



The impact of a green tourism environment on achieving sustainable tourism development: A field study of a sample of tourists in the holy city of Karbala

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Abstract:

In consideration of the increased calls for the preservation of the environment in all its elements as the capital of the tourism industry. In order to preserve the natural, historical, and cultural tourism resources for continuous use in the present and distant future, the concept of green tourism has emerged very rapidly. Green tourism is an important export industry due to its dependency on the natural elements together with its different resources and riches, besides the physical elements constructed by humans to draw tourists, and it plays a significant role in sustainable development, which is an interface that represents images of the development of people and countries in all areas, and they are related directly to the environment as they aim at accomplishing development goals on one hand. While on the other hand, environmental protection and sustainability. In this regard, the tourism industry is one of the most important sectors that help promote economic growth and, therefore, develop economic, social, and cultural development. This research aims at identifying the role of green tourism and its contribution to development and sustainable development.

Keywords: Tourism, Green Tourism Environment, Sustainable Development

Introduction

Tourism is considered to be one of the elements of modern sustainable development practices, especially the concept of green tourism that concentrates on the direction of tourism towards environmentally unique tourist attractions, mainly, organized tourism, as well as on risk management associated with the environment, health, and safety, and is built on the basis of a balanced ecological footprint. Consequently, sustainable development cannot be reached without a green tourism environment. This was highlighted by UNESCO in the context of World Decade for Cultural Development when it stated that the cultural heritage should be used as a powerful development tool for active tourism strategy implementation where the cultural element becomes one of its cornerstones. Tourism is an important sector of economy of many countries due to the fact that it serves as an important source of economic resources and creates jobs in the labor market. Besides, tourism activities create new economic opportunities. Tourism influences employment and economic activities directly and indirectly. What is more, development of tourism can cause a number of important changes in employment structure, living standards, incomes, and wealth distribution, amongst other factors. Thus, tourism can be considered an important activity and



sector, which can affect economic and social development processes. At the same time, development of tourism brings about positive impacts in cultural, social, and environmental spheres. First of all, tourism can help to implement cultural exchange between tourists and the local community, to raise awareness about cultural resources, and to protect them. Second, appropriate development of tourism activities will help to conserve natural resources and motivate communities and tourism organizations to behave in an ecologically responsible way. This research paper examines problems in tourism with special focus on the importance of green tourism in development of sustainable tourism. The development of green tourism is an important step towards balanced development of economy, society, and environment. It helps to promote sustainable development by opening new channels in tourism markets and by attracting tourists interested in green places. Green tourism can help in promoting sustainability of economic and social development process through ensuring continuity and year-round character of tourism activities. In such a way, green tourism is expected to help in development of tourism programs of high quality and profitability and in rational distribution of economic benefits from tourism activities. This means that green tourism will stimulate tourists' stays at destination places, increase demand for tourism services and provide economic benefits to local communities. At the same time, green tourism will help in protecting natural resources and in alleviating the pressure of tourism activities on natural resources. Tourism has always been known since ancient times as a natural phenomenon that stimulates people to move from one place to another for different reasons. Besides tourists looking for an escape from the monotony, noise, and pollution of the urban environment, the significance of green tourism in the sustainable development sphere makes a vital contribution to the global economy sometimes being more profitable than other economic sectors. It is an export industry whose profits reach the level of oil revenues in some countries. The purpose of this research is to demonstrate the influence of green tourism on sustainable tourism development and find out how it can be reached through the development of the components of green tourism. The research is structured into three sections: the first one deals with green tourism environment, the second one – with sustainable development, and the third one – with the influence of green tourism on sustainable development.

Research Methodology

First: Research Problem: The problem lies in the increasing negative environmental impacts associated with the growth of tourism development projects in tourist areas to meet the rising demand for tourism. The anticipated influx of tourists, the current expansion of hotels, and the potentially perilous future could lead to the destruction of the natural environment, which is one of the main pillars of tourism attraction. The central research question is: **(Does a green tourism environment contribute to achieving sustainable tourism development?)**

Second: Significance of the Research: The current research explores the link between green tourism environment and sustainable development. The concept of green tourism entails the need for working towards meeting the various targets necessary for the preservation of the ecological balance and, hence, protection of natural wildlife including both aquatic and atmospheric environment. The concept of green tourism may lead to the achievement of sustainable development, which is highly important as far as productivity and profitability, job creation, economic diversification, and improvement of infrastructure are concerned. From an institutional perspective of society, sustainable development allows the individuals and society as a whole as well as the various institutions of society to realize their needs and true existence in the present, while,



at the same time, preserving biodiversity and the ecosystem and ensuring establishment of positive and sustainable relations between the human and biological systems to prevent future generations from being denied the development and social justice.

Third: Research Objectives:

1. To identify the concept of green tourism and sustainable development.
2. To highlight the role of green tourism in preserving biodiversity, the ecological system, and tourist facilities, ensuring their sustainability and ability to attract tourists.
3. To study the impact of green tourism on sustainable development.
4. To analyze the tourist demand for a green tourism environment.

First Section: The Basic Principles of a Green Tourism Environment

First: The Concept of Green Tourism

Green tourism is a sophisticated and advanced human trend that seeks to create clean, healthy environments free from all dangers, epidemics, desertification, and pollutants that disrupt life and tamper with the natural order that God intended. It is environmentally friendly tourism that preserves and improves the environment and relies on renewable energy sources that reduce pollution. Emissions, therefore, leave a clean and healthy environment. Green tourism is environmentally friendly tourism that preserves and improves the environment (Ali Kazem Abdullah p38).

Secondly, the importance of green tourism: The importance of green tourism is evident in the following:

1. It protects the environment from pollution. Therefore, it relies on directing tourists towards environmentally distinctive tourist sites, especially tourist facilities and hospitality establishments.
2. Green tourism encourages the use of alternative or renewable energy, such as solar, electric, and wind power.
3. Green tourism helps in establishing green cities with a high level of urban planning.
4. It preserves the natural balance and cultural environmental heritage by developing tourism programs that contribute to environmental protection.
5. It preserves tourist, archaeological, and artistic sites by regulating tourist entry to historical and archaeological sites in balanced numbers (i.e., maintaining capacity).
6. Helping to revive traditional and artisanal industries, as there is a relationship between tourism in general and these industries due to the desire of most tourists to purchase souvenirs.
7. Green tourism redistributes development and income between regions. This explains the imbalance between cities and remote areas, and how green tourism has helped to rebalance this imbalance (Prof. Dr. Muthanna Taha Al-Houri, Prof. Dr. Ismail Muhammad Ali Al-Dabbagh p161).
8. Green tourism plays an important role in the formation of national income (GDP). The tourism sector is an integral part of the national economy and contributes to the formation of national income (Hadeer Abdel Qader p18).
9. It helps develop human resources in the face of environmental challenges. (Ali Kazem Abdullah p45).



Third: Conceptual Approaches to Green Tourism, Tourism Development, and Sustainable Tourism Development.

The concept of tourism development has witnessed steady evolution since its inception, driven by the growing need for new tourism development models that align with the economic, social, and cultural development of humanity. This is the origin of the terminology used in tourism: development, then sustainable tourism development, and finally green tourism. The main points of convergence and divergence between these tourism development paths can be illustrated through theoretical frameworks, as shown in the following table:

Table (1)

Traditional tourism development	sustainable tourism development	green tourism
1. It emerged from the womb of economic development	1. It emerged from the womb of tourism development	1. It emerged from the womb of sustainable tourism development.
2. General Concept: Achieving tourism-related economic growth accompanied by structural changes in the tourism economy.	2. General Concept: Integrating the traditional development dimension with the environmental dimension.	2. General Concept: Defining and characterizing an environmentally friendly tourism development model.
3. Developing tourism in terms of the value and quality of its output.	3. Establishing a tourism development model that minimizes environmental damage	3. Ensuring that tourism development has positive environmental impacts, or no negative impacts at all.

Source: Ali Kazem Abdullah, Green Tourism, previous source, p. 51.

Fourth: Objectives of Green Tourism

1. Achieving high rates of economic growth and tourism's contribution to the balance of payments, as well as providing employment in the tourism sector.
2. Meeting market demand for tourism needs and achieving economic prosperity in the tourism sector.
3. Integrating the environmental dimension with the developmental dimension.
4. Sustainable development.
5. Building an environmentally friendly development path.
6. Its objectives are strategic (Dr. Raouf Mohammed Al-Ansari p112).

Section Two: Intellectual Foundations of Sustainable Tourism Development

Development in tourism may be viewed as the creation of facilities and services to cater for the needs of the tourists. Tourism development is capable of providing new sources of employment, raising incomes, and improving economic situations within the area. The notion of tourism development is multi-dimensional and involves tourism demand and supply, geography of tourism products and



services, tourist movement, and impacts of tourism on its destinations and hosts. This chapter explores a number of important concepts involved in tourism development with special focus on those concepts that contribute to the development of the tourism industry:

1. The concept of tourism development and its components, elements, objectives, and forms.
2. Stages of preparing a tourism development plan.

First: Tourism Development and its Components: Tourism development can be considered among the newest areas of development and it bears significant relations to other development activities. Tourism development resembles comprehensive development in the sense that all the aspects of comprehensive development are part of tourism development. Therefore, tourism development is seen as a current topic in many nations due to its capacity to help increase real per capita income and being an important source of income for the nation. In this regard, tourism development acts as a means of economic development as increased and improved tourism services help meet the sectoral demands of tourism development. The successful implementation of tourism development requires tourism planning, which refers to a scientific method of developing tourism to the highest extent possible at the least cost and in the shortest period possible.

Second: Components of Tourism Development: These consist of several elements, the most important of which are:

1. Tourism attractions: natural resources (including topography, climate, fauna, and flora) and artificial resources (including parks, museums, and historical and archeological sites).
 2. All forms of transportations including those on land, sea, and air.
 3. Accommodation facilities: commercial (hotels and motels) and non-commercial (guest houses and rented apartments).
 4. Auxiliary facilities including tourism marketing, tourism administration, crafts and banking services.
 5. Infrastructure services including water supply, electric power supply and telecommunications.
- Apart from the above mentioned components, the agencies that implement development also form a part of tourism industry. The development of the tourism industry can be carried out by either the public sector, the private sector, or both (Mustafa Abdul Qadir, p. 197).

Third: Sustainable Tourism Development Goals:

Objectives that sustainable development aims at achieving, through mechanisms and components are:

1. Providing necessary human resources for the tourism industry so that tourism organizations can execute their activities successfully and also integrate modern technologies with social goals and sustainable development through the utilization of modern technologies that serve the society and its goals.
2. Preserving the uniqueness of tourist spots because the appeal of tourists to those spots depends on climate, characteristics, history, or other features of tourist spot.
3. Ensuring the optimization of available tourism resources along with the flexibility needed to meet tourism demands at the local and international levels.
4. Enhancing the quality of life for the community through focusing on the relationship between environmental activities and the community as well as interaction with the environment.
5. Studying the local tourism market to identify the characteristics of incoming tourists and cater to them as much as possible (Zain Al-Abidin Osama, p. 15).



6. Reaching technological and economic development without losing natural capital such as nature and the environment through the establishment of proper institutions, infrastructure, and risk management so that wealth is distributed fairly among generations (Hussein Muhammad Ali Asad, Taha Mahdi Mahmoud, p. 194).

To conclude, the goal of tourism development should be based on sustainable growth of tourism resources. In brief, the goals of tourism development are usually determined in the initial stages of tourism planning process and can be defined as follows (Mustafa Abdul Qadir, p. 197).

❖ **Economic:**

- Increasing income levels, improving the balance of payments, and achieving regional development.
- Providing infrastructure services.

❖ **Social:**

- Providing recreational and leisure facilities for local residents.
- Protecting and fulfilling the social needs of individuals and groups.

❖ **Environmental:**

- Preserving the environment, preventing its degradation, and implementing strict protection measures.

❖ **Political and Cultural:**

- Promoting cultural exchange and increasing communication between peoples.
- Developing political relations between governments in tourist destinations.

Fourth: Forms of Tourism Development:

Forms of tourism development can include:

1. **Resort Development:** This type of tourism focuses on holiday and vacation tourism. A resort is described as an independent entity providing tourist attractions and services intended to entertain, relax and have fun.
2. **Tourist Villages:** This is a type of tourist pattern that is quite popular in Europe and increasingly seen in many other nations. Life in a village is an example of an alternative to urban life, appealing to people living in cities.
3. **Urban Resorts:** This type of resort involves combining land-use planning and social development programs, along with economic aspects that provide the possibility of investments into the development of projects like hotels, resorts, etc. The creation of this resort implies the presence of a unique or primary tourist attraction at the site, such as skiing, a beach, wellness tourism, archeological or religious sites.
4. **Retreat Resorts:** This is a new type of resort that became the world tourist attraction. These resorts are marked by their small size, careful planning and abundance of facilities. They are usually located in remote places like small islands or mountainous areas that can be reached through boats, small airports and narrow roads.
5. **Urban Tourism:** This is a common and well-developed type of tourism in big cities.



6. Adventure Tourism: This form of tourism is intended for a group of tourists, involved in certain activities. Its occurrence is conditioned by the duration of stay and provides opportunities for entertainment and relaxation (Salah al-Din Kharboutli, p. 130).

7. Water Sports Tourism: This type of tourism depends on the presence of water (sea or lake). Duration of stay varies depending on the activities performed (diving, water skiing, swimming, yacht racing or boating, etc.).

Section Three: Statistical Analysis of the Impact of Green Tourism Environments on Sustainable Tourism Development

First: Data Collection Method: Data were collected through the use of a questionnaire, consisting of a number of items, each provided with impact assessment. The respondents had to assess the items according to the scale.

Second: Target Sample: In this part of the research, the researcher addressed tourists and tourism-related organizations of different sectors of the tourism industry. Hundred questionnaires were chosen as the sample for the study.

Statistical Methods Used: A five-point Likert scale was applied, where the maximum impact was rated as "Strongly Agree" (five points) and the minimum – as "Strongly Disagree" (one point). Intermediate levels were: "Agree" (four points), "Neutral/Agree" (three/four respectively), and "Disagree" (two points). Frequency distribution table was made for study variables; weighted means and standard deviation were calculated. A hypothetical average of three was used as the reference value for items in the tourism sector of Iraqi governorates. Statistical analysis led to the results in terms of weighted means, standard deviations and relative importance of responses in the studied samples. The results are shown in the appropriate tables. They will be discussed further in the study.

$$\text{Meaning: } \frac{\sum XiFi}{\sum Fi}$$

That is: = Item response.

= Item frequency. $\bar{X}$

Standard Deviation:

$$\text{That is: } \sqrt{\frac{\sum Fi(Xi - \bar{X})^2}{Fi - 1}}$$

S = Standard deviation.

X_i = Responses of sample members.

F_i = Frequency.

= The arithmetic mean of responses ().

Table (2)

Questions	Weight				standards			
	strongly agree	agree	neutral	disagree	strongly disagree	arithmetic mean	standard deviation	Relative importance
Green tourism has a clear impact	85	8	2	3	2	4.71	0.820	0.942



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on tourism development.								
Green tourism has a clear impact on increasing sales of tourism services.	86	9	2	1	1	4.77	0.679	0.954
Green tourism has a clear impact on determining tourist destinations.	90	6	2	1	1	4.83	0.603	0.966
Green tourism has a clear impact on the number of overnight stays by tourists.	79	11	4	3	3	4.6	0.932	0.92
Green tourism has a clear impact on increasing employment in the tourism sector.	90	7	1	1	1	4.84	0.581	0.968
The arithmetic mean, standard deviation, and relative importance of the impact of green tourism on the hotel sector.						4.75	0.737	0.95

From the findings that have been highlighted in the accompanying table, it is clear that the economic weighted mean is rather high at 4.75, with a standard deviation of 0.737. The importance of the factors as a whole is 0.95. This clearly shows that there is an increased weighted mean compared to the hypothesized mean of 3, meaning that the factors are very important in the research sample. The level of importance will differ from question to question, as highlighted below:

1. Environment and Green Tourism and its Effect on the Development of Sustainable Tourism (X₁): The above results indicate that the weighted arithmetic mean value for item X₁ is relatively high, meaning that the item is significantly important in shaping the attitudes and responses of the



respondents. More specifically, the weighted arithmetic mean is 4.71 and thus exceeds the hypothetical mean of 3. This implies that the majority of respondents support the idea that the green tourism environment positively affects the development of sustainable tourism. In addition, the relative importance of the item is 0.942, and the standard deviation is 1.084. The significant relative importance supports the assumption that the item reflects a major characteristic of the relationship between the green tourism environment and the tourism development. Moreover, the results indicate that the majority of respondents support the idea that the green tourism environment greatly affects the number of occupied beds in the hotels, and consequently the tourism activity. Increase in the green tourism rate increases demand for hotel accommodation during holidays. In case a particular destination is considered to be environmentally friendly, attractive and supportive for green tourism, tourists are ready to pay for hotel accommodation during their holidays. Otherwise, a low green tourism rate may cause reconsideration of tourists' intention to choose hotels for staying. This result highlights the need for creation of the attractive environment from the point of view of environmental friendliness as a tool to attract tourist participation in the tourism activity. Green tourism may contribute to the development of destination attractiveness and willingness of tourists to choose environmentally-friendly destinations. In consequence, there exists a direct interrelation: increase in green tourism rate stimulates willingness to purchase hotel accommodation and participate in tourism activities; and the opposite is true for decrease in green tourism rate.

2. Green Tourism Environment and Tourism Services Sales (X₂): The results indicate that the weighted arithmetic mean for item X₂ is relatively high, reflecting substantial importance for respondents' actions and perceptions. The weighted arithmetic mean is 4.77, which exceeds the hypothetical mean of 3. This means that respondents agree that the green tourism environment positively affects tourism services sales. Relative importance of the item is 0.954, and the standard deviation is 0.679. This significant relative importance confirms the importance of the green tourism environment as a major factor affecting demand for tourism services. A majority of respondents agree that green tourism positively affects hotel room sales and sales of other services. Increase in the green tourism rate stimulates tourists to go on trips including overnight stays because destinations providing green tourism and environmentally friendly services attract tourists to do that. On the contrary, low green tourism rate may prevent from undertaking trips or prolonging the stay, resulting in decrease in hotel occupancy and services sales. Thus, there exists a direct interrelation: increase in green tourism rate stimulates tourist activity, hotel rooms demand and services sales; decrease in green tourism rate yields the opposite result.

3. Green Tourism Environment and Destination Choice (X₃): The results indicate a high weighted arithmetic mean for item X₃, which reflects substantial importance for respondents' evaluations. The weighted arithmetic mean is 4.83, which exceeds the hypothetical mean of 3; the relative importance is 0.966, and the standard deviation is 0.603. High relative importance highlights the significance of green tourism as a major factor influencing tourists' choice of destination. The majority of respondents agree that increase in the green tourism rate influences tourists to choose the destinations where green tourism opportunities exist and where the environment is environmentally attractive. Tourists prefer destinations with natural sights, green tourism



compatible facilities, activities and services. In addition, the results indicate that green tourism may ensure overnight trips during off-seasons; hence, destinations with high green tourism rate can attract tourists all year around. Therefore, there exists a direct interrelation: increase in the green tourism rate increases destination attractiveness and visitors; and vice versa.

4. Green Tourism Environment and the Number of Overnight Stays (X₄): The results indicate a high weighted arithmetic mean for item X₄, which reflects substantial importance. The weighted arithmetic mean is 4.60, which exceeds the hypothetical mean of 3; the relative importance is 0.920 and the standard deviation is 0.932. This means that the respondents regard the green tourism environment as a significant factor influencing tourists' stay duration. The majority of respondents agree that increase in the green tourism rate causes longer stay at destinations providing suitable environment for it, recreational activities and services. Green tourism may ensure hotel bookings during busy season, increasing bed occupancy and tourism activity. On the contrary, decrease in the green tourism rate discourages long stays and forces establishments to find some ways of increasing bed occupancy. Thus, there exists a direct interrelation: improvement in the green tourism environment promotes longer stays and increases hotel demand; decrease in green tourism yields the opposite result.

5. Green Tourism Environment and Employment in the Tourism Sector (X₅): The results provide a high weighted arithmetic mean for item X₅, reflecting substantial importance. The weighted arithmetic mean is 4.84, which significantly exceeds the hypothetical mean of 3; the relative importance is 0.968 and the standard deviation is 0.581. This means that respondents agree that the green tourism environment affects employment in hotels and the tourism sector. Increase in green tourism rate leads to increase in tourist demand, which in its turn results in increase in demand for accommodation, tourism services, recreational activities, transportation, food services and labor. The extent of this influence depends on the characteristics of the destination, its size and development level. Destinations with higher level of green tourism and greater tourist demand will need more labor; whereas destinations with lower level of green tourism will need less labor. Consequently, green tourism may help in creation of jobs and labor market improvement together with development of tourism activity and provision of services. There exists a direct interrelation: increase in green tourism activity increases labor demand in the hotel and tourism sectors; decrease in green tourism decreases employment levels.

Section Four: Conclusions and Recommendations:

First: Conclusions:

1. The world is moving towards green tourism because it does not harm the environment, due to the negative environmental impacts and depletion of natural resources caused by traditional tourism.
2. We observe a looming threat to the future of tourism (the destruction of the natural environment, which is one of the main pillars of tourism) due to the expansion of tourism and the current growth of hotels.
3. Green tourism and sustainable development contribute to stimulating the economy and achieving sustainable development in many countries.



4. Green tourism has a clear impact on tourism development; the more green tourism is offered, the more tourist trips there are (a direct relationship).
5. Green tourism and sustainable development influence the behavior of tourists by determining their destinations.
6. Green tourism has a very clear impact on employment in the tourism sector, thus increasing and developing the economic income of the region in particular and the country in general.
7. Green tourism, tourism development, and employment have a clear and evident impact on increasing income and economic growth. There is a direct relationship between green tourism and employment; the more green tourism increases, the more employment there is, and vice versa.

Recommendations:

1. Encourage the establishment of green tourist cities and link sustainable development with green tourism through the optimal use of heritage and natural resources, bridging the gap left by traditional tourism.
2. Encourage the establishment of green hotels and highlight their importance as a tool for achieving sustainable tourism.
3. Encourage green investments in tourist cities, as these will significantly contribute to revitalizing the economy of those cities if invested correctly.
4. Focus on a systematic approach to marketing, promoting, and showcasing green tourism in the tourist area.
5. Study consumer tourism behavior to develop green tourism and enhance sustainable development.
6. Focus on developing and raising awareness among human resources, as there is a direct relationship between the development and awareness of human resources and the growth of green tourism and its impact on the economy of the tourist area.
7. Attention should be given to developing green tourism due to its impact on supporting and growing the economy and increasing the gross domestic product.

Sources and References

1. Ali Kazem Abdullah: Green Tourism, 1st Edition, Dar Al-Mawasem Press, Beirut, Lebanon, 2015.
2. Dominic Salvador: Statistics and Econometrics, translated by Saadia Hafez Montaser, International Publishing and Distribution House, 1997.
3. Hadeer Abdelkader: The Reality of Tourism in Algeria and Prospects for its Development, Master's Thesis, Faculty of Economic Sciences and Management, University of Algiers, Algeria, 2006.
4. Hassan Kafi and Mustafa Youssef: The Tourism Industry as a Strategic Option for Economic Development, Al-Furat Publishing House.
5. Hussein Kafi: A Modern Vision for Tourism Development, Al-Nahda Al-Masriya, Cairo, 1987.
6. Hussein Muhammad Ali Asad and Taha Mahdi Mahmoud: The Role of Green Tourism in Achieving Sustainable Development: A Study of a Sample of Travel and Tourism Companies in the Holy City of Karbala, Rimah Journal for Research and Studies, Issue 47, 2020.



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7. Mustafa Abdelkader: The Role of Advertising in Tourism Marketing, University Computers for Seminars, 1st Edition, Beirut, 2003.
8. Muthanna Taha Al-Houri, Dr. Ismail Muhammad Ali Al-Dabbagh: The Economics of Travel and Tourism, Al-Warraq Foundation, London, 2000.
9. Raouf Muhammad Al-Ansari: Tourism in Iraq and its Role in Development and Reconstruction, 1st ed., Hadi Press, Beirut, Lebanon, 2008.
10. Salah Al-Din Kharboutli: Sustainable Tourism, Dar Al-Rida Series, Damascus, 2004.
11. Zain Al-Abidin Osama: Website of Abdelhamid Ibn Idris University, Algeria, June 15, 2010.