoc measures to determine business motivations were designed based on the literature review [37]. The literature claims that tourism businesses are driven by intrinsic and extrinsic motives when deciding on how or why to engage in ecotourism [37]; examples of such motives were extracted for use in this study. The measures were operationalized using a five-point Likert scale ranging from “Strongly agree” to “Strongly disagree”.

To assess how important the specific roles of ecotourism for local destination development are to tourism businesses in Uzbekistan, nine original measures, which Kontogeorgopoulos and Chulikavit [40] studied for the perceptions of ecotourism among travel agents and tour operators in Thailand, were adopted. These measured the extent of agreement among Uzbek tourism businesses concerning the value provided by ecotourism for tourism businesses, tourists, and local communities in the Aral Sea Region. The measures included, among others, such values as profit-making, environmental conservation, and environmental education, to mention a few (Appendix A). The measures were operationalized using a five-point Likert scale.

Thirteen measures to evaluate the extent to which tourism businesses in Uzbekistan understand what ecotourism involves were adopted from Kontogeorgopoulos and Chulikavit [40]. These were

operationalized using a five-point Likert scale and sought to establish the extent of the business association of various ecotourism attributes (for example, fun/relaxation versus education/conservation) with ecotourism provision in the Aral Sea region.

To identify the determinants of the successful provision of ecotourism products and services in the Aral Sea region, 12 ad-hoc questions were designed aiming to measure the extent to which tourism businesses in Uzbekistan agree with the importance of various factors in their engagement with ecotourism. The factors the importance of which was measured were *institutional* (availability of interest-free bank loans, dedicated governmental support, external marketing, and externally facilitated training opportunities), *demand-related* (sufficient demand from domestic and international tourists, including availability of direct flights from major European cities), and *supply-related* (support from local communities, availability of sufficient local transport, hotel and catering infrastructure, and availability of local tour guides). The measures were ad-hoc, as no past research has examined the potential of ecotourism in Uzbekistan. They were operationalized using a five-point Likert scale, and ad-hoc questions were developed for the survey. Six tourism faculties familiar with ecotourism research reviewed the questions to confirm the approach's face validity. A pre-test was conducted among a short list of six stakeholders that led to minor changes to the survey.

Finally, to outline the key operational opportunities of ecotourism in the Aral Sea region alongside barriers to its successful development, the last set of questions was designed to shed light on the quality of (transport, accommodation, and catering) infrastructure in the region, the reasons for "passiveness" of local tour operators and travel agents in promoting/providing ecotourism, and the scope for engaging local communities in the provision of ecotourism products and services.

3.2. Survey Administration

The survey was distributed among local tourism stakeholders (i.e., tour guides, hotels, travel agencies, and the State Committee for Tourism Development). Telegram is a popular social media platform in Uzbekistan, and the survey was distributed using an official Telegram group of Uzbek Tourism state committee stakeholders, to which all tour agencies, guides, hotels, museums, and NGOs are subscribed. Over 500 stakeholders subscribe to this group. The survey was announced and distributed to the stakeholders during the low-tourist season in February 2020. Eighty-six local stakeholders could allocate time to complete the survey questions online.

4. Findings

Eighty-six valid responses were collected when the survey was distributed to the Telegram group with over 500 tourism stakeholders. Fifty percent of the sample was represented by tour operators and travel agents, followed by hotels (29%). The rest of the sample was composed of tourist attraction managers, foodservices, and representatives of non-governmental organizations involved in ecotourism promotion and development in Uzbekistan. Fifty-two percent of the study participants had one or more ecotourism products already in operation in the Aral Sea region, while the rest of the sample had either considered offering such a product or were at the design stage.

Table 1 shows the motivations of tourism businesses in Uzbekistan to engage in ecotourism in the Aral Sea region. Extrinsic motives (i.e., revenue generation) dominate the sample, with the majority considering ecotourism an opportunity to make money and take advantage of governmental incentives. Intrinsic motives (i.e., local employment) are also strong, with a large number of businesses seeing ecotourism as a vehicle for environmental conservation and local community engagement.

Table 1. Motives of tourism businesses to engage in ecotourism.

Motive	Strongly Agree (5)	Agree (4)	Neither, Nor (3)	Disagree (2)	Strongly Disagree (1)	Mean	SD
	Percentage of Respondents (<i>n</i> = 86)						
This is simply the right thing to do	25.6	38.4	30.2	4.7	1.2	3.83	0.56
To conserve the environment	23.3	38.4	32.6	5.8	0	3.79	0.62
To improve lives in local communities	32.6	37.2	25.6	2.3	2.3	3.95	0.5
To employ local people	36	41.9	18.6	2.3	1.2	4.09	0.52
To make money	29.1	43	19.8	4.7	3.5	3.9	0.64
To take advantage of governmental incentives	19.8	41.9	27.9	5.8	4.7	3.65	0.86

Table 2 indicates how important the specific roles of ecotourism in local destination development are to tourism businesses in Uzbekistan. It shows that profit-making, although seen as important by many businesses within the sample, does not represent the most important role of ecotourism. Environmental conservation, community education, and public awareness building are assigned more important roles.

Table 2. Importance of ecotourism for local destination development.

Motive	Strongly Agree (5)	Agree (4)	Neither, Nor (3)	Disagree (2)	Strongly Disagree (1)	Mean	SD
	Percentage of Respondents (<i>n</i> = 86)						
Contribute financially to environmental conservation	34.9	47.7	15.1	1.2	1.2	4.14	0.56
Promote conservation awareness	26.7	52.3	18.6	1.2	1.2	4.02	0.68
Increase tourist awareness of environmental impacts	27.9	47.7	23.3	1.2	0	4.01	0.5
Provide authentic tourist experiences	29.1	39.5	25.6	4.7	1.2	3.91	0.74
Educate community members	37.2	38.4	19.8	2.3	2.3	4.06	0.62
Provide fun and adventure to tourists	31.4	45.3	20.9	1.2	1.2	4.05	0.76
Take place in rural and remote locations	34.9	41.9	19.8	3.5	0	4.08	0.72
Generate profits for businesses	18.6	48.8	27.9	3.5	1.2	3.8	0.76
Involve only certain types of tourists	23.3	40.7	25.6	9.3	1.2	3.76	0.82

Table 3 demonstrates the extent to which tourism businesses in Uzbekistan understand the main attributes of ecotourism. It shows good levels of understanding, with such attributes as authenticity, environmental education, and local community benefits dominating the sample. The importance of fun and relaxation is less pronounced, thus indicating that tourism businesses correctly understand why ecotourism should be promoted and developed.

Table 4 shows the determinants of the successful provision of ecotourism products and services in the Aral Sea region, as perceived by Uzbekistani tourism businesses. It suggests that the under-developed tourism infrastructure, including the availability of qualified tour guides, in the Aral Sea region represents a major barrier to ecotourism development. The lack of demand from major tourism markets in Europe is another critical impediment. Interestingly, governmental support is seen as sufficient for ecotourism development, and marketing does not seem to be problematic. This may be partially attributed to domestic tourists being, at the moment, prime consumers of ecotourism in the Aral Sea region.

Table 3. The importance of specific attributes of ecotourism.

Motive	Strongly Agree (5)	Agree (4)	Neither, Nor (3)	Disagree (2)	Strongly Disagree (1)	Mean	SD
	Percentage of Respondents (n = 86)						
Safety	46.5	45.3	7	1.2	0	4.36	0.42
Relaxation	14	64	18.6	3.5	0	3.88	0.56
Fun	16.3	51.2	29.1	3.5	0	3.8	0.64
Environmental conservation	46.5	40.7	7	4.7	1.2	4.27	0.34
Comfort	29.1	38.4	24.4	7	1.2	3.87	0.52
Natural authenticity	41.9	31.4	22.1	1.2	3.5	4.07	0.66
Cultural authenticity	43	31.4	20.9	1.2	3.5	4.09	0.54
Education about Uzbek culture	33.7	45.3	15.1	4.7	1.2	4.06	0.48
Environmental education	43	41.9	12.8	1.2	1.2	4.24	0.34
Adventure	29.1	48.8	16.3	4.7	1.2	4	0.38
Benefits to local communities	34.9	41.9	16.3	4.7	2.3	4.02	0.56
Price	27.9	40.7	22.1	8.1	1.2	3.86	0.68
Novelty	22.1	44.2	27.9	3.5	2.3	3.8	0.62

Table 4. The factors contributing to successful provision of ecotourism.

Motive	Strongly Agree (5)	Agree (4)	Neither, Nor (3)	Disagree (2)	Strongly Disagree (1)	Mean	SD
	Percentage of Respondents (n = 86)						
Demand from international tourists	39.5	50	8.1	1.2	1.2	4.26	0.42
Demand from domestic tourists	27.9	48.8	17.4	2.3	3.5	3.95	0.56
Availability of low-interest loans	20.9	52.3	20.9	1.2	4.7	3.84	0.68
Governmental support	24.4	45.3	26.7	3.5	0	3.87	0.64
Support from local communities	30.2	43	24.4	1.2	1.2	4	0.58
Externally facilitated training opportunities	29.1	45.3	20.9	2.3	2.3	3.97	0.62
External marketing	26.7	45.3	25.6	0	2.3	3.94	0.64
Transport infrastructure	34.9	46.5	16.3	1.2	1.2	4.13	0.46
Hotel infrastructure	38.4	44.2	15.1	1.2	1.2	4.17	0.46
Catering facilities	32.6	44.2	19.8	2.3	1.2	4.05	0.42
Availability of tour guides	36	40.7	17.4	4.7	1.2	4.06	0.4
Direct flights from European cities	31.4	41.9	25.7	1.2	0	4.03	0.52

Lastly, tourism businesses in Uzbekistan claimed that local communities in the Aral Sea region could contribute substantially to promoting and developing ecotourism. Their main contribution was seen in providing tour guide services, which is important because local tour guides are a crucial attribute of ecotourism development in the Aral Sea Region. Local infrastructure was seen as a key impediment to ecotourism, with the majority of tourism businesses ranking its quality as poor or very poor. In particular, tourist accommodation was considered inadequate to meet the expectations of tourists (93% of study participants ranked it as average or below). Catering and transport facilities were also ranked as inadequate (83.7% and 79.1% of study participants marked these as average and below, respectively). The main reasons behind the unwillingness to actively promote ecotourism in the Aral Sea region of Uzbekistan are as follows: lack of experience (in the design and development of ecotourism products and services), lack of competence (in promoting ecotourism products and services), and lack of international networks (social capital) (to promote and market ecotourism products and services). Cumulatively, these factors accounted for over 50% of responses. Lack of demand, closely linked to limited marketing skills, was also frequently mentioned (about 20% of responses), thus indicating another area for intervention. Lastly, the under-developed tourism infrastructure of the Aral Sea region and the main demand for ecotourism coming from domestic tourists, who were far from wealthy, led to shorter ecotourism tours and their limited profitability [15]. Of all study participants, 80.9% highlighted that ecotourists spent less than USD 200 a day, while staying in the Aral Sea region, on average, no more than two days.

5. Discussion and Conclusions

This research clearly identified that the stakeholders in Uzbekistan's Aral Sea region see a range of benefits from developing ecotourism, including employment, income generation, and the ability to improve people's lives in local communities. The findings differ from the assessment of Kontogeorgopoulos and Chulikavit [40], wherein awareness of ecotourism among tourism suppliers was low. Both intrinsic and extrinsic motivators were important to stakeholders in the region, which differs from similar studies. For example, the survey of ecotourism providers in Thailand [40] showed that Thai operators are only driven by extrinsic motives. In the current study, a large number of providers do not have a clear opinion on these motives, which suggests that tourism businesses tend to (almost equally) have intrinsic and extrinsic motives when deciding on how/why to get involved in ecotourism. We found that Uzbekistan ecotourism stakeholders are notably different, as they perceive their extrinsic rewards as being on almost the same level as their intrinsic rewards. These differences in motivation may result from both cultural differences between Uzbekistan and Thailand, and Uzbek respondents being highly aware of the stress on the Aral Sea environment. This difference has positive implications for policy-making [29], because policy-makers do not need to invest time (and money) to raise eco-awareness in Uzbekistan tour operators and tourism suppliers.

The following action framework is an advisory tool to offer recommendations for the most appropriate decision-makers and stakeholders (Table 5).

Table 5. Action framework.

Level	Coverage	Activity	Responsible Institution
1	Local Aral Sea region (Karakalpakstan and Khorezm region)	1.1. Access to finance with the lowest interest rate encourages local business units to enter the market and offer ecotourism products. 1.2. Improving tourism infrastructure attracts more local stakeholders to be engaged in tourism.	1.1. Juqorgi Kengash of Karakalpakstan; 1.2. Hakimiyat of Khorezm region
2	National Uzbekistan	2.1. Strategic actions of the government ensure a coordinated and sustainable tourism supply chain, and systematic solutions. 2.2. Arranging systematic training is important to raise the knowledge and competence among tourism professionals.	2.1. Uzbek Tourism State Committee; 2.2. Ministry of Higher Education
3	International worldwide	3.1. Establishing a network with international development organizations to support capacity-building and knowledge sharing (i.e., UNWTO, UNESCO) helps to attract global attention to the problems and perspectives of the region. 3.2. Receiving grants and long-term loans from intergovernmental financial institutions (i.e., World Bank, EBRD, ADB) guarantees that local banks can offer more financial support to small businesses in the region.	2.1. Ministry of Foreign Affairs; 2.2. Ministry of Investments and Foreign Trade

Considering the implications of this study, a set of actions has been developed. The actions framework (Table 5) consists of three categories of activities (local, national, and international) with different engaged government authorities. When local needs are supported with international experience and know-how, ecotourism can have the highest level of social, economic, and environmental sustainability in the Aral Sea region of Uzbekistan.

These findings are encouraging and provide a strong foundation on which the growth of ecotourism in the region can be developed. While there is preliminary understanding of concepts around ecotourism, evidence exists that further training and capacity-building is required. Competence, or the knowledge of running an ecotourism business, has to be raised through corresponding courses and exchange visits for managers of tourism activities. Three levels of actions (local, national, and international) must be implemented to improve the ecotourism services in Uzbekistan. Indeed, the lack of experience, or practical skills, required for running ecotourism businesses of the Uzbek tourism stakeholders can be overcome gradually with increasing tourist flows. The findings suggest

that training and skill development are required. These programs may use traditional training mechanisms such as courses and seminars, or use massive online open courses (MOOCs). MOOCs can be an accessible decentralized solution, as all stakeholders cannot regularly attend university courses.

The survey results reveal that stakeholders also see ecotourism as a means to achieve social and environmental goals, including generating funds to support environmental conservation and promote environmental awareness [53]. These expectations align with the experience of other communities seeking to develop ecotourism [54]. The respondents also demonstrate an understanding of the key attributes required to deliver ecotourism experiences. In particular, respondents recognized the needs of incorporating environmental conservation and education in their tourism experiences.

The respondents also identified a series of opportunities and challenges they perceived in developing ecotourism in the region. These factors include consumer demand and supply chain development, support for tourism business development, and infrastructure needs to support tourism development (Table 5). This expectation of government support and involvement in developing ecotourism is consistent with findings from other countries, as ref. [55] notes that government participation is very important in developing countries wherein tourism planning and promotion is directly controlled by public authorities. Stakeholders generally agree that the government of Uzbekistan needs to develop a strategic approach to stimulate ecotourism, from both the demand and supply sides. Government engagement has been shown to ensure the sustainable development of the tourism sector, as it guides the private sector's participation [56]. Government is the main initiator for infrastructure development, which can stimulate the private sector to offer a wide range of services based on the created infrastructure [57]. The government plays an important role in developing the region's tourism infrastructure, improving national legislation in this area, restoring cultural, historical, and ecological sites, and creating favorable conditions for tourists [58]. Effective development of the tourism sector is impossible without state regulation [59], coordination, and control by the structures responsible for its development. The government should be a key reformer in developing tourism infrastructure, as well as developing and implementing tourism policy [60]. Without the foundations of infrastructure development and other policy frameworks, the private sector does not consider the industry worthy of investment [61].

Respondents identified limited infrastructure as a critical impediment to tourism development in the Aral Sea region. Lack of infrastructure (i.e., transportation) is the problematic aspect of and barrier against ecotourism development. Providing high-quality infrastructure, which requires long-term strategic actions by the government, is an important enabler of tourism development, including ecotourism. These findings suggest that an important factor in ecotourism development in the region will be the development of transport and road infrastructure. Partnership with development organizations (i.e., UNDP, UNEP), financial institutions (i.e., World Bank, ADB), and tourism organizations (i.e., UNWTO) can offer a chain of systematic solutions. Local stakeholders mentioned that key destinations (i.e., Aral Sea shore, Muynak ship cemetery, and ancient Khorezm fortresses) need specific attention to increase tourists' turnover. These actions, while benefiting tourism development, will stimulate sustainable development in the region and improve local quality of life.

The findings also suggest that a need exists for increased training and capacity building in ecotourism, and for financing and microfinancing to support the development of new ecotourism businesses. Specifically, stakeholders noted that ecotourism development is constrained by the inability of entrepreneurs and small tourism businesses to access capital to meet the needs of the ecotourism market. One solution to this is providing tourism business development support to local tourism stakeholders, and access to finance at affordable low-interest rates. These are indispensable resources for local tourism sector stakeholders wishing to increase their supply of the relevant ecotourism services, such as opening a guest house or guiding and offering camel trips. The issues of training, capacity building and financial support for business development will require both government and local NGO responses to address the concerns. Indeed, to ensure ecotourism development meets international standards, tourism stakeholders in Uzbekistan should consider establishing strategic

partnerships with international development organizations (i.e., UNWTO) and financial institutions (i.e., EBRD).

It is generally believed that ecotourism is not well developed in Uzbekistan, even though there is high potential and existing tour operators do not offer such touristic packages or services. The survey indicated there is awareness of ecotourism's benefits among local tourism stakeholders, but rather low awareness and support from the state authorities. Thus the results and recommendations drawn from the study can inform decision-makers, for better policy-making and management of the tourism sector in Uzbekistan.

Uzbekistan is a young country (being made independent in 1991) with as yet limited experience in ecotourism (in contrast to, for example, Thailand), and stakeholders are different in having both extrinsic and intrinsic motives. Stakeholders are aware of ecotourism's value and are motivated to implement ecotourism in the region, but they have limited experience, competence, and international networks to promote and market ecotourism products and services. Thus policy interventions, at both the national and international level, have to target these bottlenecks.

The Aral Sea region of Uzbekistan has significant potential as an ecotourism destination. Ecotourism offers the region a sustainable, environmentally friendly means of development. The development of ecotourism has seen broad acceptance by the key stakeholders in the region's tourism industry, who see significant benefits both for themselves and the community. Nevertheless, to meet the region's potential, challenges at the both business and government levels of the tourism system must be addressed. Businesses and entrepreneurs need support in financing ventures to meet the opportunity and, while there is general awareness of ecotourism's needs, additional training and capacity-building are required. As members of an emerging destination, tourism operators must build demand for their operations and establish relationships with members of both domestic and international distribution chains. From a governmental perspective, infrastructure will be required to support the region's growth. Despite the challenges, recognition by both policy-makers and tourism industry stakeholders of ecotourism's benefits provides a positive foundation for future market development.

This case study can be related to other post-soviet countries located in Central Asia and the Caucasus, for example, which had a similar high potential for ecotourism development and similar starting socio-economic conditions, as well as a lack of awareness from the main stakeholders and poor infrastructure. Indeed, the Aral Sea region is directly influencing the ecological conditions in Kazakhstan, Turkmenistan, Kyrgyzstan, Tajikistan and Afghanistan. The case study's outputs can be replicated in the decision-making of these respective neighboring countries.

Author Contributions: O.S. and U.M. developed the paper with the supervision of V.F., J.D., I.R., and T.L. Contribution by authors: conceptualization, O.S., V.F.; methodology, V.F.; software, V.F.; validation, J.D., T.L.; formal analysis, I.R., J.D.; investigation, T.L., U.M.; resources, U.M., V.F.; data curation, O.S.; writing—original draft preparation, O.S., V.F., J.D.; writing—review and editing, I.R., T.L.; visualization, J.D., V.F.; supervision, V.F., J.D.; project administration, O.S., U.M.; funding acquisition, T.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research did not receive external funding. APC is funded by ETH Zurich.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Survey Questionnaire

Academic Survey on “Ecotourism in the Aral Sea region”

The purpose of this academic survey is to analyze the current status and future development of ecotourism in the Aral Sea region. The project is conducted by PhD students of Urgench State University. The answers provided will be anonymous and will never get publicized.

1. I organize excursions to the Aral Sea region (seashore, Muynak, Nukus, fortresses)

- Yes
- no

2. I am a

- Hotel representative
- Tour guide
- Travel agent
- Member of tourism department
- Restaurant and cafe
- Museum
- NGO and public authorities

3. I am located in

- Nukus/Muynak/Aral Sea
- Khiva/Urgench
- Samarkand/Bukhara
- Tashkent/Fergana valley

4. I _____eco tour packages to the Aral Sea region

- have existing
- am planning
- Never want

5. To what extent the following represents a motive for you to engage in ecotourism

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
This is simply the right thing to do					
To conserve the environment					
To improve lives in the local communities					
To employ local people					
To make money					
To take advantage of governmental incentives					

6. To what extent do you agree that ecotourism should

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Contribute financially to environmental conservation					
Promote conservation awareness					
Increase awareness of tourists					
Provide authentic tourism experiences					
Educate community members					
Provide local employment					
Provide fun and adventure to tourists					
Take place in rural and remote locations					
Generate profits for businesses					
Involve only certain kinds of tourists					

7. Which of the following, in your opinion, can be classified as part of ecotourism in the Aral Sea region?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Agritourism					
Desert tourism (i.e., riding camel)					
Gastronomic tourism (national food, prepare fishing foods)					
Recreation tourism (hot sand, saline lakes)					
Hunting tourism					
Tour to Badai Tugai nature reserve					
Ornithological tour in the Aral Sea region					
View of the mighty Amudarya River					
Dining at the yurt					
Fishing in the calm backwaters of the Amudarya					
Arts and crafts in Aral Sea region					
Tour to Ship Cemetery in Muynak					
Horse cart ride					
Folklore show					
Participate in and see preparation of national bread					

8. To what extent the following attributes are important for a “typical” eco tour

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Safety					
Relaxation					
Fun					
Environmental protection					
Comfort					
Natural authenticity					
Cultural authenticity					
Education about Uzbek culture					
Environmental education					
Adventure					
Benefits to local communities					
Price					
Novelty					

9. To what extent the following factors are important for your future engagement in ecotourism in the Aral Sea region

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Demand from international tourists					
Demand from domestic tourists					
Availability of low-interest bank loans					
Governmental support					
Support from local communities					
Externally facilitated training opportunities					
External marketing					
Transport infrastructure					
Hotel infrastructure					
Catering facilities					
Availability of tour guides					
Direct flights from major European cities					

10. Based on your professional experience, in which ecotourism activities can local unemployed people best engage in Aral Sea region? (select ONE option only)

- Opening a guest house
- Providing guided services
- Providing camel riding services
- Cooking traditional local foods

11. If the flow of ecotourism increases, what are the TOP 3 potential destinations in Aral Sea region:

- Aral Sea shore
- Muynak ship cemetery
- Ancient Khorezm fortresses (i.e., Ayazkala, Tuprakkala, Kyzyk kala)
- Nukus Museum of Applied Arts
- Amudarya river shores
- Badai Tugai Nature Reserve
- Desert camping

12. Based on your professional experience, how much money does a tourist spend daily in the Aral Sea region?

- Less than \$100
- \$100–\$200
- \$201–\$300
- More than \$300

13. Based on your professional experience, how many days does a tourist spend in the Aral Sea region (excluding Khiva)?

- Less than a day
- 1–2 days
- 3–4 days
- 5 days or more

14. How would you rank the quality of the following facilities?

	Very Poor	Poor	Average	Good	Very Good
Infrastructure (i.e., road, water)					
Accommodation (i.e., hotel, guest house)					
Transportation (i.e., flight, vehicles)					
Catering (i.e., restaurant, cafe)					

15. Do you feel that an increasing number of tourist visits to Khiva can increase tourist visits to the Aral Sea?

- Yes, fully agree
- Partially agree
- No, I am not sure
- No, this is not logical

16. Why are local tour operators passive in Nukus, Khiva, and Urgench in comparison with Samarkand and Tashkent? Please, choose the TOP 3 factors.

- Lack of experience
- Lack of competence
- Lack of international network
- Lack of marketing skills
- Lack of demand
- Lack of access to finance (i.e., commercial loan).

References

1. Ekanayake, E.; Aubrey, L. Tourism Development and Economic Growth in Developing Countries. *Int. J. Bus. Financ. Res.* **2012**, *6*, 61–63.
2. Repík, O. On the Issue of Growth and Development within the Context of Tourism. *Czech J. Tour.* **2015**, *3*, 127–146. [[CrossRef](#)]
3. Petrovic, M.; Jelica, M. Sustainable Tourism as Part of a Comprehensive Environmental Monitoring. A Study of Serbia. *J. Environ. Tour. Anal.* **2013**, *1*, 30–42.
4. World Travel Organization. International tourism highlights international tourism continues to outpace the global economy. *UNWTO* **2019**, *1*, 1–24.
5. United Nations. Sustainable tourism and sustainable development in Central Asia. *UN* **2019**, 4–8. [[CrossRef](#)]
6. Saidmamatov, O.; Rudenko, I.; Pfister, S.; Koziel, J. Water–Energy–Food Nexus Framework for Promoting Regional Integration in Central Asia. *Water* **2020**, *12*, 1896. [[CrossRef](#)]
7. Matyakubov, U.; Matjonov, B.; Kalandarov, J. Uzbekistan possesses the most considerable tourist potential in Central Asia. *Eur. Fachhochsch.* **2016**, *2*, 96–98.
8. Airey, D.; Shackley, M. Tourism Development in Uzbekistan. *Tour. Manag.* **1997**, *18*, 199–208. [[CrossRef](#)]
9. Sunlu, U. Environmental Impacts of Tourism. *Séminaires Méditerranéens* **2003**, *57*, 263–270.
10. Xu, J.; Lu, Y.; Chen, L.; Liu, Y. Contribution of tourism development to protected area management: Local stakeholder perspectives. *Int. J. Sustain. Dev. World Ecol.* **2009**, *16*, 30–36. [[CrossRef](#)]
11. Shams, A. Towards a quantification model: The accountability of the for-profit and non-profit organizations in the High Mountains of Sinai Peninsula. *Int. J. Tour. Anthropol.* **2012**, *2*, 185–212. [[CrossRef](#)]
12. Liu, C.; Li, J.; Pechacek, P. Current trends of ecotourism China's nature reserves: A review of the Chinese literature. *Tour. Manag. Perspect* **2013**, *1*, 16–24. [[CrossRef](#)]
13. Allanazarov, K.; Alimov, A. The model of the development of ecotourism in special protected areas. Uzbekistan in the Central Asia Region: Geography, Geoeconomics, Geoecology. In Proceedings of the International Scientific and practical Conference, Tashkent, Uzbekistan, 14–15 June 2019.

14. Kamaletdinov, U. Opportunities for Creating Tourism Clusters in the Aral Sea Basin. *Bus Daily*. 2018. Available online: <http://www.biznes-daily.uz/ru/gazeta-birja/58050-vozmojnosti-sozdaniya-turistichskogo-klastra-v-rgion-priaralya> (accessed on 19 June 2020).
15. Alimov, A. Main Directions and Prospects of Development of Ecological Tourism in the Republic of Karakalpakstan. Ph.D. Thesis, Karakalpak State University, Nukus, Uzbekistan, December 2018.
16. NOAA. Assessment for Sustainable Tourism. 2011. Available online: https://nmssanctuaries.blob.core.windows.net/sanctuaries-prod/media/archive/management/international/pdfs/day2_assessment_manual.pdf (accessed on 22 May 2020).
17. Becken, S.; Hay, J. *Tourism and Climate Change: Risks and Opportunities*; Channel View Publication: Clevedon, UK, 2007; pp. 48–54. Available online: <http://en.bookfi.net/book/1125941> (accessed on 10 May 2020).
18. Murphy, P. Tourism as a community industry—An ecological model of tourism development. *Tour. Manag.* **1983**, *4*, 180–183. [[CrossRef](#)]
19. Gossling, S.; Scott, D.; Hall, C.; Ceron, J.; Dubois, G. Consumer behavior and demand response of tourist arrivals to climate change. *Ann. Tour. Res.* **2012**, *39*, 36–58. [[CrossRef](#)]
20. Scott, D.; Hall, C.; Gossling, S. *Tourism and climate change: Impacts adaptation and mitigation. Contemporary Geographies of Leisure, Tourism and Mobility*, 1st ed.; Routledge: London, UK, 2012; pp. 76–79.
21. Ross, S.; Wall, G. Evaluating ecotourism: The case of North Sulawesi, Indonesia. *Tour. Manag.* **1999**, *20*, 673–682. [[CrossRef](#)]
22. Ahmed, S.; Diffenbaugh, N.; Hertel, T. Climate volatility deepens poverty vulnerability in developing countries. *Environ. Res. Lett.* **2009**, *4*, 4–6. [[CrossRef](#)]
23. Higman, J. *Ecotourism: Understanding a Complex Tourism Phenomenon*; Elsevier: Amsterdam, The Netherlands, 2007; pp. 1–19.
24. International Ecotourism Society. What is Ecotourism? Available online: <https://ecotourism.org/> (accessed on 4 June 2020).
25. Das, M.; Chatterjee, B. Ecotourism: A panacea or a predicament? *Tour. Manag. Perspect.* **2015**, *14*, 3–16. [[CrossRef](#)]
26. Vaughan, D.; Androtis, K. Urban residents’ attitudes towards tourism development: The case of Crete. *J. Travel Res.* **2003**, *42*, 172–185.
27. Buchley, R. *Ecotourism: Principles and Practices*; CABI Publishing: Wallingford, UK, 2009; pp. 32–39.
28. Hall, D. Rural tourism development in south-eastern Europe: Transition and the search for sustainability. *Tour. Res.* **2004**, *6*, 166–176.
29. Fennel, D.; Dowling, R. Ecotourism policy and planning: Stakeholders, management and governance. *Ecotourism Policy Plan.* **2003**, *1*, 331–344.
30. Ceballos, L. Ecotourism as a worldwide phenomenon. In *Ecotourism: A Guide for Planners and Managers*; Lindberg, K., Hawkins, D., Eds.; The Ecotourism Society: North Bennington, VT, USA, 1993; pp. 12–14.
31. Santarem, F.; Paiva, F. Conserving desert biodiversity through ecotourism. *Tour. Manag. Perspect.* **2015**, *16*, 176–178. [[CrossRef](#)]
32. Stone, M. Community-based ecotourism: A collaborative partnerships perspective. *J. Ecotourism* **2015**, *14*, 166–184. [[CrossRef](#)]
33. Becken, S. Operators’ Perceptions of Energy Use and Actual Saving Opportunities for Tourism Accommodation. *Asia Pac. J. Tour. Res.* **2013**, *18*, 72–91. [[CrossRef](#)]
34. Fennel, D.A. *Ecotourism*, 5th ed.; Routledge: Oxford, UK, 2020; pp. 24–28.
35. Weaver, D.; Lawton, L. Twenty years on: The state of contemporary ecotourism research. *Tour. Manag.* **2007**, *28*, 1168–1179. [[CrossRef](#)]
36. Swan, C.; Morgan, D. Who wants to be an eco-entrepreneur? Identifying entrepreneurial types and practices in ecotourism businesses. *Int. J. Entrep. Innov.* **2016**, *17*, 120–132. [[CrossRef](#)]
37. Sirakaya, E.; Sasidharan, V.; Sonmez, S. Redefining Ecotourism: The Need for a Supply-Side View. *J. Travel Res.* **1999**, *38*, 168–172. [[CrossRef](#)]
38. Zeppel, H.; Beaumont, N. Climate change and sustainable tourism: Carbon mitigation by environmentally certified tourism enterprises. *Tour. Rev. Int.* **2014**, *17*, 161–177. [[CrossRef](#)]
39. Lundberg, C.; Fredman, P. Success factors and constraints among nature-based tourism entrepreneurs. *Curr. Issues Tour.* **2012**, *15*, 649–671. [[CrossRef](#)]

40. Kontogeorgopoulos, N.; Chulikavit, K. Supply-side Perspectives on Ecotourism in Northern Thailand. *Int. J. Tour. Res.* **2010**, *12*, 627–641. [CrossRef]
41. Osman, T.; Shaw, D.; Kenawy, E. Examining the extent to which stakeholder collaboration during ecotourism planning processes could be applied within an Egyptian context. *Land Use Policy* **2018**, *78*, 126–137. [CrossRef]
42. Njoroge, J.M. Climate change and tourism adaptation: A literature review. *Tour. Hosp. Manag.* **2015**, *21*, 95–108.
43. Wondirad, A. Does ecotourism contribute to sustainable destination development, or is it just a marketing hoax? Analyzing twenty-five years contested journey of ecotourism through a meta-analysis of tourism journal publications. *Asia Pac. J. Tour. Res.* **2019**, *24*, 1047–1065. [CrossRef]
44. Khamidov, O. Improvement of Management Mechanisms in the Development of Ecological Tourism in Uzbekistan. Ph.D. Thesis, Tashkent State University of Economics, Toshkent, Uzbekistan, 16 November 2017.
45. Matyakubov, U.R. Perspective Ecotourism Development in Khorezm Region. *Technol. Innov. Econ.* **2017**, *5*, 3–5. Available online: <http://iqtisodiyot.tsue.uz/sites/default/files/maqolalar/Matyakubov.pdf> (accessed on 1 November 2020).
46. Khalilova, K.; Allaberganov, K. Restoration of the ecological balance in the Aral Sea Region: Geography, Geoeconomics, Geocology. In Proceedings of the International Scientific and practical Conference, Tashkent, Uzbekistan, 14–15 June 2019.
47. Lex.uz. Decree of the President of Uzbekistan on Further Development of Tourism №5611 from 5 January 2019. Available online: <https://lex.uz/docs/4562382> (accessed on 2 July 2020).
48. UzDaily. UN General Assembly Adopts a Special Resolution “Sustainable Tourism and Sustainable Development in Central Asia”. Available online: <https://uzdaily.uz/en/post/53803> (accessed on 1 November 2020).
49. Rudenko, I.; Lamers, J. *The Aral Sea: An Ecological Disaster*; CUL Initiatives in Publishing, 2010. Available online: <https://ecommons.cornell.edu/bitstream/handle/1813/55717/8-6.pdf?sequence=1> (accessed on 1 November 2020).
50. Nations Online Project. Map of Aral Sea Basin in Central Asia. Available online: <https://www.nationsonline.org/oneworld/asia.htm> (accessed on 30 October 2020).
51. Weaver, D. Can sustainable tourism survive climate change? *J. Sustain. Tour.* **2011**, *19*, 5–15. [CrossRef]
52. Islambek Travel. Trip to Aral Sea. Available online: <http://islambektravel.uz/page2html> (accessed on 28 June 2020).
53. Tekken, V.; Kropp, J. Sustainable water management-perspectives for tourism development in north-eastern Morocco. *Tour. Manag. Perspect.* **2015**, *16*, 325–334. [CrossRef]
54. Kajan, E.; Saarinen, J. Tourism, climate change and adaptation; review. *Curr. Issues Tour.* **2013**, *2*, 167–195. [CrossRef]
55. Bhuiyan, M.; Siwar, C.; Ismail, S.; Islam, R. The role of home stay for ecotourism development in east coast economic region. *Am. J. Appl. Sci.* **2011**, *8*, 540–546. [CrossRef]
56. Simpson, M.; Gossling, S.; Scott, D.; Hall, C. *Climate Change Adaptation and Mitigation in the Tourism Sector: Frameworks, Tools and Practices*; CAB Direct: Egham, UK, 2008; pp. 17–19.
57. Simpson, M. Community benefit tourism initiatives a conceptual oxymoron. *Tour. Manag.* **2008**, *29*, 1–18. [CrossRef]
58. Salaev, S.; Alimov, O. Development of tourism infrastructure of the Republic of Karakalpakstan. *J. Econ. Educ.* **2017**, *2*, 87–88.
59. Reichel, A.; Uriely, N.; Shani, A. Ecotourism and Simulated Attractions: Tourists’ Attitudes towards Integrated Sites in a Desert Area. *J. Sustain. Tour.* **2008**, *16*, 23–41. [CrossRef]
60. Mukanov, A. Main directions of government regulation development of sphere tourism in Kazakhstan. *J. Tour. Recreation Zones* **2012**, *27*, 57–58.
61. Baum, T.; Szivas, E. HRD in tourism: A role for government. *Tour. Manag.* **2012**, *29*, 783–794. [CrossRef]

Publisher’s Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).