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Morphological changes of coastal tourism: A case study of Denarau Island, Fiji

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ABSTRACT

The paper analyzes coastal morphological changes on Denarau Island in Fiji from physical, environmental and social perspectives. It shows that morphological changes on Denarau Island do not follow the traditional Beach Resort Model (BRM) due to the influence of the master plan implemented by territorial local authority (TLA), which played a major role in preventing unexpected expansion. The findings suggest that coastal tourism development in Fiji begins with international hotel expansion. As demand for tourism development in the area rises, rapid urbanization causes adverse environmental effects and in turn, impacts local communities. The study directs a need for legislative reform to require a spatial plan suitable for tourism developments, conservation and resource management in order to avoid decline in coastal resorts and sustain coastal resources.

1. Introduction

The rapid growth of coastal tourism results in equally rapid land changes (Andriotis, 2006). In addition to promising tourists access to the beach, coastal resorts increasingly accommodate recreational, retail, and entertainment facilities. The exponential growth in coastal resorts is associated with higher disposable incomes from tourists, better modes of transportation and more available time for leisure activities. Coastal resorts evolve from their natural state to become increasingly urbanized through tourism-induced development within a short span of time. The arrival of tourists provides economic opportunities for those seeking employment and business. Coastal tourism brings foreign exchange to the government, and incurs social, environmental and political changes. The development in turn has triggered a rising coastal property market as resorts proliferate and expand along the coastlines. Consequently, problems surface such as environmental degradation; loss of coastal vegetation from extensive use and land clearance to accommodate development; socioeconomic polarization from highly influential tourist culture; and economical decline of resorts due to overdevelopment, high competition, and low occupancy rates. Smith (1992, p. 209) points out that inadequate resort growth planning eventually leads to a "proliferation of environmental and social problems, poor infrastructure provision and deteriorating resort ambience".

From a planning perspective, the issues that accompany coastal resort development are attributed largely to the cumulative effects of a piecemeal approach to land use and zoning (Honey & Krantz, 2007). Tourist developments mainly occur as close to the beach as possible, with minimal direction or control and lack of governmental guidance, resulting in a development pattern incompatible with beach dynamics and environmental functions (Nordstrom, 2000). While small-scale coastal environment land use decisions may have minor effects in isolation, a number of these combined produce major changes and predominantly negative consequences (Collins & Kearns, 2010). Most resort developments are undertaken without assessment or consideration of potential impacts, except for anticipated economic benefits (Butler, 1993; Huffadine, 2000; Prideaux, 2009). In particular, a lack of geo-morphological awareness can bring many "socio-economic disadvantages" to coastal areas engaged in resort planning (Inskeep, 1988; Nordstrom, 2000) as morphological changes have profound impacts on recreational amenity and dispersal of the natural environment.

The paper aims to understand the process and consequences of land use change resulting from coastal tourism in an attempt to minimize negative impacts, and sustain coastal resources. The purpose of this research is to enter the territory of coastal resort development, and through a morphological analysis, outline the phases and impacts of a coastal resort's urbanization process, and identify ways in which land use planning can be employed for the better. In particular, the current research examines morphological changes on Denarau Island, the island in Fiji with the highest concentration of tourist accommodations. The stages of tourism development on Denarau Island were evaluated by Smith's Beach Resort Model (BRM) in the context of

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physical, environmental and social characteristics to ascertain the changing process.

2. Beach resort model and conceptual framework

Morphology is a term widely associated with geography, but it is increasingly being used in the fields of architecture and urban planning (Xie & Gu, 2011). Morphology is defined as the study of the physical form of landscape, including how structures operate, the adaptability of structural features, the dominant functions of a given structure, and how structures, functions, and features change over time (Liu & Wall, 2009; Pearce, 1978). Only a few, if any, attempts have been made to apply the methods and models of morphology in the context of resort development and coastal tourism planning (Whitehand, 2005). The field of urban geography in particular, however, has utilized morphology to yield a number of generalizations about the structure and function of towns and cities that may prove applicable to the study of coastal resorts (Jansen-Verbeke & Lievois, 1999). Specifically, the applications of morphology in urban geography provide a means to understand the form and spatial configuration of coastal resorts by relating each development to the visual and psychological context in which it took place. Thus, morphology can be utilized as a tool to assess coastal resorts.

In general, coastal land use change begins with minor modifications to the natural landscape, and small-scale resort development, the success of which initiates further development and extensions until the coastal landscape has been completely transformed (Xie, 2003). At this point, the coastal landscape becomes urbanized which leads to concerns about environmental, social, economic and cultural degradation, as the decline and failure of the resorts begin. At the same time, the impacts of drastic landscape modifications and resulting effects raise governmental and public concerns with regards to sustainable development and management.

Changes in urban morphology can be correlated with the developmental stages in conceptual models of coastal resort evolution. It is argued that coastal resorts and urban fringes experience the most rapid land use changes of all populated areas (Allen, Lu, & Potts, 1999), the impacts of which may be both positive and negative, depending on the level and nature of influence exerted upon land use, tenure, and values. Of equal importance is the role of the decision-maker, such as the territorial local authority (TLA), that controls resource management and planning. However, previous research on morphological changes on the coast places less emphasis on decision making from the territorial local authority's perspective. The conceptual models such as spatial structure by Pearce (1998); spatial evolution by Lundgren (1974) and Oppermann (1993); and temporal change by Butler (2011) resulting from coastal resort and tourism studies (Agarwal, 1997, 2002; Allen et al., 1999), mention the influence of territorial local authorities only briefly, if at all. In particular, the importance of the local authority policies, such as the adaptation of the master plan, has been neglected in the context of morphological changes.

The concepts of resort morphology and evolution were first introduced by Gilbert (Butler, 2011). These two concepts were later separated and evolved in different directions, which, after some time, intertwined together and became a single evolutionary model in 1990s (Brent, 1997). Several common features of resort morphology, such as the significance of the seafront to the building structure and location of the commercial core, were identified as the "distinct zonation" of visitor accommodation and residential areas, and an extension of settlements parallel to the coast (Getz, 1993, p. 584; Pigram, 1977, p. 525). The model follows a zone of frontal amenities comprised of tourist facilities followed by a gradual decrease of tourist-related activities as distance from the central beachfront increases, creating a 'concentric pattern' of architectural and social stratification (Meyer-Arendt, 1993; Smith, 1992). This pattern of development exemplifies the market value for the land.

In contrast, Stansfield and Rickert (1970) focus specifically on retail activities and develop the concept of the Recreational Business District (RBD) based on studies of New Jersey seashore resort towns (Smith, 1992). The concept of the Recreational Business District explores the characteristics of the specialized frontal trading zone. Yet another schematic diagram of a typical coastal resort is forwarded by Lavery (1974), consisting of a mixture of tourism-based land use and buildings from studies of Western Europe (Getz, 1993). Lavery's scheme identifies features such as larger hotels occupying the prime frontal locations with gradual changes to land value and tourist-oriented functions away from the seafront. By classifying resorts into eight types and associating them with certain landscape characteristics and features, Lavery stresses the spatial and functional separation of the Recreational Business District (RBD) and Central Business District (CBD) in resort redevelopment. However, these morphological claims are inadequate at present time. Perhaps the greatest disadvantage is that the first line of development often consists of high-rise structures, forming barriers both visually and physically between the inner residential zones and the coast. The vehicle path creates a further barrier for the pedestrians by disrupting their flow to the coast. The linear development pattern itself is often displeasing and degrading, both aesthetically and environmentally.

The evolutionary methods of plan analysis have gained attention on tourism development in coastal communities at various stages (Agarwal, 2012). For example, in Thailand, the initial stage of development involves construction of simple low-budget visitor dwellings, later upgraded as visitor numbers increase, and then procured by developers who construct hotels to meet the increasing demands (Nordstrom, 2000). Ultimately, morphological changes lead to the expansion of physical buildings and infrastructure. In Europe and America, resorts grow from an exploration stage, to a stage of commercial involvement and infrastructure development, followed by settlement expansion, and further intensification of developed sites (Wu & Cai, 2006). At the end of this period of expansion and intensification, all potential developable land has been urbanized and incoming tourist rates have stabilized, and this is when "human induced environmental degradation" is recognized and translated to government controls (Nordstrom, 2000, p. 10). The government response includes the creation and implementation of land use regulations to stabilize and control market demand due to uncontrolled developments. The urban development policy is crucial as it exerts influence in the morphological changes that occur over time for sustainable development.

Despite the wide application of the evolutionary method in tourism planning, there is a similarity in terms of models' contexts and contents. Most new iterations of the evolutionary method have been improvements to a previous model, incorporating changing philosophical views and new understandings of how resort morphology changes. There is no succinct model that incorporates specific features, such as physical, environmental and social characteristics. In response to the lack of applicability of the historic research and resort evolution models, Smith (1992) put forward a revised concept to bridge the gaps of the previous research in form of the Beach Resort Model (BRM). It is noted that this model has previously been referred to as the Tentative Beach Resort Model. The BRM accounts for the evolution of contemporary coastal resorts established following Word War II (Smith, 1992), which combined incorporated aspects of previous research and new unpredictable patterns of development to produce a refined and strengthened schema. In particular, this model provides generic plans for each stage of development and identifies the factors against which change is recorded from the previous stage. The six elements of change are morphological, physical, environmental, social, economics, and political. The evolution of coastal resorts is categorized into eight stages: (1) pre-tourism data; (2) the construction of second homes, which typically marks the first stage of tourism development; (3) the construction of the first hotel improving visitor access; (4) the establishment