Comprehensive Journal of Science
Volume (10), Issue (38), (Dec, 2025)
ISSN: 3014-6266

مجلة العلوم الشاملة
المجلد (10) العدد 38 ديسمبر 2025
ردمد: 3014-6266

Economics of Tourism and Sustainable Development

Libya study case

Dr Mohamed Elmayof Dr Alshadli Edwick
Member of staff at the faculty of economic and political science, Tripoli University

m.elmayof@ uot.edu.ly

Received: 13-11-2025; Revised: 20-11-2025; Accepted: 26-11-2025; Published: 8-12-2025

Abstract: Tourism is a global force for Economic and sustainable development. Tourism development brings with it a mix of benefits and costs and the growing field of tourism economics is making an important contribution to tourism policy, planning and business practices. First, questions can be raised about the validity of focusing measures of successes solely on the uncritical use of GNP data. Second, environmental accounting techniques seek to include a wide range of considerations when considering the cost and benefits of particular projects. When subjected to environmental secrutity, the tourism sector can display examples of previously unaccounted overall benefits as well as costs. Additionally, as well as being the preparatory of negative environmental pollution. Tourism is now one of the world's largest industries and one of its fastest growing economic sectors. For many countries tourism is seen as a main instrument for sustainable development, as it stimulates new economic activities. Tourism may have a positive economic impact on the balance of payments, on employment, on gross income and production, but it may also have negative effects, particularly on the environment. Unplanned and uncontrolled tourism growth can result in such a deterioration of the environment that tourist growth can be compromised. The environment, being the major source of tourist product, should therefore be protected in order to have further growth of tourism and economic development in the future.

Although much of the environmental debate focuses on the detrimental effects of economic development, there are also benefits which can be noted. The existence of tourism in remote rural areas can make difference between local shops remaining profitable, and therefore open, or not. Similarly the income and interest derived from tourists help to preserve heritage sites, contributing to restoration and upkeep. National parks and forest provide not only facilitates for tourism. The paper found that tourism sector needs more investment beside substantial reforms in deferent areas, in regard of protect the environments and fight the pollution. Sustainable implies permanence, so sustainable tourism includes optimum use of resources, including biological diversity; minimizing of ecological, cultural and social impact; and maximization of benefits for conservation and local communities. It also refers to the management that needed to achieve this.

The paper provides a theoretical framework for sustainable tourism. It comprises two parts. The first part presents general views on tourism and sustainable economic development, and some opinions on the relationship between tourism and the sustainability. The second part concentrates on strategies and policy instruments

Keywords: tourism, sustainable, growth, deterioration, environment, heritage, preserve

1. Background: Economics and Tourism

Tourism is a major industry globally and a major sector in many economies. According to the United Nations World Tourism Organization (UNWTO), over the past six decades, tourism has experienced continued growth and diversification to become one of the largest and fastest growing economic sectors in the world. The World Travel and Tourism Council (WTTC) estimate that tourism contributed 9.2 per cent of global GDP and forecasts that this will continue to grow to grow at over 4 per cent per annum during the next ten years to account for some 9.4 per cent of Gross Domestic Product (GDP) (WTTC 2014). Over time, an increasing number of destinations have opened up and invested in tourism development, turning modern tourism into a key driver for socioeconomic progress.

The expenditure associated with tourism flows makes a substantial economic contribution to the Libyan economy nationally, by state and by region. In Australia, for example, tourism makes a direct contribution to the economy of $40.639 million in GDP or 3.6% of total GDP and 4.7% of total employment (Australian Bureau of Statistics [ABS] 2010).

These figures increase by a further $31 billion and 377,000 jobs with the inclusion of indirect economic contributions. Changes in this expenditure resulting from shifting destination market shares will impact on export earnings with further changes to GDP and employment. This in itself indicates the importance of an understanding of the role that tourism economics can play in policy formulation (Dwyer, Forsyth & Dwyer 2010).

Much of the tourism literature today appreciates the importance of developing tourism ‘Sustainably’. Whatever the precise meaning of this term, an essential element of a sustainable tourism industry is economic viability. It is sometimes forgotten that the concept of sustainability has an economic dimension alongside its social and environmental dimensions. Economic efficiencies result in less use of resources with potentially less adverse social and environmental impacts from their use. Tourism development is fundamentally driven by business. However, governments play a significant role as partners in tourism development to an extent which is not replicated in most other industries through their extensive engagement, by all levels of government, in tourism planning and strategy, marketing, infrastructure development, land use planning and responsibility for parks, public, natural attractions, and through their role in managing environmental and community impacts of tourism. (Pambudi, et al. 2009. pp. 232–239.)

2. Research problem.

Sustainable tourism and ecotourism have become central concepts in contemporary tourism studies, aiming to balance economic benefits with environmental protection and social responsibility. Traditional tourism, while economically beneficial, often exerts negative impacts on natural resources, ecosystems, and local communities. Unplanned tourism development can lead to environmental degradation, including pollution, habitat destruction, and biodiversity loss (Gössling, 2009; Sharpley, 2009). These challenges have driven the need for sustainable tourism strategies that minimize ecological footprints while promoting conservation.

One of the main research problems in sustainable tourism is the implementation gap between policy frameworks and actual practices. Many destinations, despite having policies promoting sustainability, face difficulties in enforcing regulations or integrating sustainable practices into day-to-day tourism operations. For example, ecotourism initiatives often struggle with insufficient financial support, lack of training for local operators, and inadequate monitoring mechanisms to assess environmental impacts (Honey, 2008; Gössling et al., 2012). This implementation gap limits the effectiveness of sustainable tourism programs and undermines their intended benefits for both the environment and local communities.

Another critical issue is the socio-cultural dimension. Ecotourism aims to empower local communities and preserve cultural heritage, yet there are instances where tourism development leads to cultural commodification or social conflicts. Local communities may be excluded from decision-making processes or fail to receive equitable economic benefits, which diminishes the social sustainability of tourism projects (Scheyvens, 1999; Weaver, 2006).

Ensuring meaningful community participation and benefit-sharing remains a significant challenge in research and practice.

Furthermore, measurement and evaluation of sustainability outcomes present another research problem. There is a lack of standardized indicators and methodologies to quantify the ecological, economic, and social impacts of tourism activities. Without reliable data, policymakers and stakeholders cannot make informed decisions or improve management strategies effectively (Gössling et al., 2012). This highlights the need for integrated research approaches that combine environmental assessments, socio-economic studies, and policy analysis to advance sustainable tourism.

In summary, the research problem of sustainable tourism and ecotourism revolves around three core issues: environmental protection, socio-cultural sustainability, and economic viability. Addressing these problems requires a multidisciplinary approach to design and implement tourism strategies that protect natural resources, empower local communities, and ensure long-term economic benefits. Research in this area contributes to developing practical solutions that bridge the gap between sustainability theory and tourism practice.

3. Measuring Tourism's Economic Contribution.

Tools: (Tourism Satellite Accounts = TSA)

Tourism has grown substantially over recent decades as an economic and social phenomenon. Unfortunately, the development of statistical concepts and frameworks for tourism has not kept pace with the changes in the nature and significance of tourism worldwide and its potential for future growth. The problem with measuring the economic significance of tourism spending is that 'tourism' does not exist as a distinct sector in any system of economic statistics or of national accounts. As a result, tourism's value to the economy is not readily revealed. Tourism activity is "hidden" in other industry activities (accommodation, transportation, telecommunications and so on). Tourism's economic contribution can be measured, however, through the construction of Tourism Satellite Accounts (TSA). TSA extract from the National Accounts the contribution that tourism makes to each other sector of the economy allowing measurement of the true contribution of tourism to GDP or Gross State Product (GSP) and permitting comparison with other economic sectors listed in the national accounts. In TSA, the "tourism industry" is identified from the demand side by measuring the demand for various commodities. This makes it possible to form a link to the supply side of the tourism industry through the identification of tourism commodities and hence to the industries which are characteristic of, or connected to, tourism and to calculation of their relative dependence on tourism generated demand.

TSA provide an internationally recognized and standardized method of assessing the scale and impact of tourism related production and its links across different sectors. TSA can provide a comprehensive database which identifies tourism's role in an economy and provides a rigorous and reliable basis for drawing comparisons between tourism and other sectors in terms of their contribution to the economy, as well as international comparisons.

They provide an invaluable tool for measuring and monitoring the development of tourism and assessing its economic contribution. Countries in which TSA have been implemented are able to gain a much clearer picture of tourism's position within their economy and are thus able to

evaluate more accurately the benefits it offers. Such information is the prerequisite to efficient and effective policy decisions to guide the future development of tourism. In addition, they provide a foundation for more sophisticated analyses of the impact of tourism and the assessment of different policy regimes using techniques such as computable general equilibrium modeling.

TSA, provide a starting point for other more comprehensive approaches to analyzing the overall economic impact of tourism. Researchers have substantial opportunities to develop and compare different measures of tourism yield using TSA.

These include expenditure per tourist, return on capital, profitability, GDP, value added, and employment. Given that TSA distinguish the numbers and expenditure of different tourist markets by origin the yield contribution measures can be developed per tourist by origin market (Dwyer, et al. 2006; Dwyer, et al. 2007). The research reveals that the targeting of tourism marketing is much more complex than simply reaching out to 'high-yield' markets.

Adding environmental and social dimensions to the yield concept, the decision makers have to deal increasingly with trade-offs between economic and environmental and social dimensions, respectively. TSA provide the opportunity for tourism economists to contribute to our understanding of the 'carbon footprint' associated with the tourism industry. The advantage of using the TSA to estimate the carbon footprint is that it ensures that the measure is comprehensive, and incorporates all emissions from all industries which make up tourism. That is, if the relationship between industry production and greenhouse gas (GHG) emissions is known, then it is possible to calculate the emissions which are due to tourism, as measured by the TSA. In addition, since the TSA is extensively used as a measure of the economic contribution of size of the tourism industry, this carbon footprint is an environmental measure which is consistent, in terms of definition of the industry, with the economic measure. Researchers have explored the issues in estimating the GHG emissions from the tourism industry and related activity (Forsyth, et al. 2008). The scope of tourism consists of the economic activities defined as 'tourism characteristic' and 'tourism connected' as defined in the ATSA. Two approaches were employed and contrasted- a 'Production Approach' and an 'Expenditure Approach'. Depending on the approach, tourism contributes between 3.9 per cent and 5.3 per cent of total industry GHG. The GHG emissions have been estimated for 2003-04, the latest year for which detailed industry GHG emissions data are available in a form suitable for this type of analysis. Tourism's GHG emissions are compared with other industries.

Researchers also, extended this analysis to estimate tourism carbon footprint at the sustainable (state) level for the state of the Libya using a methodology which is readily replicable using the state and territory TSA for other Australian states (Hoque, et al. 2010).

4. The Application of More Sophisticated Modeling

Tools: Computable General Equilibrium (CGE) Modeling

TSA are not in themselves modeling tools for economic impact assessment. Tourism's economic impact refers to the changes in the economic contribution that result from specific events or activities that comprise 'shocks' to tourism demand. These changes generate three types of impacts or effects: direct impacts, indirect effects and induced effects. To estimate the economic impacts an economic model is needed. The impact of higher visitor spending is highly sensitive to the assumptions one makes about the economy. Researchers have emphasized that economy wide effects must be taken into account in determining the impacts of increased tourism expenditure on a destination. An expanding tourism industry tends to 'crowd out' other sectors of economic activity. The extent of these 'crowding out' effects depends, in turn, on factor constraints, changes in the exchange rate, the workings of labour markets and the macroeconomic policy context (Dwyer, Forsyth, Madden & Spurr 2000; Dwyer, Forsyth, Spurr & van Ho 2005. pp 325-363).

The study of the economic impacts of tourism shocks has recently undergone a 'paradigm shift' as a result of the use of computable general equilibrium (CGE) models in place of input - output (I-O) models. CGE models are constructed as a series of markets (for goods, services and factors of production), production sectors and demand groups (households).

Each market, sector and household has its own set of economic rules that determine how it reacts to external changes. CGE models consist of a set of equations that characterize the production, consumption, trade and government activities of the economy, CGE models recognize resource constraints and consider the demand, price and income effects flowing from government policies and structural changes in the economy. They incorporate all input-output mechanisms; they incorporate mechanisms for potential crowding out of one activity by another, as well as for multiplier effects. CGE models can guide policy makers in a variety of scenarios arising from a range of domestic or international shocks or alternative policy scenarios. They can be tailored to allow for alternative conditions such as flexible or fixed prices, alternative exchange rate regimes, differences in the degree of mobility of factors of production and different types of competition. The strengths of the CGE approach to assessing the economic impacts of changes in tourism expenditure are many and varied and include the ability: to model business and household demand for goods and services, relative price changes and substitution effects; to take account of the interrelationships between tourism, other sectors in the domestic economy and foreign producers and consumers; to incorporate endogenous

price determination mechanisms; to identify and test underlying assumptions; to allow initial expenditure shocks to originate from anywhere in the economy (Dwyer, Forsyth, Madden & Spurr 2000; Dwyer, Forsyth, Spurr & van Ho 2005).

5. Economic Analyses of Destinations.

Tourism is considered one of the fastest-growing economic sectors worldwide, contributing significantly to GDP, employment generation, investment flows, and infrastructure development in many destinations (UNWTO, 2020). However, while tourism stimulates economic growth, its long-term contribution increasingly depends on sustainable management of environmental resources and the ability of destinations to minimize ecological degradation. Therefore, conducting an economic analysis of tourism requires integrating sustainability principles, which balance economic benefits with environmental conservation and social well-being (Sharpley, 2020).

From an economic perspective, tourism supports local development through revenue generation, foreign exchange earnings, and job creation. In developing destinations, tourism often acts as a strategic tool for economic diversification and regional development (Hall & Page, 2014). Nonetheless, economic dependency on tourism can produce vulnerabilities, particularly where tourism demand fluctuates due to crises, climate change, or political instability. Consequently, sustainable tourism emphasizes resilience by promoting diversified local economies, fair distribution of income within host communities, and long-term investment in local enterprises (Weaver, 2006).

The relationship between tourism and the environment is inherently interdependent. Many destinations rely on natural attractions such as beaches, protected areas, and unique biodiversity, which constitute the core tourism product. However, increased tourism activity may lead to pollution, habitat loss, and excessive consumption of water and energy resources (Gössling et al., 2012). Such environmental degradation reduces the attractiveness of destinations, resulting in negative economic feedback, including reduced tourist arrivals and increased restoration costs. Therefore, environmental protection is not merely an ecological objective but an economic necessity for sustaining destination competitiveness (Buckley, 2012).

Sustainable development within tourism also involves socio-economic considerations. Economic benefits must support local livelihoods through community empowerment, local ownership of tourism enterprises, and participatory planning. Ecotourism, as a development

model, aims to reinvest tourism revenue into conservation and local development while educating tourists about environmental protection (Honey, 2008). However, challenges persist, such as revenue leakage to foreign investors, limited participation of local communities, and inadequate measurement of sustainability outcomes. These constraints emphasize the need for multi-disciplinary planning and strong governance mechanisms (Scheyvens, 1999; Sharpley, 2020).

In conclusion, an economic analysis of tourism cannot be separated from sustainable development and environmental management. Tourism growth must be aligned with high environmental standards, investment in green infrastructure, and inclusive development strategies that ensure local benefits and ecosystem protection. Destinations capable of integrating economic objectives with sustainability principles are more resilient, competitive, and capable of meeting the needs of current and future generations.

6. Valuation of Environmental Resources.

The environment is important in attracting tourism flows with their attendant economic effects. Conservation of valued environmental features can help to maintain tourism visitation and tourism's contribution to the economy. Tourists, however, can also "love the environment to death", impairing the very thing that attracts them and bringing about its deterioration and destruction. Satisfactorily resolving this problem is important to the tourist industry, especially given a limited (and dwindling) supply of pristine environments and with tourism demand expected to grow into the future. Determining, enumerating and measuring environmental costs and benefits can be very challenging. Tourism affects the environment through its interplay with *natural, human,* and *built resources*. Tourism impacts on the environment are both direct and indirect, and often are not easily observable. Conversely, the range and quality of such resources can influence tourism flows. Thus, attention to environmental features of the tourism experience can result in an outward shift of tourism demand thereby increasing producer surplus. Over development, however, can impose costs on industry stakeholders as well as the wider community. Market prices serve as signals or incentives to guide resources and products into their most highly valued uses. If there are no markets for some valuable resources and products or if markets do not function properly, the resulting resource allocation will not be optimal. There are three major sources of market failure that are relevant to the environmental impacts associated with tourism. These relate to lack of property rights to environmental resources, public goods and externalities.

Hotelling proposed that a proxy price could be generated from the maximum travel cost incurred by any individual who travelled to a specific national park and subsequently used to compute the consumer surplus enjoyed by visitors who incurred lesser travel costs (as reported in Arrow and Lehmann, 2006). In the past 25 years, travel cost methods have been used to estimate the recreation and tourism value of more than 50 marine or terrestrial protected areas in at least 25 countries around the globe (Web of Science 2016). The results of these studies have been used to justify government expenditure on protected area management (Beal, 1995; Gurluk and Rehber, 2008; Saraj et al., 2009), to provide new insights into visitor demographics or preferences (Font, 2000; Kim et al., 2010; Benson et al., 2013), and to estimate the likely impact of new or altered site entry fees (Nillesen et al., 2005; Becker, 2009; Pascoe et al., 2014). The inevitable result is overuse, abuse, congestion and quality degradation of increasingly scarce environmental resources. The total economic value of a tourism environmental amenity is composed of its use value (actual use value) and non-use value. Components of non-use value are option, quasioption, existence, bequest, and vicarious value.

7. Economics and Climate Change

Human-induced climate change is an externality on a global scale which, in the absence of policy intervention, is not 'corrected' through any institution or market. Climate change is one of the greatest market failures the world has seen. It presents a global challenge that requires a long-term global solution in order to avoid environmental, social and economic dislocation. The climate is a public good. Those who fail to pay for contributing to GHG emissions cannot be excluded from enjoying climatic benefits and one person's enjoyment of the climate does not diminish the capacity of others to enjoy it also. Markets for relevant goods and services (energy, land use, innovation, and so on) do not reflect the full costs and benefits of different consumption and investment choices for the climate typically, tourism and climate change has been considered as 'a two-way street'. The same as for other industries, the tourism industry contributes to climate change through its generation of GHGs to meet tourist needs. Climate change, in turn has increasing substantial effects on tourism flows, shifting market shares of domestic and international destinations (Forsyth, et al. 2008).

Climate change will directly impact on a country's tourism industry and the benefits it creates through loss or degradation of attractions, the costs of adaptation and replacement of capital infrastructure. Climate has a major influence on destination choice. As a result of changing climatic conditions, tourists are likely to entirely avoid some destinations in favor of others or

else shift the timing of travel to avoid unfavorable climate conditions. Climate change generates both negative and positive impacts in the tourism sector and these impacts will vary substantially by market segment and geographic region. There are 'winners and losers' at the business, destination and nation level. Countries which rely heavily on nature based tourism are likely to be net losers from changing international patterns of tourism as a result of climate change. However, tourism is a footloose export industry, and both suppliers and consumers will cross borders to the extent that a destination becomes less attractive due to climate change.

The carbon impact footprint of tourism refers to how changes in tourism impact on overall GHGs – this depends on its carbon intensity and also on how other industries are impacted on by changes in tourism. Estimation of tourism's carbon impact requires CGE modeling to determine the net changes in the outputs of different industries in the economy. Most policy questions are questions about impact not just intensity. Tourism will be affected by the different types of climate change mitigation policies, all of which will increase the cost base of tourism firms (Hoque, et al. 2010).

Economic impacts of adaptation to climate change in five regions of Australia have also been estimated to 2070 as part of a wider study on Climate Change adaptation (Pham, Simmons & Spurr 2010; Turton, Hadwen & Wilson 2009, pp 449 - 473).

8. Towards Sustainable Tourism Policy

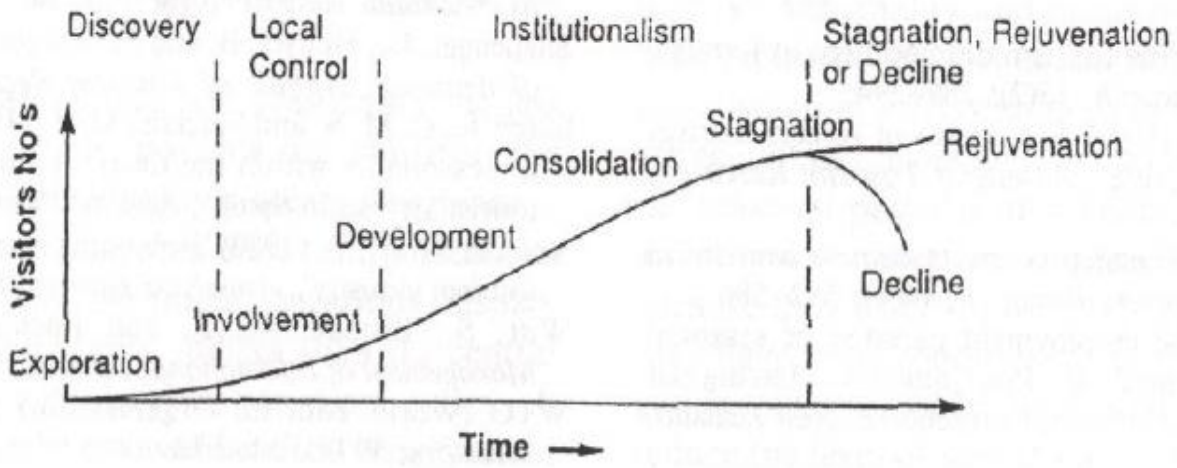
The principle of sustainable tourism was proposed as early as 1988 by the world Tourism organization, with sustainable tourism "envisages as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, and biological diversity and life support systems". Recalling previous declarations on tourism, such as the manila Declaration on world tourism, The Hague Declaration and the Tourism Bill of right and tourist Code, the charter for sustainable tourism approved during the World Conference on sustainable tourism, held in Lanzarote in 1995, underlined the need to develop a kind of tourism that meets both economic expectations and environmental requirement, and respects not only the social and physical structure of its destination but also the local population.

However, what does such a way of understanding tourism development entail? Which are the major consequences of the adoption of a view aimed at ensuring the sustainable use of resources in tourism based on the diversity of opportunities offered by the local economy? From this

perspective, it is useful to underline the principal aspects of sustainability when this is referred to the tourism sector (Cooper et all, 2000).

At the same time, the congestion created by the influx of a greater number of tourists determines degradation in the environments, in the landscape, in the flora and fauna while transport and restaurant services reach levels which are incomputable with an efficient running of the business from an economic point of view. When such a situation reaches drastic limits, the whole region-from an initial situation of a sort of " heavenly isolated paradise" which justified " luxury tourism" – is hit by phenomena of tourist desertification, with serious situations of environmental deterioration, which are frequently irreversible, which are linked with bankruptcy and the flight of the more qualified tourist operators. The five stages of Butler's life cycle theory clearly express the tourist area evolution (Figure1).

Figure 1, Hypothetical Tourist Area Life Cycle



The first stage, exploitation, is characterized by small numbers of adventurous visitors, simple facilities, unspoiled natural, cultural and environmental resources, and undisturbed local communities.

In the next stages, involvement, the local community is engaged in tourism activities: facilities and infrastructure are built; different agencies, authorities and organizations are involved in the development, management and implementation of tourism industry; the tourism market is defined and maintains a balance with other economic activities.

By the development stage, the area is experiencing an exciting and dynamic period of growth and evolution. The destination is clearly defined: attractions have been developed, and planning tourism is undertaken as part of overall development plans for any area. Large numbers of new

visitors continue to arrive, fuelling growth and, at peak periods perhaps equaling or exceeding the numbers of local inhabitants.

In the consolidation stage, the volumes of tourists are still increasing, but a declining rate. The destination is now strongly marketed and tourism is seen as a main instrument for sustainable and local economy, with an identifiable recreational business district containing the major franchises and chains.

Agarwall, (1994) has suggested a post-stagnation phase where a range of possibilities exist. These essentially continued decline, in which visitors are lost to newer resorts and the destination becomes dependent on a smaller geographical catchment for daytrips and weekend visits, or different forms for rejuvenation, in which the area still remains as a tourist resort but deciding on new uses, new customers, new distribution channels and thus repositioning the destinations.

Sustainable tourism is not only a utopian choice, or anyway a privilege, only for the elite, as it was in the past centuries: even in the era of globalization and of tourist activities on a wide scale tourism sustainability is a realistic objective for economic and environmental policies. However, it is worth underlining that the compatibility of the growth in supply of tourist services on one hand with environmental conservation on the other will be notably conditioned by the particular solution given for a series of complex problems, briefly stated hereunder:

Level of concentration of tourist business: the more the supply of tourist services with both fixed and mobile infrastructures which condition it is concentrated in the territory, the higher the risk of damages to the environmental equilibrium (Collins,. et . 2009). Such damages will get worse, especially in developing countries, if pressure of tourist services tends to add up to the pressure on environmental resources of other productive businesses (agriculture, mining, fishing), which already critical in those regions of a particular country, which are highly populated and industrialized. Generally speaking, these costs of congestion will result much higher than the possible economies of scale which can actually be reached in the services and in the infrastructures with the concentration and the spreading of the tourist business themselves. Therefore, both in those countries which are economically advanced, but all in developing countries usually it is to be hoped that a high level of decentralization of tourist activities is achieved through the utilization of advanced “clean” technologies, such as biological agriculture, solar energy and the recycling of wastes.

Integration with the local ambient: a rigorous conservation of the natural environmental, thanks to the maintenance of technological, cultural and traditional values, which have sometimes been perpetuated for centuries in the local populations, which usually seems hard to reconcile with an influx of a massive kind of tourism, inevitably oriented towards a cultural genocide with a show off of its hedonism and its capability of consumption. The defense of the natural environment, especially in poor countries, seems to be linked to the conservation of the traditional culture, in its various expressions: the use of agricultural land, water control, eating habits, social and housing architecture, and use of free time. The creation of a new supply of tourist services should not only respect these local cultural customs but also increase their potentials with the aim of launching a fruitful dialogue between the various elements: the local resident, jealous of his own cultural originality, and the foreign tourist, who is keen on discovering new places and different life styles, in the hope of a tourism that is more responsible towards our common heritage.

Relationship between tourism activities and technological innovations any "ecological scenario" one may assume for the coming decades it is extremely probable that each country will have to face phenomena both of scarcity of certain natural resources (natural and forest resources) and above all, air and water pollution. This means that such problems will no longer be on a national scale but on a worldwide scale. At this point a crucial question crops up: will scientists and those involved in technology scenario now offer in an urgent and under lay able manner?

9. FUTURE PROSPECTS

Given the development of TSA **(**Tourism Satellite Accounts) worldwide it can be expected that more research will be undertaken on tourism's economic contribution to a destination. TSA allow the tourism industry to be better included in the mainstream of economic analysis. Tourism's total economic contribution (both direct and indirect) measures the size and overall significance of the tourism industry within an economy. The research literature may now be expected to contain more studies that compare and analyses the contributions that tourism and its component industries make to key variables such as GDP, value added and employment. TSA provide policy makers with insights into tourism and its contribution to the economy providing an instrument for designing more efficient policies relating to tourism and its employment aspects. As a result of basing more of their research in analyzing data from TSA,

the outputs of tourism economists should become even more relevant to the information needs of destination managers.

TSA provide the basic information required for the development of models of the economic impact of tourism. For example, analysts may use data from TSA to estimate the direct effect of changes in tourism consumption on other industries or on employment. In helping governments and businesses determine the value of tourism to the economy, TSA can also aid in the formulation of strategies for ensuring competitive advantage in this sector. Sustainable TSA present tourism economists with opportunities to investigate tourism's contribution to sub-regions. This has traditionally been a neglected research area given previous data limitation. Tourism economists also have a role to play in analysis of the advantages and disadvantages of 'top down', 'bottom up' and 'hybrid' approaches to the construction of sustainable TSA. TSA can also be used to develop measures of tourism yield.

Researchers have substantial opportunities to develop and compare different measures of tourism yield using TSA. Given that TSA distinguish the numbers and expenditure of different tourist markets by origin the yield contribution measures can be developed per tourist by origin market.

A relatively neglected research topic has been measures of tourism productivity at the industry level. TSA can be used to develop performance indicators such as measures of productivity, prices and profitability for the tourism industry as a whole. They can also be used to explore performance in individual sectors. Tourism researchers now have the data to explore the performance of individual tourism sectors or of the entire tourism industry relative to that of other industries, domestically and internationally.

The topic of economic impact analysis has engaged tourism economists for decades. An economic impact analysis estimates the changes that take place in an economy due to some existing or proposed project, action or policy. A major objective of such estimates has been to inform policy makers as to the appropriate allocation of resources both within the tourism sector itself and between tourism and other industry sectors. Given the advances in CGE modeling over the past decade and a half, which most researchers have contributed to, tourism economists now have the opportunity to play a much more important role in providing information that destination managers can use in policy formulation. CGE models can guide policy makers in a variety of scenarios arising from a range of domestic or international shocks or alternative policy scenarios. They can be tailored to allow for alternative conditions such as flexible or fixed prices, alternative exchange rate regimes, differences in the degree of mobility of factors of production and different types of competition. CGE models can be used to quantify the

effects of actual policies, such as changes in taxation, subsidies or government borrowing, as well as predicting the effects of a range of alternative policies or exogenous expenditure shocks. CGE models are helpful to tourism policy makers who seek to use them to provide guidance about a wide variety of 'what if?' questions, arising from a wide range of domestic or international expenditure shocks or alternative policy scenarios. In tourism, very interesting results have emerged using this technique in areas as diverse as tourism taxation, the impacts of special events, policies in response to human induced tourism crises (terrorism) and other crises affecting tourism destinations (e.g. SARS, foot and mouth disease). Tourism researchers have recently applied CGE modeling to determine who gains and who loses from tourism development together with analysis of the extent to which tourism growth alleviates poverty.

10. Libya and environmental preservation and impacts of leisure and tourism.

Balancing development with protecting delicate natural and historical sites is crucial. However, while improving, infrastructure needs substantial investment to handle mass tourism. Also, Libya's tourism sector is cautiously optimistic, transitioning from a largely undiscovered destination to one actively promoting itself through infrastructure upgrade simplified entry and unique tourists seeking authentic experiences. Before the civil war tourism was developing with 149.000 tourists visiting Libya in 2004, rising to 180.000 in 2007, although this still only contributed less than 1% of the country GDP. The country is best known for its ancient Greek and Roman ruins and Sahara desert landscapes. As of 2025 tourists numbers have returned to approximately 100.000 annually.

Environmental economics involves a wider view of the impact of economic development and growth, taking into account well-being rather than just measuring how much richer people become in monetary terms. Issues such as global warming, acid rain and resource depletion have been highlight as threats to economic growth and even to the future of our species, and critiques and techniques developed by environmental economists can be readily used in the leisure and tourism sector.

First, question can raised about the validity of focusing measures of success solely on the uncritical use of GNP data. Second, environmental accounting techniques seek to include a wide rage of considerations when considering the cost and benefits of particular projects. These include effects on the natural and built environment, as well as raw material and waste product issues. When subjected to environmental scrutiny, the leisure and tourism sector can display

examples of previously unaccounted overall benefits as well as costs. Additionally, as well as being the perpetrator of negative environmental effects, the sector is sometimes the victim of environmental pollution caused elsewhere (Tribe, 1995).

Table 1 show: Estimated distribution for hotels, rooms and beds according to the cities (2022)

Numbers of beds	Numbers of rooms	Numbers of hotels	City
8,000	5,200	110	Tripoli
4,500	3,000	70	Benghazi
2,200	1,600	40	Misurata
2,800	1900	50	Southern area
3,100	2,100	60	Eastern area
1,400	1,000	35	Southern area

Source: Tourism Documentary and Information Centre, Ministry of Tourism Tripoli, Libya, 2022

Libyan has a diversity natural environment including long coast beside Mediterranean Sea. Wide desert and ancient locations category However. Sustainable development suffers from natural and human pressure factors. Which lead to the tied between UNICCO international heritage and sustainable is tourism significant in the tourism planning? Table 1 above the least available information about the Libya tourism sector. Including statically about number of hotels. Rooms furthermore, beds to reflect to support the sustainable tourism development. The table above shows the number of beds in Tripoli the biggest number 1 which was 8000 beds however, the smalls beds was in the southern Libya also the table demonstrated that the large number of beds was also in Tripoli the significant number of rooms in Tripoli whereas the east southern was 2100. In general, the development of tourism infrastructure was very important, and plays a substantial role in the sustainable development.

11. Recommendations

In general, the tourism industry should engage in promoting sustainability as a hallmark for investors. More specifically, investors in tourism should strive to adopt environmentally sound

technologies or other measures to minimize the consumption of local ground water. In the case of water utilization, such measures might be water saving equipment, desalination systems and collecting and utilizing rainwater. Using other types of resources in a sustainable manner is, of course, also crucial. There is a need to use ecological materials and installation renewable sources of energy systems (solar energy) in all new building and new construction. Furthermore there should be an acceleration of installation or solar/wind power in all public work projects of communities where tourism will be introduced. To prevent or minimize the impact of chemical inputs in soil, water and health, one should start utilizing sound ecological methods, including (International Pest management IPM),. Ecological methods need to be applied in all areas utilized for tourism, including in the maintenance of golf courts, gardens and recreational facilities.

* Pollution of ground and coastal waters must be prevented, and recommendations must made (perhaps even legislation) for tourism investors to invest in proper sewage treatment facilities. Appropriate waste disposal systems and ways to separate garbage into organic and non-organic waste should be developed. Organic waste can be composted and possibly reused on hotel gardens or even for local farming. This could be done through collaboration with local residents. Residents could organize themselves and manage the allocated dumping sites, and hence benefits from the system in receiving payment from the hotel for services rendered. A system to separate the different materials, and recycle some should be in place at the landfill site, thus reducing the waste even further.

* To avoid degradation of the natural environment, tourism projects can help finance protected areas and safeguard ecologically sensitive regions against further environment deterioration. By empowering local populations and have them participating in the entire process, sustainability will be ensured as it becomes accepted by and adjusted to the local communities. Also, a protected area might certainly be a suitable tourist-attraction, where tourists can experience amazing nature and learn about conservation and traditional uses of natural resources in the area.

* Investors in tourism should always respect the traditional land tenure system in the area and the traditional user-right systems of resources. In regard to this, the communication and consultation with the local communities about resources-use is important. Tourism investors should not exclude local people from using local resources, and thus take away what they depend on for maintaining their well being. The tourism industry can and must take initiatives

to implement that polluters pay a principle for pollution related to tourism operation. This may be organized and carried out through local tax system or through funds established by the tourism industry for local community development. However, the paid principle should be applied for minor pollution only and should not be developed into a possibly for investors to pay a symbolic fine for imposed irreversible negative impacts on the local environment.

* Inaccurate and/or mild environmental legislation in destination countries may possibly attract more foreign investors contributing to fast economic growth and development, but with environmental damage as a consequence. To avoid the dilemma, destination countries will have to choose between economic development and environmental protection international. Multinational enterprises must be committed to follow the environmental standards of their home country should these be stricter than those at the destinations.

* The tourism industry should promote projects, which are compatible with cultural identity of the local population's way of life. Furthermore, the tourism sector should always make sure it acts in accordance with the cultural heritage, and respect the cultural integrity of tourism destinations. This might be accomplished by defining codes of conduct for the industry and hence providing investors with a checklist for sustainable tourism projects.

12. Conclusion

Tourism, as a world-wide phenomenon, touches the highest and deepest aspirations of all people and it is also an important element of socio-economic and political development in many countries. Government, other public authorities, public and private decision-makers whose activities are related to tourism, and tourists themselves, consider it a priority to protect and reinforce the human dignity of both local community and tourists. Because of this all these agents have registered a growing concern in sustainability as a guiding principle to allow the integration of economic development with environmental and social aspects within tourism policy and strategy.

But the incorporation of sustainability in tourism development is not a self-evident issue but a politically contested one, if the different interpretations of the concept which have been identified are taken into account. These differing, sometimes conflicting, interpretations are not accidental, but rather the outcome of particular ideologies, varies disciplinary backgrounds, value systems and vested interests. Despite the wide range of varying definitions, at its core tourism sustainability lies: strong emphasis to three simple concerns

Clearly different research projects can be done in this area to improve our understanding of tourism's impacts on both developed and developing economies.
As a result of the development of CGE models, changes are expected in the economic impact assessment of special events. Perhaps more than in any other area, tourism economists seems still uncritically wedded to an assessment method based on I-O multipliers which gives exaggerated impacts for special events. Tourism economists have an important role to play in

researching the effects of the workings of labour markets, government subsidies and taxes on event impacts as well as the distributional effects associated with large events. Given that government funding agencies are now demanding that event evaluation be undertaken using state of the art techniques it can be expected that evaluation of special events will increasingly incorporate CGE modeling of the economic impacts and Cost Benefit Analysis of the wider economic, social and environmental effects.

Whatever the specific topics that researchers will address in the coming years it is clear that tourism economics provides a fertile ground for research with the potential to inform policy making to improve socio-economic prosperity in all destinations worldwide. Further research is required as to how tourism yield can be usefully incorporated into the sustainability paradigm. Changing global trends (economic, social, demographic, political, technological and environmental) will continually pose challenges to economic theory and policy and the ways we analyze tourism activity. Whatever the specific topics that researchers will address in the coming years it is clear that tourism economics provides a fertile ground for research with the potential to inform policy making to improve socio-economic prosperity in all destinations worldwide. Research undertaken by the STCRC (Dwyer, et al. 2008; Dwyer, Edwards, Mistilis, Scott & Roman 2009; Dwyer & Edwards 2009) can provide a strategic vision for both public and private sector tourism management.

References

Australian Bureau of Statistics (2009). *Australian National Accounts: Tourism Satellite Account, 2007- 08*. Australian Bureau of Statistics, Canberra, ACT. Retrieved from: http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5249.02007-08?OpenDocument

D. Pambudi, T. Van Ho, R. Spurr, P. Forsyth, L. Dwyer and S. Hoque. (2009). *Tourism Satellite Accounts 2007–08: Summary Spreadsheets 2009.* Sustainable Tourism Cooperative Research Centre, Gold Coast, Qld.

L. Dwyer and D. Edwards (2009). Managing Tourism to Avoid 'Strategic Drift *'International Journal of Tourism Research* Vol 11, 321-335.

L. Dwyer and P. Forsyth (2008). Economic Measures of Tourism Yield: what markets to target? *International Journal of Tourism Research* Vol. 10, 155-168.

L. Dwyer, D. Edwards, N, Mistilis, N. Scott, C. Roman and C. Cooper. (2008). Trends Underpinning Tourism to 2020: An analysis of key drivers for change. Sustainable Tourism Cooperative Research Centre, Gold Coast, Qld.

L. Dwyer, D. Edwards, N. Mistilis, N. Scott and C. Roman (2009) Destination and Enterprise Management for a Tourism Future, *Tourism Managemen*t 30 pp. 63-74.

L. Dwyer, P. Forsyth and R. Spurr (2005). Estimating the Impacts of Special Events on the Economy *Journal of Travel Research* Vol 43, pp 351-359

L. Dwyer, P. Forsyth and R. Spurr (2006a). Assessing the Economic Impacts of Events: A Computable General Equilibrium Approach. *Journal of Travel Research* Vol. 45, pp 59-66.

L. Dwyer, P. Forsyth and R. Spurr (2006b). Economic Impact of Sport Events: A Re-assessment. *Tourism Review: International Special Issue Tourism and Sport Events* Vol 10, (4) pp 207- 216.

L. Dwyer, P. Forsyth and R. Spurr (2006c). Effects of SARS Crisis on the Economic Contribution of Tourism to Australia. *Tourism Review International* Vol. 10 pp 47-55.

L. Dwyer, P. Forsyth and R. Spurr (2007a). Contrasting the uses of TSAs and CGE models: Measuring tourism yield and productivity. Volume 13, No 4, December pp 537-551.

P. Forsyth, D. Pambudi, R. Spurr, L. Dwyer, T. Van Ho and S. Hoque (2007). *State and Federal Taxes on Tourism in Australia.* Sustainable Tourism Cooperative Research Centre, Gold Coast.
P. Forsyth, S. Hogue, R. Spurr, L. Dwyer, T. Van Ho and D. Pambudi (2008). *Carbon Footprint of the Australia Tourism Industry.* Sustainable Tourism Cooperative Research Centre, Gold Coast.
Pambudi, Djauhari; McCaughey, Nathalie; Smyth, Russell (2009). Computable general equilibrium estimates of the impact of the Bali bombing on the Indonesian economy.
Tourism Management, Vol. 30 (2009),
S. Hoque, L. Dwyer, P. Forsyth, R. Spurr, T. van Ho and D. Pambudi (2010). *Economic Impacts of Greenhouse Gas Reduction Policies on the Australian Tourism Industry: A Dynamic CGE Analysis.* Sustainable Tourism Cooperative Research Centre, Gold Coast, Qld.
S. Hoque, P. Forsyth, L. Dwyer, R. Spurr, T. van Ho and D. Pambudi (2010). *The Carbon Footprint of Queensland Tourism*. Sustainable Tourism Cooperative Research Centre, Gold Coast.
T. Duc Pham, D.G. Simmons and R. Spurr (2010). Climate Change Induced Economic Impacts on Tourism Destinations: *Journal of Sustainable Tourism*, Vol. 18, Issue 3, pp. 449 – 473.
T. Duc Pham, L. Dwyer and R. Spurr (2009). Constructing a Sustainable TSA: The Case of Queensland. *Tourism Analysis* Vol. 13 (5/6) pp 445-460.
T. Jones, D. Wood, M. Hughes, T. Duc Pham, D. Pambudi, R. Spurr, L. Dwyer, M. Deery and L.Fredline (2010). *Tourism Destination Modelling: Building a sustainable planning tool for Australian tourism destinations.* Sustainable Tourism Cooperative Research Centre, Gold Coast, .
T. Koo. R. Wu and L. Dwyer (2010a). Ground Travel Mode Choices of Air Arrivals at Regional Destinations: Vol 24 pp 44-53.
T. Koo, R. Wu and L. Dwyer (2010b). Transport and Regional Dispersal of Tourists: is modal substitution a source of conflict between low-fare air services and regional dispersal? *Journal of Travel Research* Vol 49, No. 1, pp106-120.
World Travel and Tourism Council (2010), Tourism Economic Research 2010, World Travel & Tourism Council, London, Retrieved from:
http://www.wttc.org/eng/Tourism_Research/Economic_Research/
Gössling, S. (2009). Sustainable tourism and global change. Routledge, London.
Gössling, S., Scott, D., & Hall, C. M. (2012). Tourism and water: Interactions, impacts and challenges. Channel View Publications, Bristol.
Honey, M. (2008). Ecotourism and sustainable development: Who owns paradise? Island Press, Washington, D.C.
Scheyvens, R. (1999). Ecotourism and the empowerment of local communities. Tourism Management, 20(2), 245–249.
Sharpley, R. (2009). Tourism development and the environment: Earthscan, London.
Weaver, D. B. (2006). Sustainable tourism: Theory and practice. Elsevier, Oxford.
Buckley, R. (2012). Sustainable tourism: Annals of Tourism Research, 39(2), 528–546.
Gössling, S., Scott, D., & Hall, C. M. (2012). Tourism and water: Interactions, impacts and challenges. Channel View Publications.
Hall, C. M., & Page, S. (2014). The geography of tourism and recreation.
Honey, M. (2008). Ecotourism and sustainable development: Island Press.
Scheyvens, R. (1999). Ecotourism and the empowerment of local communities, 20(2), 245–249.

Sharpley, R. (2020). Tourism, sustainable development and the theoretical divide: 20 years on. Journal of Sustainable Tourism, 28(11), 1932–1946.

UNWTO (2020). World Tourism Organization Annual Report. Madrid.Weaver, D. B. (2006). Sustainable tourism: Theory and practice. Elsevier.