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MACRO SCALE ASSESSMENT OF SUSTAINABILITY IN TOURISM

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PURPOSE OF THE STUDY

Sustainability for the tourism industry has received considerable attention in recent decades but assessment of related environmental impacts is seldom undertaken at macro scales. The purpose of the proposed study is to understand the spatial relationships and by extension, possible correlations between international tourism flows and environmental changes. World Tourism Organization statistics of aggregate as well as directional data on international tourism flows or the “transnational movement of humans” have been applied, for example, in analysis in the context of international trade theories (Keum, 2010). Earth System science furthermore provides a scientific basis for integrated assessments such as the interrelationships between human activities and environmental changes. Geographical Information Systems (GIS) can process and demonstrate land use changes overtime, as well as travel patterns relative to environmental changes and indicators. In terms of environmental management and sustainable tourism development, GIS has been recommended as a particularly powerful tool at smaller scales (Bahaire & Elliott-White, 1999). But extensive research or ongoing assessments are not typically undertaken at global scales. A search of EBSCO Host’s hospitality and tourism complete for environmental impacts and assessment, or sustainability and assessment, for example, returned 67 relevant articles published between 1995 and 2011. These included studies regarding assessment and individual businesses, business sector or event types (16), destination, location specific, city-wide and country-wide assessments (19), articles dealing with governance and community level issues (11), indicators, frameworks or techniques (13), and trade or travel related considerations (5) and finally tourists themselves (3). Buckley (2009) offers a rare exception in that he advocates assessment of ecotourism and environmental outcomes industry-wide but bases his analysis on political mechanisms for example or environmental assessments undertaken at the destination level.
Environmental impacts associated with tourism have been described as resulting from the concentration of people, which in turn involves trans-regional flows of tourists often in large numbers, or so called mass tourism (Welford & Ytterhus, 2004). The extraordinary growth in international travel dates to the period following the Second World War and the expansion of the first world middle classes (Hughes, 2004; Neto, 2003; Kuvan 2010). A subsequent emphasis on sustainable tourism can be traced to the late 1980s with an international focus on sustainability following the World Commission on Environment and Development’s report, “Our Common Future” and particular attention being paid to impacts associated with the tourism industry coming to the fore in the wake of the 1992 Rio Earth Summit (ANPED, 2009-10; Graci, 2010).

In the early 1990s, for example, Chief Executives of 11 major international hotel chains, including, Accor, Forte PLC, Hilton International, Holiday Inn Worldwide, Inter-Continental Hotels Group, Marriott Lodging Group, Ramada International Hotel and Resorts, and ITT Sheraton, signed the International Hotels Environment Initiative requiring that signatories promote high environmental standards in hotel operations (Brown, 1996). In addition, ongoing efforts by international organizations such as the World Tourism Organization (WTO) and the World Travel and Tourism Council (WTTC) encourage sustainable practices for tourism related industries, as in resource use reductions and sustainable development (Schianetz, Kavanagh & Lockington, 2007). Nonetheless, with the continued growth of tourism and related impacts, industry studies remain “replete with accounts of adverse social, cultural and environmental impacts, and irreversible effects, caused by tourism development and the overbuilding of popular tourism destinations” (Schianetz, Kavanagh & Lockington, 2007, p. 369). Wheeler (1991) early on suggested that tourism related impacts are fundamentally a question of volume and Hall (2009) likewise concluded that tourism’s environmental impacts can be understood as the “product of the sheer volume of tourist trips” rather than individual activities or tourists related decisions (p. 47). Hall (2009) and others have therefore proposed limiting tourism numbers for managing impacts (Kastenholz, 2009). However, with respect to assessing the tourism industry as a whole by representing and analyzing the spatial and temporal characteristics of these trans-regional flows has not been given full or studied attention. Considering travel volumes in relation to global environmental indicators may help to assess tourism related impacts as well as reveal past or emerging trends. The magnitude and direction of these flows, for example, may express tourism related consumption patterns in relation to life-style preferences associated with higher resource demands or with respect to natural resource distribution at macro scales (Andriofis, 2008).

Due to international scrutiny, regulatory and social pressures, or to a greater or lesser degree to ensure the longevity of businesses or destinations themselves, sustainable principles have been incorporated and advocated at various scales (Briassoulis, 2002; Hu & Walla, 2005). At the same time, and pollution associated with long-distance travel notwithstanding, tourism impacts in terms of land use and development patterns may also be considered where destinations are “usually accompanied by considerable investments in infrastructure, such as airports, roads, water and sewerage facilities, telecommunications and other public utilities” or may be undertaken in close proximity to fragile ecosystems (Neto, 2003, p. 215). Impacts at destinations are typically divided into four general categories: (1) pressure on natural resources, (2) harm to wildlife and their habitats as well as threats to global biodiversity, and (3) high consumption rates, including nondurable and imported goods, and (4) generation of waste and pollution (Andriofis, 2008; Wong, 2004; Erdogan & Barisb, 2007; Bohdanowicz, Branko &
Martinac, 2005). These however tend to focus on local impacts and what can be managed and determined at commiserate scales. Recognizing that impacts are not only the result of tourist numbers but on the physical characteristics of destinations themselves, it has been argued that an emphasis on alternative types of tourism such as niche or ecotourism that would dissuade mass tourism as a blanket prescription is unwarranted (Kline, 2001). According to this argument, the pertinent question for sustainable tourism is not volume but a particular destination’s carrying capacity (Stankey & McCool, 1984). One report concluded that, “successful tourism development will depend less on how tourism is labeled (as in mass versus eco-tourism) than on the natural endowments in given locations and the existing infrastructure, local expertise, and community support necessary to complement those endowments” (Kline, 2001, p. 9). A macro scale assessment of tourism flows relative to environmental indicators, however, may suggest systemic changes over time not readily apparent at smaller scales. That is, understanding tourism impacts from an earth system approach, whereby global resources and environmental impacts are both integrated and cumulative, may provide a more comprehensive understanding of tourism impacts at macro scales.

PROPOSED RESEARCH METHODS

International arrival and departure figures can be given spatial and time sequenced representation and layered with environmental data that is available through NOAA and ESRI for example, and can be processed using GIS. GIS is already used extensively for environmental assessments among other applications. GIS and its numerous applications for tourism related impact analysis and modeling as well as for sustainability planning has already been used and advocated at smaller scales (Bahaire & Elliot-White, 1999).

Expected Outcomes

Although principles of sustainability have been given considerable attention by international organizations, the implementation of sustainable initiatives and environmental assessment are typically undertaken at micro or regional scales. Yet the tourism industry and environmental impacts are both global phenomenon and would seem particularly suited to an integrated approach. Once travel data has been converted into a spatial reference format, numerous applications for considering tourism and sustainability as a global phenomenon are suggested. The purpose of the proposed study is to integrate tourism and travel data with geological and environmental datasets in GIS, and to assess tourism flows both spatially and temporarily using an earth system approach. For example, the spatial representation of arrival and departure figures and land use changes associated with tourism development can be layered onto spatial data sets of environmental indicators, and potential correlations between tourism flows, land use or systemic changes can be made over time. Concentrations of tourism activity may also be considered in terms of natural resource distribution or environmental quality at global scales.

Works Cited


