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**Abstract**

Resort morphology goes through a predictable sequence of stages: from pre-tourism low through high-density development to an urbanized state. Three elements are considered essential in such coastal resorts change: hosts, guests, and politics. Using historical data from the mass-developed Greek island of Crete, ten principal characteristics are identified as determinants of the morphological change of coastal resorts. A temporal model of unplanned change is also proposed. Although the study was constrained by limited data availability, the proposed model is deemed able to represent the morphological change of Cretan mass-developed coastal resorts.

**Keywords:** hosts; guests; politics; morphology; urbanization; coast; resort cycle; Crete

### Introduction

The increasing demand for beach holidays brought about the emergence of a number of coastal resorts and the planning of many new ones worldwide. In response, several descriptions of the pattern of physical morphology of coastal resorts are available ([Andriotis, 2003a](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib7); [Lavery, 1971;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib52) [Smith, 1992a](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib70); [Stansfield and Rickert, 1970](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib75) and [Weaver, 1993](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib82)). Most have focused on the existence of such elements as promenades, central business districts, recreational business districts, the zoning patterns of development, and the patterns of streets in relation to transport opportunities (rail stations, airports). While all provide a description of the morphology of resorts, the majority are not placed in a historical context and thus do not offer an understanding of the processes by which resorts are being transformed to urban space. As a result, they neither explain nor predict the evolution, and hence, they present limited understanding of the planning initiatives that must be undertaken by the public sector through the stages of the resort cycle. Addressing these shortcomings, [Pearce believes that more emphasis should be placed on “changes in morphology so that the processes involved can be better understood and the evolution of future forms more readily anticipated” (1987:177)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib62).

This paper draws historical data from mass-developed coastal resorts of Crete in Greece and a number of existing models and concepts in order to build a model representing morphological changes of coastal resort expansion occurring as a result of unplanned activities. It is believed the suggested model will provide a useful framework for future research and its operationalization will help developers and planners to gain insight for morphological evolution of coastal resorts. The island of Crete constitutes an appropriate site for the study due to two factors. First, as of now, research about morphological change caused by tourism in the Mediterranean insular coastal resorts remains limited. Crete, a Mediterranean island with extensive tourism development, presents key characteristics and, as such, can be taken as a basis for explaining changes in the coastal resorts. Second, although the Cretan resorts have undergone significant morphological changes between the early arrivals of tourists and their final urbanization, research concerning these changes has been significantly neglected. A notable exception is the study of [Kousis (1984)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib45) for Drethia (a pseudonym for a coastal community in Heraklio Prefecture). However, this study was undertaken more than 20 years ago and although it dealt with various aspects of morphological change through tourism, it focused mainly on social change in a single coastal community.

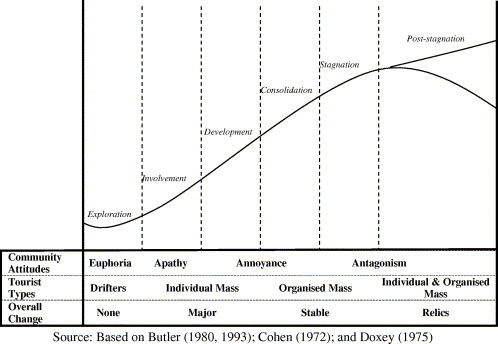
In analyzing change over time in Crete, historical records were necessary. Data for the earlier periods of development were obtained from Cretan newspapers and magazines dating from the beginning of the 20th century. Additional sources were used, such as the Internet and published and unpublished studies, which contained textual and/or pictorial data (mainly maps, plans, and photographs). Finally, Cretan coastal resorts were observed over a number of years and experts’ opinions were taken under consideration.

### Coastal resorts morphological change

With the exception of instant resorts, planned exclusively for tourist use and undertaken by a single developer, the urbanization of seaside properties takes place not suddenly but progressively. Since the impacts of development to a resort, whether economic, physical, or sociocultural, are the result of a complex process of interchange among guests, host communities, and destination environment ([Mathieson and Wall, 1982;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib53) [McMinn and Cater, 1998](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib54)), the understanding of changes in coastal resort morphology and the related processes is useful for predicting and mitigating the potential physical costs in each stage of the resort cycle, thus avoiding the decline of the destination.

According to [Butler (1980)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib25), the stages of resort evolution are exploration, involvement, development, consolidation, stagnation, and decline or rejuvenation ([Figure 1](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_fig1)). Bearing this in mind, a number of authors ([Smith, 1992a;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib70) [Smith, 1992b;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib71)  [Young, 1983](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib83)) have suggested that resorts morphology goes through a predictable sequence of stages: from pre-tourism, to low-density development, and from high density development to an urbanized state. These changes occur as a resort moves from a discovery stage to moderate, and, finally, to full tourism development. They include tourist visitation from explorers and drifters, incipient mass, and mass tourism ([Cohen, 1972](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib27); [Smith, 1978](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib72)), and subsequent changes in community attitudes and reactions from euphoria to apathy, and from annoyance to antagonism ([Doxey 1975](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib30)).

**Figure 1. Hypothetical Cycle of Resort Evolution**



The discussion of morphological changes anticipated in each stage of resort evolution, as well as the main actors involved in the process, is based on Butler’s model of resort evolution, as well as past morphological studies ([Meyer-Arendt, 1985](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib55); [Smith, 1992b](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib71); [Weaver, 1993](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib82); [Young, 1983](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib83)). During the exploration stage, the resort is isolated, showing signs of little or no development. Prior to development only a settlement is present, perhaps a village, which is fishing and/or agricultural oriented. Discouraged by lack of access and facilities, only a few non-institutionalized adventure tourists (explorers, allocentrics, poets, painters) visit the coastal village. They are welcomed by the locals.

In the involvement stage, tourists from the overcrowded urban center come to reside for some days at the village, attracted by its relaxing and unspoiled landscape. Local entrepreneurs become aware of the economic potential and begin to provide facilities and services. The first hotels are constructed and accessibility dramatically improved, guaranteeing better access to the beach, hotels and second homes.

In the development stage, traditional houses are converted for business purposes, and more and more accommodations, infrastructure, commercial, and recreational facilities are constructed, as well as second homes facing the sea. As the resort expands and reaches this stage, a strip development pattern emerges and the road network is extended. The number of incoming workers rises, and more residences are constructed to accommodate the imported workforce. Locals tolerate tourism’s unwanted effects because of its substantial economic advantages ([Bramwell 2003](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib23)).

In the consolidation stage, a drastic reduction of beach width occurs because of the construction of more accommodation establishments and businesses. Residential areas, relocated away from the beachfront, continue to increase in size in order to meet the housing needs of the incoming workforce. A well-delineated business district is now present. Some enterprises aiming at the passing trade are also constructed on the way leading to the beach. The road network is further expanded in order to provide access to the accommodation establishments, businesses, and residences. Prices fall as a result of the oversupply of hotel rooms and other facilities, and the clients attracted are those aiming at the 4S (sun, sea, sand, and sex), coming in groups exclusively organized by foreign tour operators. The community perceives some negative effects, and an anti-tourist sentiment may emerge.

When the resort reaches the stagnation stage, the tourism landscape becomes dominant and the margin for further expansion shrinks ([Meyer-Arendt 1990](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib56)). Since the beachfront is occupied, accommodation establishments are constructed in inland areas. As a direct result of the lack of direction and regulation, the resort becomes urbanized, its capacity levels are reached or exceeded, and it loses the local quality that made it attractive in the first place.

Attempts to test or modify Butler’s model of resort evolution are an enduring feature of research ([Butler, 1993](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib26); [Cooper and Jackson, 1989](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib28); [Douglas, 1997](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib29); [Getz, 1992](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib36); [Ioannides, 1992](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib42); [Priestley and Mundet, 1998;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib66) [Tooman, 1997](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib76)). Nevertheless, comparatively few researchers have documented the changing coastal resort morphology by placing their studies in a historical context. Among the first who did so were [(Bollerey, 1986](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib22); [Funnell, 1975](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib34); [Walton, 1983)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib81). However, their studies were focused on European and North American coastal resorts in an era when mass access by international jetliners was not possible, and these developments emerged over a longer period of time than most contemporary coastal settings did. As a result, these studies cannot account for the processes involved in the morphological transformation of most that evolved after the Second World War.

[Young (1983)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib83) was among the first to deal with contemporary coastal resorts by suggesting a general model of the process of touristization and landscape change in a Maltese fishing village. Later, [Meyer-Arendt (1990)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib56) developed a model of the morphologic evolution of a typical Gulf of Mexico seaside resort consisting of three stages: exploration, infrastructural development, and settlement expansion. Finally, [Smith (1992b)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib71), describing the progress of a resort from natural beach to urban beach, suggested an eight-stage tentative model that, despite its diverse inconsistencies, can be considered one of the best attempts to explain the morphological transformation of contemporary beach resorts.

#### Elements of Morphological Change

There are two kinds of preconditions of development: the necessary and the sufficient ([Andriotis, 2005a](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib11); [Auty, 1995](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib18); [Rostow, 1990](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib68)). In tourism, the former include factors that direct people towards different destinations: very often agreeable landscapes and archaeological sightseeing. However, many destinations rich in these necessary preconditions never move from the stage of potential to that of actually being developed, because they lack the sufficient preconditions. These consist of a person’s will to develop the tourism industry, to invest in infrastructure and accommodation ([Andriotis 2005a](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib11)). From this principle, morphological change of resorts is best conceptualized as an interaction of forces underpinning development. According to [Haywood (1986)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib39) these range from concerned publics, to the needs and expectations of tourists, to government intervention. Thus, in attempting to synthesize the morphological changes of coastal resorts, the three most important elements are guests (who are the main cause for induced development); hosts (who by supporting development and by being involved in tourism contribute to the success of a destination); and politics (which influence overall development). The high amount of interplay among these players is guiding coastal evolution; therefore, morphological change of Cretan coastal resorts is analyzed in the framework constructed by these three stakeholders.

*Guests.* Centuries ago, travelers, artists, and men of letters were fascinated by the Minoan ruins, the art, history, and literature of Crete, as well as the Greek legends of gods and heroes ([Pashley, 1837](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib60); [Sieber, 1823;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib69) [Spratt, 1865](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib74)). However, before the Second World War, only a few thousand “of archaeologically or classically educated foreigners came on what amounted, for them, to a sacred pilgrimage” ([Greger 1988:112](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib38)). Most of these tourists used to arrive at the capital city of Heraklion by cruisers, in order to visit the museum of Heraklion and a few antiquities, such as Knossos Palace, and they departed the same day for other Greek destinations.

During the 60s, rich tourists started discovering Crete, attracted mainly by its archaeological sites. The movies *“Zorba the Greek”* and *“The King Must Die”* made the island famous abroad. In 1962, approximately 23,000 tourists paid quick visits to Crete and hence spent small amounts of money ([Basil 1964](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib20)). The short stays and the delay of tourism development were a result of the low level of infrastructure, accessibility, and communications of an island which had been caught in a series of wars between 1821 and 1950. In the following years, the surge of historically minded tourists has been limited, and hippies (the so-called “flower people”) made their appearance. They “found a sympathetic response in traditional Cretan rituals of sharing,” but soon “it became evident that the visitors’ naivete, far from making them innocent, made their role in Crete a parasitic one” ([Greger 1988:113](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib38)). It was this evidence that finally turned the local population against them.

When the airport of Heraklion became international in 1971, and charter flights started to land, the mass-organized tourists marked a new era of commercialization for Crete. Today it is being visited by nearly three million mass arrivals that represent [Urry’s (1990)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib80) “collective” tourist gaze. Undoubtedly, most are bent on having fun and end up with a conception of Crete that is far from closely associated with the Greek classical past ([Galani-Moutafi 2000](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib35)). These tourists demand various types of facilities for accommodation, infrastructure, recreation, and leisure, necessitating public and private investments. The last decade has seen a strong demand by EU nationals for second homes in Crete. As a result, many coastal properties have been bought by foreigners attracted by the good weather, and the low, compared to their home countries, prices of land.

*Hosts.* During the first decades of the 20th century, Cretans had a courteous attitude towards foreigners ([Kritikes Selides 1938](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib48)). However, incidents of exploitation were not unheard of. For example, a local newspaper reports that in April of 1933 a group of tourists in Heraklion was disappointed because of a slugfest among local drivers over transport charge to the archaeological site of Knossos ([Drasis 1933](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib31)).

Attempts of the Greek authorities to increase the number of arrivals, such as the opening of Heraklion airport in 1939, came to an end with the declaration of World War Two. While Greece was recovering from it, the Cretan population showed a sense of cooperation and a positive attitude to development. Since then, the island has been forced to adjust at an alarming speed to the differences between its own extremely conservative lifestyle and the relaxed behavior of its tourists ([Hopkins 1977](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib41)). The immodest and occasionally provocative conduct of the guests often made locals indisposed towards them. For instance, locals from the seaside village of Loutro used force against nudists walking in their village ([Kritikes Selides 1982a](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib50)). In 1977, American soldiers profaned the Greek flag and abused the locals. The latter’s response was a thrashing ([Kritikes Selides 1982b](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib51)). Despite such incidents, a 1981 survey addressed to the residents of Hersonissos demonstrates acceptance of foreigners, highlighting locals’ vested economic interest resulting from tourism ([Kritikes Selides 1981](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib49)). Recent studies ([Andriotis, 2002;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib6) [2004](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib10); [2005b;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib12) [Andriotis and Vaughan, 2003](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib16)) have shown that although Cretans acknowledge some negative effects of tourism on society and the environment, they are quite firm in their support for it.

As a matter of fact, the local community played a significant role in the development of the coastal areas’ product, mainly during the early arrival of tourists. Nevertheless, later on, outsiders also invested in tourism. As Kousis reports, after World War Two, most of the land in Drethia was cultivated by locals except for a few barren sections (1989:322). But between 1965 and 1972, land ownership changed substantially, and a large part of the coast was purchased by a handful of outsiders from different regions of Crete, Athens, and abroad to establish tourism businesses. As a result, large hotels are now standing in the best locations of Drethia, near the beach or along the road that connects the village center with the beach. According to Herzfeld, the most fortunate buyers were those who invested in seaside properties before the war at a value of one barrel of oil per kilometer strip (1991:154).

A follow-up of tourism evolution in Crete was the abandonment of traditional agricultural and craft-related occupations, a natural consequence of tourism-related jobs being considered more attractive and profitable ([Andriotis and Vaughan, 2004;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib17) [Kousis, 1989](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib46)). As Kousis reports for Drethia, with the arrival of tourists, “the number of farmers decreased dramatically, while those for small shopkeepers and wage earners increased considerably” (1989:332). In Hersonissos, in the 60s the agriculture sector occupied 95% of the labor force, although today, with the transformation of the coastal zone into a destination, tourism occupies more than 50% of total workforce. Today, tourism in Crete generates nearly US$1.5 million of foreign exchange and it is estimated that approximately 40% of the local population is directly or indirectly involved in it. Even in the interior of the island, farmland is being either abandoned or used for tourism-related activities, such as golf courses and water parks ([University of Cincinnati Sustainable Development Group 2001](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib79)).

Most Greeks view land as a way to create wealth, to increase social status, and to pass on wealth to their children ([Patton and Sophoulis, 1983](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib61)). As a result, during the 60s, when arrivals started flourishing and formerly useless beachside fields became immensely valuable properties, a more intensive form of coastal land use was generated. Cretans have responded to the scarcity of land and escalating prices in coastal areas by increasing its productivity. The ever-spiralling increase of arrivals has encouraged many landowners to build small, but often multi-unit, structures, often to the maximum legal capacity of the site or above, purportedly for various types of recreation activities for both the host and guest populations ([Patton and Sophoulis 1983](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib61)). The originality of this specific pattern involves both tourist arrivals and the construction of second homes, a kind of diffused urbanization that splits life between city, in winter, and the coastal resorts, in summer ([Tsoulouvis 1998](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib77)). Many Cretans see owning a house overlooking the sea as the most secure form of investment and as a status symbol. As a result, an estimated nearly 50% of Greeks own second homes (Hope 1998), reinforcing the strip development pattern. To cover the high demand for coastal land and to increase productivity of valuable coastal properties, most residences have been constructed in inland areas, and the incoming workforce lives in the nearby urban locations or the interior.

*Politics.* The power of government bodies and other political players is important to the understanding of the evolution of resorts. However, in Crete, tourism before the World War Two played a minor role in the development of the economy, since the state involvement was limited, and tourism was left entirely to the initiative of local investors. A fierce resistance campaign against German occupation from 1941 to 1944 in conjunction with a savage civil war between the Conservative Party in power and the representatives of communist movements after the war, marked the end of all previous attempts for tourism development and precipitated the decline of the Cretan economy, including tourism. Only after the end of the Civil War in 1949, did Greece enjoy political stability, and did the island’s infrastructure grow partially restored. However, public and private investments in tourism were very low, $307,820 (88,597 thousand Drs), between 1954 and 1964, since tourism’s potential as an activity that would boost foreign exchange earnings was not acknowledged by the first Five Year Plans of Economic Development ([Andriotis, 2001](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib5)).

Only after the 60s, a series of development plans concerning the tourism industry were given high priority. The weak point of these plans is the difficulty of predicting growth rates. For example, [Basil (1964)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib20) predicts a demand of a total of 15,000 hotel beds and a volume of tourism investments of $20,846,340 (6,000 million Drs) for the year 1975, while, for the same period, [Glikson (1965)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib37) predicts 3,000 beds and an investment of $2,432,073 (700 million Drs). In reality, the actual numbers for the year 1975 turned out to be 6,500 new hotel beds and $7,817,377 (2,250 million Drs). It must be admitted that the consideration given by the consultants, as well as by the authorities, for the implementation of the plans was minimal.

Xenia, the first Greek state-owned hotel, was established by the Hellenic National Tourism Organization in 1965 in an attempt to increase tourist flow. Furthermore, the government’s involvement in the promotion of tourism came also in the form of allocation of funds for organizing and developing the industry, and for providing financial assistance to the private sector. The funds were distributed in the form of grants, interest-free subsidies, tax-exempt allowances, and extra depreciation. They meant to enable the construction of accommodation as well as any related facilities in coastal locations almost without limits ([Andriotis, 2001](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib5)).

Obviously, external support had a positive effect on development, although the exact degree to which international organizations contributed to the development of the Cretan economy is difficult to estimate. For example, one of the first development studies concerning the island ([Basil 1964](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib20)) was sponsored by Organization for Economic Co-operation and Development. Further, significant funds started flowing to the island, pushing its tourism industry forward, when Greece joined the European Union in 1981 ([Briassoulis 2003](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib24)).

In 1967, year of the *coup d*′*etat*, a military regime was put in place and, as a consequence, a significant number of the preconditions for sustained development created in the proceeding years were cancelled. However, despite fewer arrivals during the first two years of dictatorial rule (1967–68), the junta undertook several road-building and other infrastructural projects which have eventually supported tourism expansion ([EIU 1986:58](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib32)). A few wealthy locals were in the appropriate financial position to take immediate advantage of the military junta’s indiscriminate stimulation of development ([Herzfeld 1991:73](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib40)). As a result, a period of considerable financial flow for development purposes commenced and tourism investments reached $5,937,732 (1,709 million Drs) between 1967 and 1971, a mere 6% of which were offered by the public sector ([Regional Administration of Crete 1972](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib67)). Because the junta feared the corrupting influence of decadent hippies on Greek youth, it placed at one stage a ban on bearded or longhaired men entering Greece ([EIU 1986](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib32)).

Subsequent to the political mishandlings which brought about the Cyprus crisis in 1974 and the fall of the colonels the same year, democracy was restored in Greece, and foreign tourist inflow started to increase. However, most governments, from the military junta (1967–1974) to recently elected ones, have borne a rather ambivalent attitude towards tourism. As a matter of fact, they did provide incentives for the construction of thousands of cheaply and poorly built hotels which have mushroomed all over the island’s coast, and damaged the shore along with any future tourism potential ([EIU 1986](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib32)). Notwithstanding strict legislation, quite a number of these establishments operate without licenses. Despite officials’ threats to demolish illegal buildings, banned construction is widespread in many areas ([Andriotis, 2003a;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib7)  [2003b](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib8)). In practice, the main deficiency of the Greek legal system appears to lie more with the enforcement of the laws than with their creation.

The intense building in coastal areas has lately forced the Greek government to declare many areas of Crete “saturated”, to the effect of prohibiting any further construction of accommodation establishments ([Andriotis, 2001](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib5)[; 2003a](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib7)). The recently established Ministry of Tourism Development aims to forestall stagnation and decline as well as to decrease the industry’s dependence on sunlust tourism and foreign tour operators by regulating the industry’s growth and diversifying its nature. Concurrently, local authorities seek to increase the product appeal and tourist spending by promoting the construction of integrated resorts. To these ends, they promote the construction of a massive tourism complex in Cavo Sidero, Sitia, as well as other proposals for large scale investments ([Andriotis, 2005a](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib11)).

A problematic factor is the overlap of responsibilities between various governmental bodies, resulting in administrative conflict and inefficiency. In Crete, local governments have been poorly funded, and, as a consequence, their ability to interfere in the tourism industry generally and the physical development of coastal resorts in particular, is curtailed. Plans are usually formulated by experts located in Athens; thus, they do not make sufficient room for the local needs. As a result, policies frequently generate friction, and sometimes are withdrawn for revision shortly after being introduced ([Anagnostopoulou et al., 1996](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib3); [Spanou, 1998](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib73)).

*Morphological Change over Time*. It follows that tourism does not grow in a void but, usually, in large urban centers where some form of urban hierarchy and transport networks is to be found ([Andriotis, 2003c](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib9); [Oppermann, 1993](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib58); [Pearce, 1989](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib63)). It comes as no surprise then that the pioneer tourists arrived at Crete via the capital of Heraklion since, on the one hand the currently mass coastal resorts were generally inaccessible, and on the other, the road system in general including specific roads accessing sites of antiquities and beaches were insufficiently developed in the 50s.

By virtue of the spread-out effect, small seaside villages, dispersed in close proximity to the urban centers of the island, started to attract the first excursionists. Since these villages did not offer any facilities, the locals started to accommodate them. As Kousis demonstrates for Drethia:

In the early 1960s, on the beach of Drethia, there was a summerhouse owned by a retired mayor, coming from a higher status family. At that time, the first tourists made their appearance in Drethia. Since there were no facilities to accommodate them, the retired mayor started “hosting” them in his place. When more tourists arrived, in the next few years, he had extra rooms built as an extension of his house. This is the first tourist accommodation establishment on record in the area (1984:101–102).

Statistics indicate that a total of 2,315 hotel beds were available in Crete during 1962. Most were for local traffic and only 950 were of an acceptable quality. Nearly 60% of the latter were in Heraklion and its surroundings, 15% in Chania, 15% in Agios Nikolaos, and only 10% in Malia, Archanes, Souda, Ierapetra, Sitia, and Paleochora ([Glikson 1965:154](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib37)). Later, the junta’s incentives to heavy-handed promotions of large-scale tourism during the period 1975–1978 created a new type of coastal communities, which constituted a new form of diffused urbanization away from large cities, lacking any production activities other than those associated with leisure and tourism and any facilities to support a full-year stay ([Andriotis, 2006b](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib15); [Greger, 1988](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib38); [Hopkins, 1977;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib41) [Tsoulouvis, 1998](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib77)). As Peterson and McCarthy suggest:

As but one example, much of Stalida, a tourism oriented beach community, is characterized by small, irregularly shaped parcels; there are few streets and most parcels are land-locked, with only informal, if any, access to either the streets or the beach; building-to-lot coverage ratios are high; and buildings are sometimes so close that one can touch the adjacent structure by leaning out a window or over a balcony. The overall appearance of Stalida is of cluttered and chaotic overbuilding (1990a:7).

Since the road network of coastal resorts was not sufficient to satisfy the increasing supply, the system expanded as a consequence of the unplanned evolution, transforming eventually the informal tracks leading to coastal farming land into formal ways. On the other hand, some property owners have encroached on the street space, hence further reducing the effective width and creating bottlenecks for traffic ([University of Cincinnati Sustainable Development Group 2001:10](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib79)). Constructions often follow a drawn-out process “where the capturer first plants a public area to establish his interest; a few years later adds soil to make the site buildable; eventually adds a small ‘temporary’ structure that is expanded incrementally; and over time, the true ownership of the land is forgotten” ([Patton and Sophoulis:1983:261](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib61)). The effect of these actions has been to produce a heavy concentration of buildings behind the shoreline, reducing beach width ([Tzatzanis, Wrbka and Saubener 2003](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib78)), and frequently calling for many kinds of defensive structures to protect beachfronts and to prevent destruction of buildings, roads or bathing establishments at risk from the sea.

The tourism boom resulted in rampant, illegal coastline development. Until recently, Greece had no zoning and land registry system. For many years, anyone could construct any type of building, as long as modest building restrictions were respected ([Andriotis, 2003a](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib7); [2003c;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib9) [Peterson and McCarthy, 1990b](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib65)), and local authorities frequently approved without objection private project proposals, either because of the lack of regulations, or because they were compelled by market forces and social pressures. The practice of Greek political parties in electoral campaigns consisting of making promises and then enacting statutes which declared existing illegally constructed buildings to be in compliance with the law led to the construction of more than 5,000 illegally-built units in Crete, in 1983. These contributed to coastal pollution and disfigurement ([Peterson and McCarthy 1990b:168)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib65).

The high concentration of buildings has transformed many seaside villages into urban space. The number of hotel beds has increased from 5,178 in 1970, to 50,544 in 1986, and to 139,001 in 2004. The rising number of businesses attracted an increasing seasonal immigrant workforce ([Andriotis, 2005c;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib13) [Andriotis and Vaughan, 2004](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib17)). For instance, [Association of Hellenic Tourist Enterprises (1995)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib2) estimates that, in Hersonisos, a population of approximately 4,000 has an incoming workforce of 10,000 during the summer. Since the original resort has been overbuilt, there was not enough space for further development. As a consequence, new buildings were erected in inland areas to accommodate for workers. In addition, residents were relocated away from the beachfront to provide space for tourism-related activities.

Undoubtedly, fishing villages such as Agios Nikolaos, Hersonissos, Malia, and others have been transformed to internationally renowned resorts which however lack in authenticity and traditional character due to quick and easy profit generated from mass development. As Kousis reports for Drethia:

During the 1950s and early 1960s the village was famous for its fertile gardens, its picturesque windmills, and its beautiful view. In 1980s the intensive agricultural activities have been replaced by activities promoting tourism. Consequently, the scenery has now changed greatly. The coastal rim, as well as the two kilometres road that connects it with the village center, have been taken over by various forms of tourist accommodation. Motels, rent-room facilities, camping grounds, hotels of varying sizes, tavernas, restaurants, coffee shops, discotheques, and bouzoukia establishments are encircling and concentrating in and around the north part – closest to the shore – of the village (1984:55).

Because reinforced concrete is simple to use and relatively inexpensive, Cretans seem to prefer it, “right angles everywhere, rigid metal fences and balcony railings, concrete pillars often painted puce in honour of Knossos” ([Hopkins 1977:189](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib41)). In fact, buildings have lost the traditional architectural style and many coastal resorts are densely built with multi-story houses. According to the University of Cincinnati Sustainable Development Group:

The built environment in the Port of Hersonissos has a harsh and transient feel. The style and construction of the buildings are not merely far removed from the traditional Greek style, but many of the buildings and hotels are placeless, with little attention paid to the relationship of the buildings to the culture which they preside. This lack of cultural identity is problematic … The entire coastal area has a disorderly and overgrown appearance. A range of structures has been built as and where space was available, and with no relationship to one another, over a long period of thirty years. The port area is extremely piecemeal … There is little uniformity in the orientation of buildings, the size and the direction of the streets, and the spaces between the buildings (2001:3).

In the context of globalization, Crete, as a peripheral island, is seeking to assert itself more strongly on the international scene. This along with the minimalism in state intervention have entailed the fact that the physical form of coastal urbanized space and the architectural landscape of contemporary Cretan resorts have been a product of step-by-step development. Literally this means a property-by-property design of urbanization of the coast without much consideration about spatial entities such as the street, the square, and the larger area. As a result, today, many of its coastal resorts appear worn and trivialized, and the physical environment spoiled. In an attempt to safeguard the island’s underdeveloped coastline areas, either from developers and public agencies who might greedily and uncaringly exploit them, or from hosts and guests who may not fully appreciate their symbolism and importance, many Cretans and local environmental groups often express complaints to authorities and objections to further development ([Kousis 2000](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib47)).

*Towards a Model of Coastal Morphological Change*. From the historical data about the island of Crete emerges a pattern of ten principal characteristics determining the morphological change of coastal resorts. Shown in [Figure 2](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_fig2), they are discussed here with respect to this island. First, beach width has been reduced as a result of the construction of roads and private developments built on the immediate seashore. Second, although there are not any available data for the number of residential areas, an observation of coastal resorts over a number of years shows that the number has increased to meet the housing needs of the seasonal workforce and the local population.

**Figure 2. Characteristics of Morphological Change**

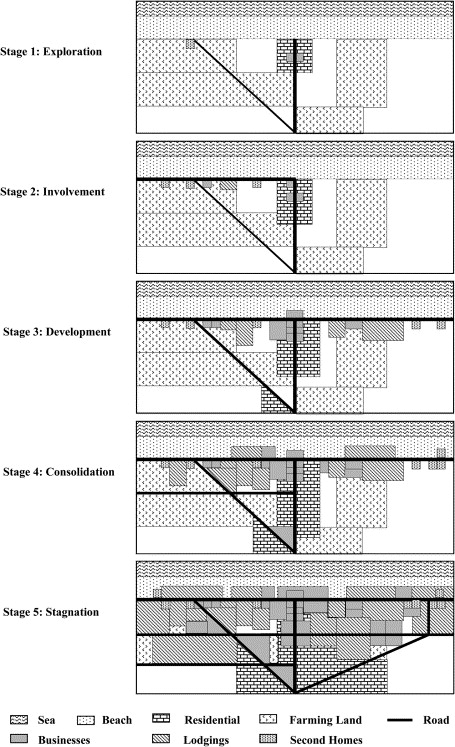
|  |  |
| --- | --- |
|  | **Exploration Involvement Development Consolidation Stagnation** |
| 1. **Beach width** | Maximum Decreasing Minimum |
| 1. **Residential areas** | Few Increasing Peak |
| 1. **Farming land** | Peak Decreasing Few |
| 1. **Road network** | Minimum Expanding Maximum |
| 1. **Tourism businesses** | Few Increasing Many |
| 1. **Lodgings** | None Increasing Peak |
| 1. **Second homes** | Few (if any) Increasing Peak |
| 1. **Ribbon development** | None Increasing Maximum |
| 1. **Architecture** | Traditional Traditional / Modern Modern |
| 1. **Overall morphological transformation** | None Increasing High |

Third, with the expansion of tourism, farming land changed use in order to satisfy either tourist-related activities that were considered more profitable, or the need of accommodation for locals and the immigrant workforce. Fourth, the road network expanded rapidly, usually without any initial planning, to provide access to lodgings and businesses. Fifth, the establishment of tourism businesses has increased. However, it is not possible to define the limits between central business districts (a typical set of retail establishments) and recreational business districts (an aggregation of various recreational facilities and shops) because the resorts emerged without any initial planning. Sixth, lodgings and infrastructural facilities increased in number in order to satisfy the needs of the incoming tourists.

Seventh, although no data are available about the exact number of second homes in each stage of the resort cycle of Crete, it is clear that their number also has increased. Eighth, a ribbon development pattern has been formed from the construction of lodgings and tourism businesses along the sea. Ninth, the local architectural and traditional character has been lost only to be replaced by modern structures. Tenth, it is clear by the evidence provided in this paper that tourism demand and supply have increased in a formidable scale, thus resulting in a tremendous morphological transformation through a mixture of recreation with production and other incompatible uses such as second homes, hotels, and traffic. As a result, green areas are scarce, and Cretan coastal resorts are densely built, going through the same processes as large cities. It follows that the shore has lost its authenticity and is no longer as beautiful and attractive as it used to be during the early tourists’ arrivals.

The aforementioned characteristics form a basis for the understanding of morphological change of Cretan coastal resorts. However, the literature review made obvious the absence of a clear description of this change through Butler’s stages of evolution. Therefore, a temporal model of resort morphological transformation is proposed. The model ([Figure 3](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_fig3)) is based on the Cretan case, as well as on earlier work by [(Butler, 1980](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib25); [Meyer-Arendt, 1985;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib55) [Smith, 1992b;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib71) [Weaver, 1993;](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib82) [Young, 1983](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib83)). It illustrates morphological changes in the form of use of land, experienced by local fishing villages while going through a continuum of stages. The process starts with an exploration stage, proceeds to an *ad hoc* addition of facilities, and, following the T-shaped type of resort expansion, leads to a stagnated urbanized resort, where there is not enough space for further developing the original one.

**Figure 3. Stages of Morphological Transformation of a Typical Coastal Resort**



### Conclusion

This paper aims to outline the important morphological changes of contemporary coastal resorts by proposing a temporal model of morphological change of resorts of the island of Crete. The goal of the suggested model is to provide an understanding of predictable morphological changes of its coastal areas as the resort undergoes urbanization through tourism-induced development. It shows that evolution processes can be better explained and understood when based on historical data and past research. However, one should consider the findings of this study with the stipulation that the stages presented in the model are the result of lack of physical planning and limited attention to environmental preservation, zoning, and research. Under these circumstances, landowners were free to develop their land as they wished, and many excessive unwanted features and undesirable impacts materialized, necessitating immediate action. However, the *ad hoc* type of tourism development of the past, where private sector actions prevailed over industry and initiated a new stage of growth, will not function in the future. Instead “a more holistic approach is necessary... one that takes into account economic, social and environmental considerations, and integrates the planning/policy regimes of all levels of government” ([Faulkner 2002:284](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557" \l "ref_bib33)).

Notwithstanding the constraint of data availability for the area under concern, it is evident that the most important change taking place in Crete since World War Two has been the development of tourism, which has reinforced urbanization and imposed a new morphology on the coastal landscape. But it is important to consider what lies ahead. In Butler’s model, the end of the cycle is marked by the post-stagnation phase, which may result in decline, if the tourism market continues to wane, or rejuvenation, through attempts to improve the overall morphology of the resort. These stages have not been illustrated in the suggested model because of the obvious difficulties in defining the post-stagnation stage. As a matter of fact, each morphology may differ at this stage, as already illustrated in Butler’s model where the post-stagnation stage comprises a set of five options. For example, different attempts can be considered and undertaken to avoid decline such as the introduction of casinos in Atlantic City (USA), the establishment of Euro Disney in Paris, and the greening of Mallorca (Spain). As far as Cretan coastal resorts are concerned, decline and further negative effects must be avoided by improving their morphology. Future tourism policy should be conceived as a development strategy that, despite using local resources, manages and plans them carefully so that they stay in place for locals, guests, and future generations alike. In doing so, a spatial plan for each Cretan resort must be drawn matched with listed priorities and strategies for future development and the improvement of morphology. This must be achieved by preserving the environment and by respecting their landscapes.

The morphological evolution of resorts is a complex process which cannot be fully analyzed in a short paper. In this respect, it is extremely difficult to make generalized universally accepted models of coastal morphological change since resorts different from the suggested model may exist even in the island of Crete. However, some of the characteristics identified by the model may be recognized in other areas, Mediterranean or not, and the model may become a useful device to test coastal morphological change. Furthermore, significant lessons can be drawn for the negative consequences of coastal resorts’ rapid growth. As [Pearce suggests, “while details do differ, the basic structural features are frequently repeated from resort to resort. Imitation, particularly within countries, may account for some of these similarities but the form of these resorts generally reflects their specialized function” (1987:167)](https://vpn.cut.ac.cy/+CSCO+ch756767633A2F2F6A6A6A2E667076726170727176657270672E70627A++/science/article/pii/S0160738306000557#ref_bib62). Therefore, the suggested model should be tested as regards other coastal resorts in order to evaluate the degree to which it can be used as a generalized description of the morphological evolution of contemporary coastal resorts and to determine if it must be refined.

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