Nature-Based Tourism and Nature Conservation

Exploring the Elements and Links

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Ecotourism is a vast and promising industry. It can provide foreign exchange and economic rewards for the preservation of natural systems and wildlife. But ecotourism also threatens to destroy the resources on which it depends. Tour boats dump garbage in the waters off Antarctica; shutterbugs harass wildlife in National Parks; and hordes of us trample fragile areas. This frantic activity threatens the viability of natural systems. There is an excess of expressions for nature-based tourism already in the literature. The term nature travel (or sometimes nature-oriented tourism) refers to a style of tourism that combines education, recreation, and often adventure and has been used widely in the literature. The label of ecotourism is synonymous with nature tourism, which can be defined as travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery, with its wild plants and animals, as well as any existing cultural manifestations. Nature tourism is based on the enjoyment of natural areas and the observation of nature; further, it specifies that such tourism has a low impact environmentally, is labour-intensive and contributes, both socially and economically, to the nation. This chapter explores the essential elements of nature-based tourism (NBT), and examples from the region will help illustrate its diversity of form. Existing literature is reviewed, and an assessment is made on the present state of knowledge about NBT and some of the most pressing issues awaiting research. An overall management perspective reflects the link between nature-based tourism and nature conservation. The focus of this chapter is to provide a context for the analysis of NBT and discuss the relative merits of options. A basic premise is an underlying need for nature conservation at all levels.

Keywords

Ecotourism  
Nature-based Tourism  
Environment  
Economy  
Technology

1. Introduction

Many studies have focused on nature-based tourism (NBT) from the supply side, particularly on destination development, lifestyle entrepreneurship, and the role of tour guides (Fredman & Margaryan, [2021](#B31), p. 529). NBT is defined by Margaryan ([2017](#B60)): as “activities by humans occurring when visiting nature areas outside the person’s ordinary neighbourhood”. As such, the sector is heavily dependent on natural resources in its efforts to meet the needs of nature tourists. NBT is mainly manifested as nature tourism, environmental tourism, ecotourism, geographic tourism, bicycle tourism, adventure tourism, wildlife tourism, cruise tourism, outdoor tourism and other forms of tourism. NBT is one of the fastest-growing segments in the tourism industry, with numerous public lands and protected regions serving as popular tourist attractions (Winter, Selin, Cerveny, & Bricker, [2020](#B107)). Chung, Dietz, and Liu ([2018](#B17)) find that the higher the biodiversity, the older the history, the larger the area, the more accessible the city, and the higher the altitude, the higher the level of NBT. However, rapid growth in NBT can cause complex changes in local communities, have an impact on local infrastructure and facilities, trigger competition for scarce resources, result in unwelcome marketing of indigenous products and traditions, and result in an influx of non-native workers, business owners, and amenity immigrants (Jones, McGinlay, & Dimitrakopoulos, [2017](#B41)). In recent years, tourism has been highly vulnerable to local phenomena, in particular, the impact of nature-based tourism, such as earthquakes, forest fires, volcanic eruptions, tsunamis or floods, as well as global events such as disease pandemics (Ma, Chiu, Tian, Zhang, & Guo, [2020](#B58); Rogerson & Rogerson, [2020](#B89)). This chapter explores the essential elements of NBT, and examples from the region will help illustrate its diversity of form. The work also focuses on providing a context for analysing nature-based tourism and discussing the relative merits of options.

1. Nature and Tourism – Global Context

From a global perspective, “nature-based tourism is huge”, as Blumstein, Geffroy, Samia, and Bessa ([2017](#B9)) noted. Many natural ecosystems and wildlife species are under threat from global challenges such as climate change, biodiversity decline, unsustainable resource usage, and other human factors (Wearing & Schweinsberg, [2018](#B105)). While NBT can help broaden the audience for biodiversity and conservation efforts, increased recreational and tourist access can impact the natural and social environment. Large numbers of NBT visitors may put additional pressure on natural regions, as any tourism activity may have an impact on the environment (Øian et al., [2018](#B74)), and the lack of monitoring of spatial patterns and characteristics of visitors in the protected area (Kim, Lee, & Kim, [2020](#B49)).

1. Nature and Tourism – Regional Context

The Asiatic region has emerged as the top performer globally in terms of growth (Mohanty, Dhoundiyal, & Thomas, [2022](#B66)). This growth has been primarily spearheaded by NBT destinations across the region (Jones, Apollo, & Bui, [2021](#B43)). China, for example, has rich tourism resources with its vast geographical area, presenting a variety of tourism types. The most prominent is natural and cultural tourism, which is relatively unaffected by the seasons due to the climate and cultural differences between the provinces in China. In recent years, nature tourism has brought economic benefits to local communities, but has also a number of ecological problems in China (Wang et al., [2021](#B103)). Therefore, the quality of nature tourism sites may be negatively affected by these ecological problems, and this deterioration, in itself, is detrimental to the sustainable development of nature tourism. According to the summary report of “Green Shield 2017”, China has found more than 20,000 examples of ecological problems relating to national nature reserves. Most of these ecological problems are caused by irrational resource development, including, but not limited to, irrational tourism development (Yuxi & Linsheng, [2020](#B112)).

Japan’s 35 national parks are rich in biodiversity, ranging from snow-capped mountains to coral reefs. Together with well-designed seasons, abundant resources and opportunities enrich multiple types of NBT, including everyday activities such as hiking and sightseeing and more adventurous activities such as skiing and mountain biking (Jones & Nguyen, [2021](#B44)). However, Japan’s NBT industry has stagnated or shrunk since the 1990s (Jones, [2012](#B42)). This is mainly reflected in the fact that the domestic NBT tourists are elderly tourists with moderate education levels, and the possibility of NBT tourists staying overnight is gradually decreasing (Jones & Nguyen, [2021](#B44); Suganuma, Hibino, & Morichi, [2011](#B96)).

In Sri Lanka, tourism has long been the third-largest source of foreign exchange, accounting for more than 13% of the country’s GDP (Ranasinghe & Sugandhika, [2018](#B86)). In the most recent year for which there are records, more than 2.7 million international tourists visited wildlife tourism destinations, including about 173,000 who visited coastal wetlands and marine parks (Sri Lanka Tourism Development Authority, SLTDA, 2019). However, the spatial concentration of tourists in a few famous destinations is a common but problematic phenomenon in Sri Lanka’s NBT industry (Prakash, Perera, Newsome, Kusuminda, & Walker, [2019](#B80)). For example, almost 65% of national park visitors came from the four popular national parks in 2018 (SLTDA, 2019). The high level of tourism access may be unsustainable, leading to the degradation of nature-based destinations and dissatisfaction among visitors (Prakash et al., [2019](#B80); Newsome, Rodger, Pearce, & Chan, [2019](#B71)).

Similarly, in Indonesia, forest reserves contain 54 national parks, of which nine are mainly marine parks, six are UNESCO World Heritage sites, and five are Ramsar wetlands. The current 54 national parks are protected areas with indigenous ecosystems managed by zoning to promote research, education, biodiversity and tourism goals. However, tourism resource protection and tourist behaviour control are necessary for the sustainable development of national parks. In Bromo and other mountain national parks, unregulated nature tourism negatively impacts the environment, such as air and water pollution, habitat deterioration, solid waste pollution, erosion of volcanic edges, vandalism and illegal plant collection (Pamungkas & Jones, [2021](#B76)).

In Vietnam, NBT is increasingly recognised as playing an essential role in national development, especially in the national tourism industry, supporting the socio-economic development of rural areas around the reserve. Vietnam’s National Parks (NPs) are protected areas in the National System of Special Use Forests (SUFs), designed to protect nature. Other goals include preserving landscapes and cultural and historical sites and providing recreation and tourism. However, Vietnam’s NBT suffers from a lack of planning or strategies on the national level (Markowski, Bartos, Rzenca, & Namiecinski, [2019](#B62)). National planning is essential for developing NBT destinations and improving the country’s tourist attractions, such as its natural surroundings, biodiversity, cultures, and history.

1. Diversity in Nature-Based Tourism

The spectacular natural assets of the Nordic area have long intrigued and attracted travellers, and their tourism value has only grown over time (Fredman & Margaryan, [2021](#B31)). Its natural assets are highlighted in the diversity of outdoor recreational activities available, ranging from relatively common activities such as animal-based activities (fishing and equestrian) or skiing (remote areas) to more niche activities such as glacier travel and mountain biking and Viking tourism. However, Nordic tourism destinations are vulnerable to climate change, such as changing precipitation patterns, reduced winter snowfall and seasonal changes (Landauer, Goodsite, & Juhola, [2018](#B52)). In particular, the climate vulnerability of winter tourism depends not only on the activity itself but also on the region where the activity occurs. About three-quarters of winter tourism businesses have been affected by weather events, such as extreme cold or high winds leading to cancellations. The future of winter tourism in Finland and similar areas may be more sensitive to changes in the frequency and severity of extreme weather than to changes in the length of seasons (Tervo, [2008](#B98)) (Figure 30.1).

Figure 30.1 A Framework for NBT. Source: Authors’ Own Work

1. Natural Resources Evaluation

In the initial stage of regional development studies, the problems and potential of the region are diagnosed. Evaluating the natural resource base is the basis of any development planning and project formulation that offers baseline information to help develop strategies and identify projects. Priskin ([2001](#B81)) indicates that the first stage in effective planning is systematically identifying and evaluating the resource base for its potential development. The critical point of rural ecotourism development is to choose characteristic tourism resource points. China’s *Tourism resources Classification, survey and Evaluation* (GB/T18972-2003) is the national criteria to determine the level of natural tourism resources (Xiang & Yin, [2020](#B109)). The NBT development potential of the national parks and protected areas should be evaluated before developing and promoting NBT destinations. For example, ecotourism is a burgeoning niche sector that can help protected places thrive sustainably; ecotourism development requires a preliminary evaluation of destination resources (Bekele, Teshome, & Asteray, [2017](#B7); Kunasekaran & Kumar, [2021](#B51)).

Xiang and Yin ([2020](#B109)) construct the evaluation system of rural ecotourism resources, which consists of three levels, target level, factor level and evaluation index level, and the study indicates that for rural ecotourism resources, human and natural conditions are the primary elements; of these, the natural landscape and social-cultural objects are the most important. Africa’s natural resources, wildlife, national parks, and landscapes lay the foundation for its tourism development (Bekele et al., [2017](#B7)). For example, East African countries are known for wildlife diversity, an abundance of wildlife species, and leading tourism destinations. Bekele et al. (2021) find that Maze National Park has high ecotourism potential regarding natural resources but moderate potential in site infrastructure provision and human resources. Local communities living near national parks have a low potential for tangible cultural resources but have various intangible cultural resources that attract visitors. Therefore, Maze National Park has a high potential for eco-tourism development.

1. Destination Attractiveness

NBT is defined as travel to enjoy undeveloped natural regions, and almost all NBT destinations are located in protected areas (Markowski et al., [2019](#B62)). With the increase in the urban population, rural tourism is becoming more and more popular (Zhou, [2014](#B116)). Natural and cultural attractiveness are significant factors in the development of NBT (Sadowski & Wojcieszak, [2019](#B91)). The attractiveness of a tourism destination is a crucial determinant of its competitiveness and becomes an essential factor in driving the local tourism economy development. The fundamental attractiveness of a tourism destination consists of various destination appeals, namely natural resource attractiveness, cultural heritage attractiveness and social appeals (Ndivo, Waudo, & Waswa, [2012](#B70)).

Destination attractiveness is a measure of the potential of a particular destination to provide travellers with a pleasant experience and ensure a sense of happiness during the vacation (Jin, Weber, & Bauer, [2012](#B40)). Attractiveness is related to tourists’ perception of the potential of a place to meet their tourism expectations (Reitsamer, Brunner-Sperdin, & Stokburger-Sauer, [2016](#B88)). Chin, Lo, Razak, Pasbakhsh, and Mohamad ([2020](#B16)) find that destination attractiveness is the top concern for tourists in Sarawak’s semi-rural and rural tourism destinations. From the global perspective, tourism destinations are no longer regarded as various natural, social-cultural and ecological resources but as an attractive tourism product of a destination (Reitsamer et al., [2016](#B88)). Destination attractiveness is one of the critical factors in selecting a tourism destination. The success of a tourism destination is determined primarily by its tourism advantage in terms of unique attractiveness (Jin et al., [2012](#B40)). The more attractive a destination, the greater the chance tourists will choose that destination (Kim & Perdue, [2011](#B47)). Image is also a critical factor that influences destination attractiveness. The better a destination’s reputation and image, the more attractive it will be. When tourists are faced with the complexity of tourism offers selection, their choice is mainly affected by the resources the destination possesses (Puška, Šadić, Maksimović, & Stojanović, [2020](#B83)). The diversity of tourism resources determines the uniqueness and attractiveness of the destination; tourists’ knowledge of these resources can affect the attractiveness of destinations (Guan & Jones, [2015](#B36)). However, Zawadka ([2019](#B114)) points out that the problem with rural tourism’s low attractiveness is tourist stereotypes and their erroneous assumption that rural regions are unattractive to tourists.

When a traveller visits a destination, the destination must either meet or exceed their expectations (Lee, [2016](#B53)). Before going on holiday, tourists have certain expectations about the destination they will visit. Their experience of the destination will either confirm or deny their expectations. Therefore, if a destination can meet or exceed the expectations of tourists’ needs, it automatically becomes a more attractive destination (Ma, Hsiao, & Gao, [2018](#B57)). One popular approach is to associate specific criteria with destinations (Lee, [2016](#B53)). These standards attract visitors to a given location (Puška et al., [2020](#B83)), such as tourist infrastructure, culture and tradition, and natural and ecological resources. For example, the rural area of Poland is regarded as an attractive rural tourism destination, characterised by the diversity of tourist offerings, a beacon of culture and tradition, and a place to preserve unique natural and landscape values (Sadowski & Wojcieszak, [2019](#B91)).

1. Accessibility

In recent years, accessibility has significantly affected regional tourism flows and global tourism industry performance. However, tourism encompasses many sectors, and accessibility measurements may not fully incorporate the simultaneous accessibility of corresponding destinations (Yen, Chen, & Ho, [2021](#B111)). Tourism has a network structure that includes primary suppliers, tourism intermediaries and tourism production activities within the tourism system. In addition, both major suppliers (such as airlines) and travel agents (such as tour operators) constitute channels that offer opportunities for travellers to interact with destinations, with different channels associated with their forms of accessibility (Romero & Tejada, [2011](#B90)).

Several studies are interested in travellers’ perceptions that evaluate destination accessibility. Ceccato, Deflorio, Diana, and Pirra ([2020](#B14)) show that accessibility can be defined as high geographical connectivity between regions, provided by a good travel experience and efficient modes of transportation, and indicators are designed based on tourists’ perception of accessibility to travel time. In general, accessibility is divided into two categories, including individual accessibility (such as health condition, psychological condition, opportunity, economic factor, and social factor) and destination accessibility (such as driving attributes and destination attributes) (Wirajaya, Rahmafitria, Nurazizah, & Jamin, [2021](#B108)). Some studies show that low individual accessibility awareness negatively impacts visits, while high destination accessibility awareness positively impacts visits (Wirajaya et al., [2021](#B108)).

Destination accessibility refers to the accessibility of a particular destination and is related to the facilities and infrastructure of the destination and the time and effort required to get there (Gehrke, Akhavan, Furth, Wang, & Reardon, [2020](#B34); Zhu & Diao, [2020](#B117)). Destination accessibility is generally considered a significant factor in driving tourists’ travel decisions (Park, Kim, Kim, & Park, [2019](#B78)). For example, tourist service is based on assistive technology that can enable hiking using wheelchairs that can improve the accessibility of tourist destinations and its attraction (Nanchen, Margot-Cattin, Ramseyer, & Schegg, [2020](#B69)). However, the natural and cultural environment in the Greek islands is the main competitive advantage of tourism there, whereas the absence of ground transportation limits the accessibility of the islands, especially in winter (Paraschi, [2020](#B77)). The critical question for tourism destinations and countries is regarding and measuring accessibility and its performance. Therefore, understanding destination accessibility can assist destination managers and governments identify tourism opportunities and implementing suitable strategies (Yen et al., [2021](#B111)).

1. Activities (Exploration, Participative)

The projects and features of the natural environment are inherent in NBT. When people leave their homes for recreation in nature, the experience they get from outdoor activities often depends on specific natural resources and environments (Tyrväinen, Uusitalo, Silvennoinen, & Hasu, [2014](#B101)). For example, Brčko District is located in a superior location and rich in natural resources. It can be used as a base for carrying out hunting, leisure, ecological, mountain, agricultural, cultural, health tourism, folk, religious, historical, food and other NBT branches (Puška et al., [2020](#B83)). With the increasing popularity of NBT environments, the relationship between leisure activities and natural resources requires further attention (Margaryan, [2018](#B61)). For example, environments and resources suitable for fishing activities excepted rivers and fish include shelters, beautiful scenery, pleasant weather, campfire sites, and space and time for social interaction with owners and other anglers.

Similarly, ski trips require more than good weather and suitable snow conditions, iconic destinations and magnificent environments, negotiable terrain, and safe routes (Fossgard & Fredman, [2019](#B29)). Providing visitors with a range of particular resources can enhance their final activity experience. Most NBT activities can be classified as sports and adventure (Buckley, [2006](#B10)). For example, with nature as the backdrop, rock climbing and bike park as stage entertainment; Kayaking on calm seas and skiing on untouched snow are real experiences that connect with nature; Kayaking in breaking waves and skiing in steep canyons (Fossgard & Fredman, [2019](#B29)). To participate in and experience the immersion of nature, when faced with a wide variety of outdoor activities, tourists can choose from simple hiking or cycling trips staying in hotels and more intense NBT experiences such as camping (Filipe, Barbosa, & Santos, [2020](#B27)).

In the 1990s, Lindberg and Lindberg ([1991](#B55)) divided nature tourists into four categories based on different motivations and activities: (1) Core nature tourists, including those with educational purposes; (2) Dedicated nature tourists, primarily those seeking the natural and cultural history of protected areas; (3) Mainstream nature tourists, for unusual travel activities; and (4) Casual nature tourists; tourists who experience nature by chance. There are a wide range of destinations for NBT, but natural areas such as national parks and protected areas are the most significant component. Landscape experience, sightseeing and nature photography are the main activities in terms of preference and participation in NBT activities by different foreign visitors to Norway in summer. Still, they tend to be associated with sports activities, walking and hiking in mountains and forest areas being the most common (Dybedal, Haukeland, & Stemmer, [2021](#B25)). Everyday NBT activities in Western Australia include bushwalking, backpacking, camping, wildlife watching, and fishing. More adventurous activities in natural areas include off-road driving, scuba diving and rock climbing. The central coastal area of Western Australia has open space for various natural resources in both marine and terrestrial environments (Priskin, [2001](#B81)).

1. Supportive Service (Other Infrastructure)

Tourism infrastructure is divided into two categories, namely soft infrastructure and complex infrastructure. Soft infrastructure refers to training, while hard infrastructure refers to tangible elements such as transportation facilities, tourists’ access methods, and information facilities (Kumar, [2016](#B50)). In addition to tourism infrastructure, service quality has always been a primary concern for service providers in today’s modern, globalised and competitive environment (Ramseook-Munhurrun, Naidoo, Seebaluck, & Pillai, [2016](#B85)). In this context service refers to non-physical goods provided in exchange for money in a business context (Davidoff, [1994](#B22)). Service quality is considered one of the critical factors in developing destination marketing activities (Yaru, Liu, & Jing, [2018](#B110)). In the development of rural tourism in the Rostov region, the number of enterprises in the hospitality sector is increasing, and they are providing more and more additional services, such as distinctive reception services, the development of rural tourism new routes, and cultural leisure activities (Provotorina, Kazmina, Petrenko, & Ekinil, [2020](#B82)). Accommodation facilities are a significant component of tourism infrastructure because accommodation services are vital for tourism products. Tinakhat, Viriyachaikul, and Vorasingha ([2018](#B100)) believe that the service quality of homestay providers plays a crucial role in the success or failure of the rural tourism industry. Al-Ababneh ([2013](#B2)) points out that the quality of services provided and experienced by travellers “will determine their level of happiness, and the better the quality, the happier the tourists will be” that is a key aspect of building visitor satisfaction.

Tourism infrastructure has become one of the primary factors that affect tourists’ decision-making on tourism destinations (Zaei & Zaei, [2013](#B113)), which will inevitably enhance its competitiveness and contribute to the successful development of tourism destinations. The elements of destination attractiveness and tourism infrastructure affect the development of rural tourism destinations’ competitiveness (Owiyo, [2018](#B75)). In rural tourism, natural resources or facilities have become the critical input of rural tourism products (Nooripoor, Khosrowjerdi, Rastegari, Sharifi, & Bijani, [2021](#B72)). Therefore, it is proposed that good tourism infrastructure will become an essential promotional tool for the marketing of rural tourism destinations (Karalkova, [2016](#B46)). Infrastructure assets are essential for ecotourism development (Parker & Khare, [2005](#B79)). Proximity to cultural and historical sites and roads and rivers are considered critical natural attractions for ecotourism development (Abrehe, Girma, & Nigusse, [2021](#B1)). As a result of infrastructure development, tourism resources are being developed, and the attractiveness and accessibility to tourists are increasing, along with the tourism capacity of the territory (Provotorina et al., 2020). Almeida and Machado ([2021](#B5)) indicate that investment in infrastructure has helped Madeira’s rural tourism sector attract more visitors. Infrastructure development is crucial for improving destination accessibility (Wirajaya et al., 2021). Moric ([2013](#B67)) points out that the efficiency of tourism infrastructure plays a crucial role in attracting tourists to destinations, especially rural tourism destinations (Goffi, [2013](#B35)). Davidson ([2016](#B23)) emphasises the effectiveness of tourist facilities and services to provide unforgettable destination experiences, thereby further improving tourist satisfaction.

1. Local Community

In a particular destination, community participation is necessary for increasing tourism efficiency (Su, & Wall, [2014](#B95)). Community participation can be spontaneous, induced, or forced, depending on the nature of tourism development (Rasoolimanesh, Ringle, Jaafar, & Ramayah, [2017](#B87)). Effective community participation requires that community residents have the right knowledge and skills for conservation and tourism development. The community understands environmental protection and participates in various communication processes at tourism destinations, such as attending training on environmental issues, making crafts with natural ingredients, and serving food and beverages. During the process, the community residents price their products and services, thereby sustaining their livelihood (Ali, Quaddus, Rabbanee, & Shanka, [2020](#B4)). Mogomotsi, Stone, Mogomotsi, and Dube ([2020](#B65)) find that When local livelihoods and wildlife conservation come into conflict, it is essential to understand communities’ attitudes close to wildlife and explore how to respond to wildlife conservation. Human interaction with wildlife can only be improved by understanding the experiences of local communities (Tessema, Lilieholm, Ashenafi, & Leader-Williams, [2010](#B99)). According to the sustainable-use approach hypothesis, local community user rights promote natural resource conservation (Mogomotsi, Mogomotsi, Gondo, & Madigele, [2018](#B64)).

In existing NBT literature, community participation has received substantial attention (Ali et al., [2020](#B4); Mogomotsi et al., [2020](#B65)). Community participation refers to the participation of communities in tourism activities for social, environmental, and economic benefits, which influences the nature and level of participation (Hung, Sirakaya-Turk, & Ingram, [2011](#B39)). Ecotourism, as one of the aspects of NBT, can encourage local communities to participate in conservation (Abrehe et al., [2021](#B1)). Community participation depends on the attractiveness of nature and the motivation of people to participate in ecotourism activities, and it affects the quality of life of local community residents. Political instability and government policy significantly moderated the relationship between ecotourism motivation and community participation and also between community participation and quality of life (Ali et al., [2020](#B4)). Community residents are the essential participants in the success of the NBT industry, and community participation is crucial to the development of NBT in a destination by promoting positive relationships among various stakeholders in the community. Participation use and utilisation of community resources in the planning and decision-making process increase community awareness of the benefits of tourism initiatives (Rasoolimanesh et al., [2017](#B87)).

1. Ecological Degradation

Tourism plays a vital role in the socio-cultural transformation of countries and is also one of the fastest-growing industries in the world (Geary, [2018](#B33)). With the growth of per capita income worldwide, tourists have increased rapidly. This tourism development is reflected in the associated energy use and subsequent environmental degradation (Kalayci, [2019](#B45); Tang, Bai, Shi, Liu, & Li, [2018](#B97)). For example, it was estimated that in 2013 8% of global carbon emissions from greenhouse gas emissions were generated by global tourism (Lenzen et al., [2018](#B54)). The emergence of ecotourism is one of the main reasons for the migration of animal habitats and the faster depletion of natural resources in their destinations (Fletcher, [2019](#B28)).

Measures such as greenhouse gas (GHG) emissions, carbon dioxide (CO2) emissions, and ecological footprint (EFP) can be used to access the level of environmental degradation (Hassan, Xia, Khan, & Shah, [2019](#B38)). For example, the growth of tourism in China is complemented by growth in the transport sector, which is an essential contributor to tourism’s carbon emissions. In addition, tourist accommodation also accelerates the consumption of natural resources and produces waste gas, which leads to environmental degradation (Bianco, [2020](#B8); Wang, Du, Li, He, & Xu, [2019](#B102); Wang, Zhou, Chen, & Rong, [2019](#B104)). Increased tourism activities and solid waste generation will negatively impact vegetation cover, landscaping and overall ecosystem health if rational management measures are not taken for fragile ecosystems (Maldonado-Oré & Custodio, [2020](#B59)).

Some tourism-oriented sports and other recreational activities have led to the migration of animal habitats, the depletion of natural resources and the generation of greenhouse gases (Chen, Thapa, & Yan, [2018](#B15)). With tourism development, related industries formed by tourism destinations also aggravate this ecological dilemma (Sharif et al., [2020](#B93)). The Greek Islands show a fragile ecosystem, such as drought, sea-level rise and land erosion. Fish stocks are limited because of overfishing, and many islands suffer from water shortages, which worsen in the summer as tourist flows increase (Paraschi, [2020](#B77)). Geotourism, which is an aspect of culturally and environmentally responsible tourism, is particularly important in the Andaman and Nicobar Islands, which are environmentally fragile and are already facing challenges such as biodiversity loss, ecosystem destruction, water scarcity and loss of indigenous populations and seismic activities (Arora, Rajput, & Anand, [2020](#B6)). Mountain tourism often occurs in protected regions and fragile ecosystems, and activities such as skiing and trekking are endangering the sustainability of mountain tourism (Seraphin & Dosquet, [2020](#B92)). Although mountains are fragile ecosystems and threatened by tourism, tourism economic activity is necessary for the survival of rural regions due to their low population density and the lack of integration of extensive economic networks (Luthe, Wyss, & Schuckert, [2012](#B56)).

1. Discussion and Conclusion

Over the past decade, NBT has been gathering momentum as a distinct field of study (Qiu, Sha, & Scott, [2021](#B84)). While various facets of nature-based tourism have been studied across the different regions of the world, many new trends, such as the use of technology, stakeholder participation, and visitor experience management continue to emerge, widening the understanding of nature-based tourism. In all these developments, sustainability has remained the bottom line of the discussions. The critical tourism literature has also contributed to the development of the field by highlighting the negative impacts of the NBT and providing cautionary marks (Hall & Boyd, [2005](#B37)). In this chapter, attempts have been made to shed light on the various aspects of NBT and discuss the future directions of this emerging doctrine of study. For better understanding, a framework for NBT has been developed by the authors.

The concept of NBT originated from the environmental movements of the 1970s and 1980s and primarily focused on minimising the negative impacts of tourism on the environment (Mehmetoglu, [2007](#B63)). With no standardised definition in the literature, Buckley and Coghlan ([2012](#B11)) define NBT as the wasteful and non-consumptive forms of tourism occurring in a relatively undisturbed natural setting. Here, the diversity of the NBT is one of the key factors to recognise. Since its inception, the concept of NBT has evolved as a hugely debated concept, with many forms of tourism coming under the umbrella term. Thereby, a host of new forms of NBT tourism has evolved at different periods and assisted in the growth of the concept in terms of both length and breadth (Buckley & Coghlan, [2012](#B11)). It is also argued that a host of tourists demand nature-based products and products that fulfil the needs of nature-based tourists.

Following its inception, NBT was initially studied as a form of tourism, which aimed to educate the tourists about the negative impacts and propagate the forms of tourism with minimal impacts on the environment. During this period, the study of NBT was majorly examined from the conservation of environment aspect. Gradually, research on NBT was extended to community development (Fredman, Wall-Reinius, & Grundén, [2012](#B32)) and host–guest interactions (Carmody, [2008](#B13)). Next, the visitor satisfaction component was given due attention in the context of NBT. As time progressed, NBTs gained momentum as a form of tourism that benefits the hosts, the visitors, and the environment (O’Neill, Riscinto-Kozub, & Van Hyfte, [2010](#B73)). However, the advocacy approach to NBT has not been reflected all across. Critics like Duffy ([2015](#B24), p. 529) noted that NBT follows “a process of neoliberalism nature, which cuts the threads that bind ecosystems together so that the constituent parts can be transformed into new commodities”. Thus, NBT was blamed for destroying the very resources that it aimed to protect. Further, NBT was critiqued as a form of tourism that commoditises flora and fauna of any particular destination providing shelter to neoliberal beliefs (Butt, [2012](#B12)). However, despite all these criticisms, the concept of NBT kept growing steadily mainly due to its deep affiliations to the sustainability aspect, which emerged as the most significant topic of discussion in the 2000s.

NBT is studied as a multifaceted concept that influences, and is influenced by, social, political, economical, environmental, and technological factors (Elmahdy, Haukeland, & Fredman, [2017](#B26)). The primary aim of NBT has remained the same: to achieve environmental goals of conservation, protection and growth (Jones et al., [2021](#B43)). In society, NBT has been associated with gender, age, population size, culture, and harmony in the community (Zhang, Chan, Liu, & Zhu, [2020](#B115)). Similarly, when observed from the political angle, NBT is characterised as a geopolitical phenomenon covering many issues concerning both developed and developing countries and power imbalances (Fredman, Haukeland, Tyrväinen, Stensland, & Wall-Reinius, [2021](#B30)). NBT is studied as a form of tourism that generates, and can generate, substantial economic benefits, especially in developing and Least Developed Countries (Cisneros-Montemayor et al., [2020](#B18)). Further, trends suggest that NBT has excellent potential for being an agent of psychological wellbeing and wellness (Kim, Lee, Uysal, Kim, & Ahn, [2015](#B48)). This emphasises the psychological benefits of NBT, which will drive the future research agenda in the doctrine of tourism development.

Finally, similar to other forms of tourism, technology has emerged as the most critical factor driving the future of NBT. The applications of technology in the context of NBT consist of travel planning (Silva, Marques, & Abrantes, [2020](#B94)), visitor experience management (Albrecht, [2021](#B3)), new product development (Coghlan & Carter, [2020](#B20)), knowledge mobilisation (Coghlan, [2020](#B19)), environmental protection (Wheaton et al., [2016](#B106)), safe payments (Nagle & Vidon, [2021](#B68)), and awareness generation (da Mota & Pickering, [2020](#B21)). Therefore, in the framework, technological inputs like AR, VR, XR, AI, Robotics, and CRM architecture have been depicted as the drivers of NBT.

Overall, NBT has come a long way from being a form of tourism that emphasises environmental protection to being an exclusive segment of tourism that impacts all aspects of life. The current chapter provides a holistic view of the different facets of NBT and the trajectory of movement since its inception. With environmental protection and conservation emerging as one of the most significant global agendas, discussions, and debates about NBT will only intensify. Lastly, through proper planning and execution, NBT can act as one of the critical factors driving the future of humanity.

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