



LEEDS
BECKETT
UNIVERSITY

Citation:

Boukas, N and Ziakas, V (2014) A Chaos Theory Perspective of Destination Crisis and Sustainable Tourism Development in Islands: The Case of Cyprus. *Tourism Planning and Development*, 11 (2). 191 - 209. ISSN 2156-8316 DOI: <https://doi.org/10.1080/21568316.2013.864995>

Link to Leeds Beckett Repository record:

<https://eprints.leedsbeckett.ac.uk/id/eprint/144/>

Document Version:

Article (Updated Version)

The aim of the Leeds Beckett Repository is to provide open access to our research, as required by funder policies and permitted by publishers and copyright law.

The Leeds Beckett repository holds a wide range of publications, each of which has been checked for copyright and the relevant embargo period has been applied by the Research Services team.

We operate on a standard take-down policy. If you are the author or publisher of an output and you would like it removed from the repository, please [contact us](#) and we will investigate on a case-by-case basis.

Each thesis in the repository has been cleared where necessary by the author for third party copyright. If you would like a thesis to be removed from the repository or believe there is an issue with copyright, please contact us on openaccess@leedsbeckett.ac.uk and we will investigate on a case-by-case basis.

A Chaos Theory Perspective of Destination Crisis and Sustainable Tourism Development in Islands: The Case of Cyprus

Nikolaos Boukas, Center for Sustainable Management of Tourism, Sport & Events
(CESMATSE), European University Cyprus

Vassilios Ziakas, International Centre for Research in Events, Tourism & Hospitality (ICRETH),
Leeds Metropolitan University

Abstract

Small island states, due to their size, remoteness and dependence on foreign capital, are often susceptible to various global disruptions and crises. The effects of such crises can be chaotic, seriously damaging their economies and altering their systems. However, in the context of tourism crisis management, linear approaches are predominant overlooking the chaotic characteristics and transformations of the complex tourism system. In response, this research investigates the implications of the economic crisis and the interaction effects of unforeseen events, on Cypriot tourism through a chaos theory perspective. Based on semi-structured interviews, archival document analysis and a pertinent literature review, findings indicate that the evolution of Cyprus tourism was not a linear process, but instead iterative, characterised by interactions of several endogenous and exogenous events that have shaped its systemic transformation. The research reveals the lack of comprehensive policy responses to crises that would enable the sustainable tourism development of Cyprus. The paper concludes that it is imperative for small island states to understand holistically the interrelated dimensions of crises and therefore mitigate their detrimental consequences. To this end, tourism policy needs to realise that crises and sustainability are not linear processes but evolving systemic configurations that necessitate the preparedness of tourism policy-makers and stakeholders to anticipate change and swiftly respond.

Keywords: Chaos Theory; Small Island States; Sustainability; Crisis Management; Cyprus

Introduction

How does order arise in the globalised environment and the interconnected fabric of particular locales? The effects of this interaction may create tensions and thus, unintended events, disruptions, or crises are common phenomena that lead to the world's economic, political and cultural restructuring (Brecher, Costello and Smith, 2000; Dicken, 2007; Jessop, 2000; Stiglitz, 2003). The on-going global economic crisis is a representative example of this systemic transformation in the world order and its implications for local fabrics, which vary widely contingent upon their spatial characteristics (i.e. urban, rural, coastal areas, etc.). The systemic restructuring can be viewed as an evolving chaotic ordering from a chaos theory perspective. This means that the parts of a system and their interconnections are rearranged until a new order is restored (Lewin, 1999; Waldrop, 1992).

Chaotic transformations are frequent occasions within tourism systems as they are interdependent with a plethora of forces that impact upon one another (Faulkner, 2000). Globalisation processes have intensified competition among destinations to attract tourists (Meethan, 2001). This is even more evident in the case of small island destinations. As has been shown, the impact of economic crises is catalytic on islands' tourism development, since they exploit their resources and capitalise on tourism as a means of economic growth and overall prosperity (Briguglio and Briguglio, 1996; McElroy, 2003; Sharpley, 2012; Wilkinson, 1989). Nonetheless, the overdependence of islands on tourism (Bastin, 1988; Niles and Baldacchio, 2011) may cause adverse impacts. For instance, islands are usually over-reliant on foreign investment and the underlying global capitalist system that tends to control decision-making regarding their tourism development (Butler, 2008; Lewis-Cameron and Roberts, 2010). As

such, tourism development on islands raises issues of sustainability on the socioeconomic, cultural and environmental fabric of host destinations highlighting their susceptibility to the economic forces at a global level.

Cyprus, as a small island state, exhibits all the above characteristics. Having invested in mass tourism, Cyprus faces problems of decreased competitiveness, lack of service quality in the hospitality sector, monothematic development (coastal areas), and decline of tourist flows (Archontides, 2007; Boukas and Ziakas, 2013). As the effects of the global economic crisis have dramatically deteriorated the conditions on the island, tourism policy-makers and stakeholders strive to find solutions for their recovery. Yet, little effort has been put by Cypriot stakeholders into holistically understanding the interrelated dimensions of the crisis and therefore, enable the effective mitigation of its detrimental consequences (Boukas and Ziakas, 2013).

To do so, this paper posits that a chaos theory perspective can help Cyprus to appreciate the systemic transformation of its tourism sector as a result of interacting global and local forces and thus, undertake appropriate destination management initiatives which contribute to the sustainable development of the island. Such an endeavour is currently constrained due to the lack of a comprehensive policy framework capable of incorporating the chaos perspective and its implications for sustainable destination management. Consequently, current policies implement measures responding to the crisis, which presuppose that a crisis is a linear event. Moreover, these policies recommend several controlled strategies (i.e., targeting local tourists, reinforcing foreign investments, diversifying the tourism product, etc.) (Boukas and Ziakas, 2013), whose effectiveness could be questionable (crises are uncontrollable by their nature). Therefore, this paper argues that Cyprus needs to initiate a sustainable policy framework enabling the rapid recovery of the island from the existing grave situation and boosting its competitiveness by

valorising its sustainability. As such, this paper aims to investigate the dimensions of the economic crisis along with the interaction effects of unforeseen events on Cypriot tourism through a chaos theory perspective and draw implications for formulating a comprehensive sustainable tourism development policy.

Tourism Crises and Implications for Island Destinations

The exposure of the tourism system to global forces has direct impacts on the production processes/consumption patterns of the tourism product-service mix (Ioannides and Debbage, 1997). The overdependence of many destinations' tourism product on global markets makes it highly sensitive to global economic crises and their negative effects (Beirman, 2003), while globalisation processes may create risks for tourist enterprises (in political-economic-social-technical levels) (Ritchie, 2004). Consequently, the overdependence of islands on foreign investments and tourism makes them susceptible to external global forces.

This actuality dictates the need for island stakeholders and tourism authorities to find ways to overcome problems that hinder tourism development. However, the existence of several stakeholders in tourism with obvious interrelations (and common or antithetical interests), may be a burden for crisis management, where quick decisions are imperative (Henderson and Ng, 2004). Hence, any crisis management plan ought to represent all the key players and their contribution to the tourism system, something which is often not effectively coordinated.

Economic crises can be easily spread to various places around the globe (Tribe, 2011). Since tourism is highly dependent on foreign investments/travellers, it demands a comprehensive

management plan for effectively coping with economic crises. Indeed, tourism necessitates the readiness of both tourism policy-makers and suppliers to deal with crises, disasters and fluctuations of demands (Miller and Ritchie, 2003). Prideaux (2009) proposes a crisis management framework that incorporates a linear sequence of stages: (1) Pre-crisis stage, (2) Crisis stage, (3) Crisis recovery stage. Likewise, Ritchie (2004) suggests a three-stage framework: (1) Proactive scanning and planning, (2) Implementation of strategies, (3) Evaluation and refinement of strategies.

The successful crisis management both for organisational and tourism situations, presupposes the consideration of various variables. Evans and Elphick (2005) suggest that tourism/travel industries need to focus on the development of contingency plans, the introduction of decisional and informational responsibilities, and the preparation of the ground where flexible decisions may be taken as reactive strategies, without however rushing in decision-making. As they state, any plan should include progressive processes and practices learnt once the immediate crisis is over. According to Miller and Ritchie (2003), the ways that crises are handled provide useful lessons for destinations, in order for more effective crisis management planning to be developed in future crises.

Additionally, in order to develop tourism crisis management plans, two main variables need to be considered. Firstly, the whole context of a destination's tourism activity should be examined as a non-linear, non-deterministic operating system, where complex network relationships among several elements occur in a dynamic manner, characterised by constant changes and stimuli (McKercher, 1999). Hence, the tourism system needs to be viewed through the prism and principles encapsulated by chaos and complexity theories. Secondly, crises are usually non-static events, which tend to be unpredictable in their manifestation and progress

(Speakman and Sharpley, 2012). As Speakman and Sharpley (2012) argue, contemporary crisis management models are characterised by certain boundaries that question their effectiveness: (a) the unpredictability of each crisis, (b) the complexity of crises and the complex system of relationships among tourism stakeholders, (c) the uniqueness of each crisis which dictates unique approaches, (d) the cultural context that the crisis occurs within, and (e) the lack of model relevance for each small tourist enterprise that composes the complex tourism system. Consequently, crises are actually irregular occurrences affecting the tourism system and its stakeholders in different ways in each period of time. Therefore, to enable the effectiveness of any tourism crisis management plan, it is essential to incorporate the tenets of chaos theory in the scope of tourism planning.

The Chaos Theory Perspective

Undoubtedly, the tourism system has characteristics that make it complex. The explanations offered by existing crisis management models are based on the generalised assumption of linearity. Indeed, the linearity that many models propose through a series of progressive stages (pre/during/post-crisis) (Faulkner 2001; Prideaux, 2009; Ritchie, 2004) can be in several cases, insufficient to swiftly deal with various kinds of crises. For instance, Miller and Ritchie (2003) trying to apply Faulkner's proposed framework of tourism disasters on the foot and mouth outbreak in UK, concluded that the framework, despite its apparent usefulness, had limited efficiency because not all crises/disasters are similar. As such, chaos theory principles need to be

adopted to fully understand the tourism system and effectively manage the environment wherein tourism functions as a non-linear sector.

Chaos theory provides clarification of unanticipated and unforeseen consequences, and centralises to the unfeasibility of long-term forecasts (Miller, Stevenson and Airey, 2009). In contrast to linear systems, chaotic systems are subject to forces of stability and forces of instability, which push them towards chaos (Thiétart and Forgues, 1995). Accordingly, chaos theory develops the systems view to the behaviour of large, complex, non-linear systems that are characterised by social and technical (highly dynamic and disproportionate) interactions among elements and actors (Sellnow, Seeger and Ulmer, 2002). Additionally, chaos theory focuses on the tendency of initially small changes eventually creating large accumulative -often unpredictable- effects which accelerate fundamental alterations in the system (Faulkner and Valerio, 1995; Thiétart and Forgues, 1995). Finally, according to Russell (2006), in contrast to traditional theories, externalities are considered normal and important features for the shaping of systems.

Chaos theory suggests that everything in the system exists in an liquid state, any type of a stable situation is actually illusionary, and several catalysts are derived to dislocate the system from its current condition, thus creating disadvantageous (negative catalyst) or advantageous (positive catalyst) results (Russell, 2006), and therefore rejects prediction. Nevertheless, the chaotic approach pursues order and predictability, even if these occur without conventional causal and deterministic patterns (Hayles, 1990). As such, chaos theory seeks to describe the behaviour of non-linear systems at a higher level of complexity and explain, through a series of concepts, both the chaotic and organised elements of complex systems (Sellnow et al., 2002). According to Edgar and Nisbet (1996, p.7):

‘There is, surprisingly, a certain degree of order within a chaotic system. This paradox derives from the fact that systems displaying chaotic characteristics are operating somewhere between stability and instability and within certain boundaries’.

The authors continue that it is essential for organisations to function in this state of bounded instability in order to be capable of changing, evolving and progressing. In this way chaos is the ‘order without predictability’.

Based on the above non-deterministic logic, chaos theory is comprised of several principles. According to Thiétart and Forgues (1995), organisations are likely to exhibit several qualitative properties of chaotic systems. The authors summarise these properties into six propositions: (a) due to the existence of the counteracting forces organisations are potentially chaotic; (b) the path from organisational stability to chaos follows a distinct process of change; (c) small changes can have unpredictable long-term results for the organisations; (d) from chaos, new stabilities that are assimilated to organisational configurations (strange attractors) arise; (e) similar patterns should be found at different scales, and (6) during only one organisational life span or between two different organisations, similar actions should never cause the same outcome.

Moreover, to understand the turbulent relationships/changes in the tourism system during crises, chaos theory puts forward a number of theoretical concepts: ‘butterfly effect’, ‘lock-in-effect’, ‘edge of chaos’, ‘bifurcation’, ‘self-organisation’ and ‘strange attractors’ (Duffy, 2000;

Faulkner, 2000; McKercher, 1999; Russell, 2006; Speakman and Sharpley, 2012; Young, 1991; Zahra and Ryan, 2007). Firstly, the ‘butterfly effect’ (Sensitive Dependence on Initial Conditions – SDIC) refers to the fact that minor insignificant changes in early stages of development may lead to a chain reaction which climaxes to the production of larger outcomes; these can dramatically shift the structure of the system (Faulkner, 2000; McKercher, 1999). Russell (2006) argues that small changes may suddenly occur and influence catastrophically our environment in personal/corporate/national/international levels. Additionally, the impact of these small changes on the environment and the insufficiency of the initial conditions precise measurement complicate the situation. Thus, the lack of clearly measuring the initial conditions and understanding their impact, along with the associated reduction in predictability, challenge accurate/confident forecasts regarding the long-term systems’ behaviour (Sellnow et al., 2002). In tourism, due to the ‘butterfly effect’, single events may bring chain changes to destinations. These changes could have positive (i.e., a unique tour itinerary appeals to a significant emerging target market) (Faulkner, 2000) or negative (i.e., a crisis/disaster leads to a major shift to the evolution in tourism) (Faulkner and Valerio, 1995) results.

‘Lock-in-effect’ denotes that in chaotic systems, certain inherited innovations in the past may have a lasting effect, even though these occurred changes in the conditions may have made the initial response redundant (McKercher, 1999; Russell and Faulkner, 2004). As such, the ‘lock-in effect’ justifies why certain accidents of the past are still used today (McKercher, 1999). In tourism, a ‘lock-in effect’ could occur in several cases. For instance, the fact that many tourist enterprises in a destination are still locating at a once advantageous position (e.g., near a train station), even though this position is not advantageous anymore (train has been majorly replaced by air transportation) is a representative example (Faulkner and Valerio, 1995). Similarly, the

case where some hotels are still located in areas that once were resorts but through the years have become saturated is also another example of this effect.

The 'edge of chaos' is related to a condition of extreme readiness for radical change (Russell, 2006). According to Speakman and Sharpley (2012), even if a system has enjoyed a relative state of stability or equilibrium for many years, this equilibrium is fragile and may be unexpectedly disrupted. Hence, they conclude that the 'butterfly effect' is relevant, because a presumable minor event may lead to larger crises. Similarly, Kauffman (1995) argues that life at its best exists at the edge of chaos where the whole environment is somewhere between order and surprise. Furthermore, Russell (2006) adds that when critical instability has been reached, there is a bifurcation point that leads to dramatic changes. It is also critical that the more flexible an organisation is to change and adapt, the more it is possible to overcome the crisis. As Faulkner (2000, p. 10) states: 'Each phase shift may be associated with changes that precipitate the extinction of unsustainable or 'unfit' enterprises, while creating new opportunities for those enterprises capable of adapting'. As such, tourist enterprises need to comprehend that there are no stable situations and be ready to cope with changes.

'Bifurcation' is closely related to the 'edge of chaos' and refers to the situation where the system overwhelms a critical point of the space phase and moves in a new phase (Baggio and Sainaghi, 2011). Through bifurcation, the values of a system's parameters can experience significant unexpected change. As Paraskevas (2006) argues, 'bifurcation' may either lead to a system's structure break down, resulting to the end of organisation, or break through to one of various new states of order. Sellnow et al. (2002) suggest that all complex systems, even those that demonstrate relative stability, have the potential for bifurcation, while systems with high condition of exchanges and links with their environments can be characterised by higher levels

of instability and sporadic bifurcation. Through ‘bifurcation’, the system enters in a new situation characterised by chaos and disequilibrium, a state where cosmology events (occurred when the crisis situation generates an overwhelming sensation on the part of observers) that exceed all until now learned knowledge and response capabilities, happen (Speakman and Sharpley, 2012; Weick and Sutcliffe, 2001).

‘Self-organisation’ is related to the new levels of form, organisation and complexity often arising from interchanges between organisms and their context (Bloom, 2000). Hence, ‘self-organisation’ is the consequence of bifurcation where order re-emerges out of a random and chaotic phase (Sellnow et al., 2002). Baggio and Sainaghi (2011) argue that through ‘self-organisation’ the system becomes more ‘suitable’ to deal with external or internal obstacles because of more optimised available resources. Paraskevas (2006) adds that ‘self-organisation’ is actually the spontaneous reallocation of energy that occurs in response to the perceptions of each system’s components (agents) rather than through some principal controlling mechanism. Paraskevas concludes that if the process of ‘self-organisation’ will be successful, the crisis enters a resolution stage and the organisation returns to ‘business as usual’. Yet, as Speakman and Sharpley (2012) argue, ‘self-organisation’ presupposes that a return to normality is neither feasible nor necessarily desired.

Further to ‘self-organisation’, Speakman and Sharpley (2012) also refer to the concept of ‘strange-attractor’ where order can be encouraged out of chaos. As Russell (2006, p. 112) argues:

‘A new pattern of movement emerges in sympathy with the direction and vigour of the supplementary force. The pendulum has been strangely attracted to this

new behaviour. The new behaviour is the strange attractor – strange, because it is a departure from the norms for pendulums, one that would be difficult to duplicate’.

‘Strange attractors’ could have the form of values, codes, contradicting pressures and needs or oppositional paradoxes to which a social system logically and repetitively returns (Sellnow et al., 2002). Therefore, despite the turbulences within the chaotic environments, order and pattern prevail.

Chaos theory provides insights for understanding the complex chaotic systems in tourism and their boundaries in order to make short-term decisions. This is crucial for tourism since several crises make it susceptible to changes. Therefore, even if a system operates in complexity, chaos theory provides this information that examines the evolution of industries and the multifaceted interactions among tourist stakeholders. Moreover, the interrelated actors’ relationships of the chaotic tourism system need to be understood, in regards to establishing policy goals for a destination’s sustainable development. As Farsari and Prastacos (2003) suggest, the lack of participation of many stakeholders in policy-making and tourism planning leads to the inexistent/insufficient integrated approach to sustainable development. This failure of addressing issues which are perceived as significant in sustainable tourism, can lead to the lack of a coherent structured approach to policy planning and implementation. In this respect, only by understanding the destination’s environmental conditions and each stakeholder’s contribution to the policy development, sustainable policies can be proposed and successfully implemented.

Methodology

This study builds on previous research that examined the impacts of the global economic crisis on Cypriot tourism and the effectiveness of responding policy measures (Boukas and Ziakas, 2013). In line with previous research, a qualitative and interpretive approach (Creswell, 2006; Denzin and Lincoln, 2005) was employed in this study, extending the scope of investigation to the systemic transformation of Cypriot tourism as a result of interacting global-local forces; these require the implementation of appropriate destination management strategies in order to contribute to the sustainable development of Cyprus. Moreover, this approach was used for examining the policy measures of Cypriot authorities regarding sustainable tourism development, and whether or not, this policy formulation realises and estimates several crucial, for the country, occurrences.

Data was collected from multiple sources of evidence in order to increase the validity/reliability of findings (Yin, 2009). Firstly, a literature review was undertaken on Cyprus tourism development and its evolution through time. The findings were compiled into one document and served as a basis for the subsequent empirical analysis. The empirical analysis is based on data collected through official documents and reports about Cyprus tourism as well as semi-structured interviews conducted with tourism policy-makers and representatives of tourism entrepreneurs/professionals (Table 1). Three interviews were conducted with tourism policy-makers of two organisations (Cyprus Tourism Organisation–CTO and Cyprus Investment Promotion Agency) in their offices and lasted 40-60 minutes. Government representatives from

the Ministry of Commerce and Tourism were not interviewed to avoid political biases in evaluating the efficiency of policy measures, and particularly, because strategic plans are formulated and implemented by the CTO. Five interviews were conducted with representatives of hotel managers, tour agents, and tourism professionals to understand the impact of several events on Cyprus tourism and responding policies on the suppliers' side. These interviews also lasted 40-60 minutes and were conducted in the offices of the interviewees.

Table 1

All interviews were tape-recorded and transcribed verbatim in the Greek language. Next, transcripts were translated in English and analysed manually. Data was analysed iteratively (Miles and Huberman, 1994) adopting a constant comparison method (Glaser and Strauss, 1967) aimed to explore inductively emerging themes and reveal their relationships. To fully understand the Cypriot tourism system, its characteristics and transformations, a holistic examination of its evolution was applied. For this reason, the analysis encompasses the beginning of tourism industry in the new-born island state (1960s) until today. From this standpoint, the fluctuations or disruptions in the Cypriot tourism system can be comprehensively understood within their continuously changing context. Therefore, the analysis adopts an evolutionary examination of Cyprus tourism, seeking to identify particular milestones that affected its status and qualities. The analysis indicated the following thematic areas: i) the evolution and state of tourism in Cyprus from its beginning until 2001, ii) the evolution of tourism in Cyprus from a chaotic angle, and iii) the chaotic state of Cyprus tourism after 2001. Data in each thematic area was checked

for content and accuracy by comparing its meaning and going back to the previous research evidence (Boukas and Ziakas, 2013). This helped to identify patterns and contradictions in the data, which enhanced understanding of the crisis in the Cypriot tourism system. Finally, to establish trustworthiness of the emerging themes (Yin, 2009), a summary of the findings was presented to two independent researchers. Feedback received was in agreement with the core themes presented in the results section.

The evolution and state of tourism in Cyprus

The development of tourism in Cyprus can be delineated in three chronological stages (Table 2).

Table 2

The first stage started after the independence of Cyprus from Great Britain in the 1960s and lasted until 1974 when the Turkish invasion with the illegal occupation of the island's north interrupted its tourism development. The second stage of Cypriot tourism started in 1975, when the island witnessed a dramatic growth of its tourism industry based on mass tourism. The third stage presumably started in 2001 when arrivals in the island reached their peak but since then have been steadily declining. This downfall led Cypriot tourism policy-makers to the realisation that mass tourism is not a panacea for the island and that the re-planning of the tourism policy towards sustainable forms of tourism is vital. Thus, the long-term strategic tourism plan of

Cyprus has been partially updated in order to encompass strategies to eliminate the Cypriot tourism problems such as seasonality, monothematic development in coastal destinations only, lack of quality, dependence on foreign capital, and non-diversification of the tourism product (Archontides, 2007; Boukas and Ziakas, 2013; Sharpley, 2002); efforts for the development of marine and sport tourism, creation of convention centres, improvement of hospitality operations, and golf tourism were included (Archontides, 2007; Boukas and Ziakas, Forthcoming; Boukas, Boustras and Sinka, 2012). Yet, although the global changes affect the status of Cypriot tourism, its already saturated tourism product has essentially remained the same, while any effort for dealing with the critical issues of Cyprus tourism has been based on ad-hoc decisions/measures without analysing the factors, relationships, and multifaceted implications that impact upon another (Boukas and Ziakas, 2013). As such, the chaotic environment in which the tourism system operates is characterised by inherent problems that are rooted in the diachronic structural characteristics of the island's social/economic/political system.

The evolution of tourism in Cyprus from a chaotic angle

By studying the evolution of Cyprus tourism, someone can easily assume that there is linearity.

This was also mentioned in the interviews:

‘Tourism in Cyprus followed the product life-cycle. It slowly began in 1960s, it was suddenly interrupted in 1974 with the invasion [Turkish] [...] and in the decades of 1980s-1990s it started to take off until 2001. Since then a decreasing

pace followed, where we started considering what we need to do for this product'

(Respondent 1).

Despite this presumably linear course, the environment in which tourism in Cyprus operates is much more complex. Arguably, Cypriot tourism has been developed within a context where serious social, political and economic pressures, demands, and changes have taken place. These forces have created severe problems, which due to the apparent stability of the sector for almost 30 years, were partially confronted by tourism policy.

After its independence, Cyprus discovered that tourism could provide substantial revenues, thereby contributing positively to the poor economy of the new-born state. Thus, it invested in tourism according to the standards of that time: mass tourism in the coastal destinations of its north, which are characterised by privileged scenery (Gillmor, 1989). Mass tourism exploited the resources of the island and provided economic benefits to the developing state (Ioannides, 1992). However, this period was rapidly interrupted by the Turkish invasion in 1974. This trigger event caused shocking effects ('butterfly effect') and brought the island to the 'edge of chaos'. Cyprus lost almost the 37% of its land and suffered from political instability, the collapse of economy and subsequent social problems, internal migration, and the loss of many infrastructural elements (Witt, 1991). Tourism as a highly sensitive sector also suffered. Characteristically, 65% of the total bed capacity and 96% of beds under construction were located on the occupied part and therefore, got lost (Saveriades, 2000).

Because of the invasion, the overall Cypriot tourism plan started being reconsidered. Indeed, the 'edge of chaos' led to 'bifurcation' due to the invasion where the environment

needed to radically and unexpectedly change and adjust to the new conditions. Accordingly, a 'self-organisation' of the system took place with a new order that re-emerged out of the chaotic state. Tourism policy-makers used the same remedy as before the crisis and invested in mass tourism on the coastal areas of the free part of the island (Arcontides, 2001). Thus, coastal tourism and exploitation of the island's natural resources acted as the 'strange attractors' which enabled the new order out of chaos. Either a 'lock-in-effect' or not, this model, that used to work before 1974, also worked after the invasion, and in almost ten years Cypriot tourism fully recovered (Pasiardis, 1998).

Evidently, the positive economic impacts of mass tourism overshadowed its negative impacts. However, since 2001, tourism steadily decreases and several problems are now more visible. As indicated:

'Until 2001, tourism had a steadily increasing course even if we knew that there were many-many problems. Now, Cyprus faces problems of competitiveness such as our old tourism product, the many competitors that now exist, and the lack of infrastructure that diminishes our image. All these problems had been accumulated all these years, but we didn't want to see them' (Respondent 5).

In this third stage, a series of interacting global and local forces have affected tourism underlining the urgency to understand the systematic transformation of the tourism sector and undertake appropriate destination management initiatives for the island's sustainable development. Yet, any effort by tourism policy-makers to deal with the situation is characterised

by linearity and has not fulfilled their purpose. The incorporation of the chaos theory perspective for understanding the multidimensional events that have hindered the island during the last decade is imperative, in order to form a holistic policy framework and enable the island's sustainable development.

The chaotic state of Cyprus tourism after 2001

The third stage in the evolution of Cyprus tourism is characterised by continuous change and important events that affected its course and altered the whole tourism system. These occurrences are classified into endogenous and exogenous events.

Endogenous events

Opening of roadblocks

The first important event for Cyprus occurred on the 23rd April 2003, when after 29 years of absolute division between the Greek-Cypriot and Turkish-Cypriot parts of Cyprus, the two communities had the chance for the first time to cross to the other side, through designated checkpoints (Kyriakou and Kaya, 2011). The partial abolishment of the 1974 ban on crossing between the northern and southern parts, which actually prohibited the two sides to have any form of interaction, brought a new political change affecting the state rhetoric of Greek Cypriot citizens (Demetriou, 2007).

This opening of the checkpoints at the so-called 'green-line' affected Cypriot tourism. The system which had enjoyed a stage of stability for almost 30 years was disrupted with this event. This apparent occurrence acted as a trigger event (in line with the 'butterfly effect') and created a set of changes (transformation) in many aspects. Although, not a recognised country, the North part of Cyprus does have a tourism industry and the opening of checkpoints brought more competition by facilitating the transportation of visitors from South to North. The competition Cyprus faces during the last years also comes from the occupied part which however, is not able to threaten Cyprus tourism yet (CTO, 2006). It is a precursor though, for what may happen in the future.

Consequently, Cyprus has now a new competitor, which could be proved very powerful since it offers almost the same product in competitive prices. Indeed, this concerns the tourism stakeholders of the island. As stated:

'The occupied part ended up to be our competitor [...] it is worrying that many passengers of low-cost airlines that land on Larnaca's airport go to the occupied areas' (Respondent 4).

CTO (2006) claims that tourists who come to Cyprus visiting the occupied areas are usually one-day visitors and rarely choose to stay overnight. Nonetheless, this is something that may change in the future and tourism authorities should be aware of it.

Accession to the European Union (EU)

Another event that constituted a turning point for Cyprus is its accession to the EU on the 1st of May 2004. This decision aimed at incorporating the island into the European family, thereby escaping its geographically/politically remote, lonely, and unprotected status. The easier transportation of EU citizens had a tremendous impact on the island since its major tourist markets are from Northern Europe. Cyprus not only had the opportunity to attract more travellers from the existing markets but also to enter new markets. As stated:

‘Our primary market is English and we want to keep it [...] after the accession in the EU, we started targeting new markets such as the countries of Eastern Europe’
(Respondent 3).

Another impact is the liberalisation of foreign investment on the island. As mentioned: ‘Foreign investors now have the opportunity to access the EU market and the legal system, which are now aligned with the EU system, therefore these investments are made easier’ (Respondent 6). On top of these impacts is the entrance of Cyprus to the Economic-Monetary Union on the 1st of January 2008 and the adoption of the Euro, which facilitated this liberalisation further.

Conversely, the ‘bifurcation’ that both the accession in the EU and the Eurozone brought to the tourism system, also had negative aspects:

‘With the Euro, tourists can now compare easier the differences in prices. With the Cypriot pound a tourist would probably buy a product easier’ (Respondent 1).

and: ‘The EU brought a strict legal framework that we need to comply with’ (Respondent 3).

According to Nugent (2007), Cypriot economic growth was faster than average EU growth before the island’s accession and hence, spill-over from the EU economy probably had a dampening result. Furthermore, the strict EU regulatory policies/practices could endanger the services sector of the island. Hence, Cyprus tourism needs to follow EU policy rules even if tourism stakeholders do not consider them beneficial for the island’s competitiveness.

Similarly, the liberalisation of workforce among the EU members caused ‘bifurcation’ that had an impact on the tourism product quality. As stated:

‘Tourism practitioners in Cyprus only see their own interest and hire EU employees that cannot even speak Greek. What type of quality can you offer if you cannot communicate with tourists? Tourists come to Cyprus and they want to interact or ask information from the personnel. This cannot be provided because of the untrained and inexpensive labour [...] it builds a negative image for Cyprus’ (Respondent 4).

The explosion in Mari

Another trigger event was the tragic incident of the 11th of July 2011. Specifically, an enormous explosion of 98 containers filled with munitions that were confiscated from a ship sailing from

Iran to Syria, and had been stored at the naval base in Mari (next to Cyprus' largest electricity plant) was blown up killing 13 people and causing serious energy-supply problems for the whole country for several months. The 'bifurcation' that this event caused was spread on all the sectors of the island, including tourism. During that period the whole system in Cyprus was irrational, 'cosmology' was evident, while despair was drawn in many people's eyes. Although the tourism industry per se was not influenced (Respondent 8), the atmosphere on the whole island was heavy (Respondent 1).

There are many in Cyprus claiming that the effects of Mari tragedy that brought the island into chaos, and altered the order in the system, are still evident. They also associate this event with the 2012–2013 Cypriot financial crisis, which forced Cyprus to request a bailout from EU and enter in a support mechanism in March 2013, hence being once more at the 'edge of chaos', passing again into 'bifurcation'. Consequently, 'self-organisation' has not been achieved and the future of Cypriot tourism is quite uncertain.

Exogenous events

The new era after 9/11

The first exogenous event that affected Cyprus was the 11th of September 2001 incident. As stated:

'The terrorism attack in New York and its consequences in travel and tourism worldwide, brought into the surface, the crucial structural problems that we are now

dealing with, as there is a constant decrease of tourism revenues since then’
(Respondent 5).

Indeed, this event is associated with the decrease of arrivals and tourism revenues the following years (Table 3). The ‘butterfly effect’ of this occurrence brought into the surface the vulnerable position of Cyprus in the Middle-East and the inherent problems of Cyprus tourism, thus intensifying the urgency to eventually redress them.

Table 3

Lehman Brothers and the economic crisis of Cyprus

The second major event that affected the tourism system was the collapse of Lehman Brothers bank on 15th September 2008. The collapse of Lehman Brothers was a ‘butterfly effect’ that ‘hit’ Cyprus economy. As mentioned:

‘The global economic crisis arrived at other destinations on 2008 and the beginning of 2009. In Cyprus we had to deal with it a bit later, on the second semester of 2009’ (Respondent 2).

The crisis did not actually engender new problems in Cypriot tourism but it intensified the already existing ones:

‘The crisis ‘rang the bell’ that we need to take serious measures to deal with our own pre-existing problems. The economic crisis acted as an indicator that we need to do something’ (Respondent 5)

During the same time, the Arab Spring took place in Egypt. As stated almost by all respondents, this was an incident that indirectly influenced Cypriot tourism. For instance:

‘The events of Egypt and Tunisia had the most important social turbulences and a direct negative impact on their tourism activity, and they lost millions of tourists. Some of them visited Cyprus’ (Respondent 7).

As such, the Arab Spring brought a number of tourists in Cyprus and therefore, mitigated the negative consequences of the 2008 crisis. However, a series of mistakes, miscalculations and poor decisions from the banking sector and the over-exposure of Cyprus on the problematic Greek economy, led to the 2012–2013 Cypriot financial crisis and brought the island to the most crucial ‘edge of chaos’ after 1974 with many unpredictable types of ‘bifurcation’ and uncertainty for years to come.

Even though, those endogenous and exogenous events that acted as triggers towards the ‘edge of chaos’, happened in a presumable linear form in terms of chronological order, their impacts were spread throughout the tourism system in a chaotic order and created multiple consequences to various stakeholders. The Cypriot government is in the process of seeking to find those ‘strange attractors’ in order for the tourism industry to escape from the loop that the chaotic order dictates. In response to the numerous ‘bifurcations’, tourism policy-makers strive to put order to chaos and facilitate the ‘self-organisation’ of the tourism system.

Policy strategies for Cypriot tourism

All the events necessitated the effective decision-making both from policy-makers and stakeholders to deal with their consequences. The constant decrease in tourist arrivals illustrates that the mass tourism product is now obsolete and non-competitive (Respondent 1). Nonetheless, no one seriously addresses the situation, while investments are still based on the mass tourism model of development (‘lock-in-effect’).

The 2008 crisis however, alerted tourism authorities about the imminent chaotic situation. During that period tourism policy-makers did take measures. As indicated:

‘We knew that even before the crisis, Cyprus tourism was already for years in a negative orbit, in contrast to the increasing pace of global tourism. When the crisis occurred we underlined the urgency to take some action in order to protect the sensitive to global changes, sector of tourism’ (Respondent 7).

The globalised environment in which tourism operates and the high dependence of Cyprus tourism on international travellers (CTO, 2013) created a pressing situation that necessitated the introduction of measures for dealing with the crisis' 'bifurcation'. These emphasised mostly three areas: (a) the pause by local authorities from receiving the taxation fees charged on the accommodation overnights/restaurant services for two years, (b) the pause of the government share from the airport fees for reducing the ticket prices, and (c) the introduction of a social tourism plan targeting domestic tourists (Respondents 1 and 2). The effectiveness of these measures is questionable even though respondents indicated that they did help. Both in terms of arrivals and revenues, 2009-2010 were considered as 'not-so-good' years. Nonetheless, figures indicate an increase of tourist arrivals the next two years (Table 3), but the Arab Spring helped Cyprus towards this temporary recovery.

Crises are unpredictable and require rapid reactions. In Cyprus, the policy handling of the Mari crisis was noteworthy. Indeed, there was an immediate response by the government not to allow electricity cuts in the tourist areas of the island (a measure needed in order not to overuse the remaining power sources) and the presumably non-interruption of tourism activity on the island:

'[...] tour operators communicated with us the next day and asked to reassure them that the comforts of their customers that had planned to visit Cyprus during that period, would not be altered, in regards to electricity provision. Otherwise, they would take these tourists to other destinations. We contacted the tourism authorities

and after urgent meetings, the same night the Minister of Commerce and Tourism gave publicly the assurance that there will be no interruption in tourist areas' (Respondent 7).

The same respondent argued that if rapid decisions were not taken, there would have been a snowball effect of cancellations by tour operators that would have an impact on the image of the state too. This underlines the ability of tourism sector to recognise the 'bifurcation' stage and act accordingly (Speakman and Sharpley, 2012).

Yet, although the informal and formal organisation that emerged from the shared management of the energy crisis (Abboud et al., 2012) confronted the event itself, it did not confront its long-term consequences. The aforementioned measures were rather short-term reactions on the long-lasting problems of the Cypriot tourism product (Boukas and Ziakas, 2013). As such, the problems of Cyprus tourism remain the same. According to a respondent:

'Even though there is a policy framework that underlines the need towards sustainable development, there are many setbacks. Among the reasons that this policy is not implemented are bureaucracy, the delay on many projects, the involvement of many stakeholders from the private and public sectors in decision-making, and the unattractive environment that these issues project to investors' (Respondent 8).

Further, while there is cooperation between government and tourism practitioners, there are times that the second face many problems regarding project implementation due to bureaucracy. This reduces credibility for investors and valuable time for tactical implementation is lost (Respondent 7).

Almost all the respondents emphasised the need for tourism policy to turn towards sustainable practices so as to resolve the problems that beset Cyprus. Economic crises such as the 2008 global one and the subsequent economic recession necessitate the adaptation of a sustainable policy framework that would facilitate island tourism to reshape its order out of the chaos. Although Cypriot tourism policy recognises the importance of heading towards sustainability, this is not happening, while the on-going crisis that has dislocated many of the system's components exacerbates this chaotic state.

The key task here is to be prepared to recognise the 'bifurcation' stage and react accordingly (Speakman and Sharpley, 2012). The intense competition during economic crises can harm many small and large tourist companies (Henderson, 2007; Josephides, 1993). Thus, policies need to be rapidly adopted, in order to minimise cost and/or ease damages. This requires the introduction of various recovery strategies such as price differentiations in order to obtain a more solid competitive advantage, quality enhancement and sales improvement, efficient use of advertising media, and application of public relations tactics. These strategies can act as 'strange attractors' (Sellnow et al., 2002) that would put the system back to order.

Indeed, public relations could act as a 'strange attractor'. According to Fall (2004), public relations is a powerful tool for the revival of the tourism sector, that as opposed to 'hard-sell' advertisements, can give to future travellers a feeling of connectedness with a destination in the

post-crisis period. Fall, suggests that the integration of softer overtones of individual values for the important publics in targeted messages, and the observation and understanding of travellers' behaviours/tendencies can lead to effective communication. This is also important for economic crises because tourists may easily travel to competitive destinations.

The question arising is what can be done now? Even though a comprehensive policy or a crisis management plan is not implemented in Cyprus, this chaotic system still survives. The global economic crisis followed Mari's crisis, and acted as 'bifurcation' leading to the recent economic crisis (March, 2013). The global crisis also necessitated the search for measures that will put the system back to order though. As such, it is of great importance for tourism policy-makers to find the means that can facilitate 'self-organisation' by searching for 'strange attractors' (Paraskevas, 2006; Sellnow et al., 2002). One of these 'strange attractors' could be the pursuit of the Russian market which as stated, represents a vital segment for quality tourism (of higher education, of diverse interests, and 'big spender') (Respondent 2 and 3).

Additionally, another 'strange attractor' could be the exploitation of the Larnaca/Paphos airports, which under the appropriate management (i.e., incentives) can attract flights during the whole year (and not only during summer), hence enabling, the potential for winter tourism development. For instance, the recent decision of Ryanair to have flights to/from Paphos airport during the winter (Paphospress.com, 2013) creates a unique opportunity for product diversification and constitutes a significant 'strange attractor' that would help to the speedy recovery of Cypriot tourism.

Finally, the improved communication schemes among stakeholders in the decision-making process, especially regarding crisis management issues, could be another 'strange attractor'. As

Jóhannesson and Huijbens (2009) argue, policy-making needs to be based on the sustained involvement with the tourism resources in all their complexities and mention that the most important technique to overcome crises is to link all the related actors to destination planning and future development. As such, tourism policy should motivate stakeholders to reach an agreement through negotiating trade-offs for the efficient sharing of tourism benefits that will satisfy environmental, social, and economic concerns, therefore leading to sustainability.

Conclusion

The global economic crisis and the Mari incident illustrate that crises can occur all the time, simultaneously, without any linear order, and with tremendous long-term results. However, the majority of existing policy frameworks tend to respond to crises with linear strategies and tactics, even though the occurrences themselves are rather chaotic. For responding to any crisis, we need to understand the context within which they occur. According to chaos theory, there is no standardised recipe that helps confronting crises. In contrast, each crisis is unique and demands unique responses (Speakman and Sharpley, 2012). Yet, small island states, such as Cyprus, have specific characteristics (i.e., small size, overreliance on tourism and foreign investments) (Briguglio and Briguglio, 1996; Ioannides, 1992; McElroy, 2003; Sharpley, 2012) that make them susceptible to global forces and crises.

Paradoxically though, the small size and economy of small island states are factors that can make them much more flexible, in comparison to larger destinations, regarding their rapid

recovery when crises occur. Since flexibility is one of the most important variables in dealing with crises (Evans and Elphick, 2005), small island states are in an advantageous position to communicate with and coordinate stakeholders, local communities, and tourists towards dealing with the dramatic outcomes that change their system (Faulkner, 2000). However, the stakeholders of small island states need to be open-minded and willing to change. For doing so, a strong communication plan (Fall, 2004; McKercher, 1999) is needed in order to assist in bringing order out of chaos and therefore, become a 'strange attractor' (Speakman and Sharpley, 2012). Moreover, since there is no standard model of resolution from crises and every case is unique, local stakeholders should have the opportunity to develop their own strategies (Ziakas and Boukas, in press) and be ready in the 'edge of chaos' to deal with 'bifurcation'. This capacity-building process should be enabled and coordinated by tourism policy. Unfortunately, for Cyprus, findings indicate that this is not happening. Additionally, dramatic events for small island states underline the need to escape from the pressure of foreign forces, evident in mass tourism. Hence, crises could provide the opportunity to 'reconstruct' the system by adopting more sustainable practices of product development. This way, local capacity could be enhanced and attraction of investors towards sustainable forms of tourism could be achieved.

To conclude, we need to recognise that crises and the struggle for sustainability cannot be understood as linear processes since we are living in non-linear systems where events are chaotic. This is something that tourism policy-makers and stakeholders need to realise. What they can do is to be prepared when an incident happens in order to anticipate change and enable continuous learning to evolve as rapidly as the system (McKercher, 1999). They need to view crisis management as an iterative-cyclical process where local capacity can be developed (Figure 1), rather than as a sequential analysis of independent past events. Thus, they need to concentrate

on innovative, creative, unstructured and cognitive forms of organisation (Edgar and Nisbet, 1996) and therefore, learn to live and interact with(in) chaos. Future research needs to apply chaos theory on other destinations and different contexts in order to understand their environments when crises occur. This inquiry may focus on the discovery of those 'strange attractors' that would lead to rapid recovery and re-establishment of the order. Moreover, future research needs to examine how the notions of 'chaos', 'complexity', 'bifurcation', and 'strange attractor' can be fully utilised to enable sustainable tourism development. Finally, research should focus on the ways that economic, social, cultural, and environmental sustainability can be achieved and managed, in tourism systems operating within environments that are highly unbalanced, turbulent or susceptible to diverse catastrophic forces.

References

- Abboud, S., Haffar, W., Harter, S.F., McCreery, A.M. and Simon-Girard, H. (2012) Crisis as Impetus Toward Conflict Resolution in Cyprus. *Peace Review: A Journal of Social Justice*, 24(4), pp. 446-53.
- Andronikou, A. (1986) Cyprus - Management of the Tourism Sector. *Tourism Management*, 7(2), pp. 127-29.
- Archontides, Y.K. (2007) *Review of Cypriot Tourism: Through a Series of Articles, Interviews and Speeches* (Athens: AA Livani) [in Greek].
- Baggio, R. and Sainaghi, R. (2011) Complex and Chaotic Tourism Systems: Towards a Quantitative Approach, *International Journal of Contemporary Hospitality Management*, 23(6), pp.840-61.
- Barkey, H.J. and Gordon, P.H. (2001) Cyprus: The Predictable Crisis. *The National Interest*, 66, pp. 83-94.
- Bastin R.(1988) Small Island Tourism: Development of Dependency? *Development Policy Review*, 2(1): 79-90.
- Beirman D. (2003) *Restoring Tourism Destinations in Crisis: A Strategic Marketing Approach* (Crows Nest: Allen&Unwin).
- Bloom, S.L. (2000) Chaos, Complexity, Self-Organization and Us. *Psychotherapy Review*, 2(8), pp. 1-5.

- Boukas, N., Boustras, G. and Sinka, A. (2012) Golf Tourism: The Case of Cyprus, in O. Moufakkir and P.M. Burns (Eds.) *Controversies in Tourism*, pp. 144-59 (Oxfordshire: CABI).
- Boukas, N. and Ziakas, V. (Forthcoming) Exploring Perceptions for Cyprus as a Sustainable Golf Destination: Motivational and Attitudinal Orientations of Golf Tourists. *International Journal of Sport Management and Marketing*.
- Boukas, N. and Ziakas, V. (2013) Impacts of the Global Economic Crisis on Cyprus Tourism and Policy Responses. *International Journal of Tourism Research*, 15(4), pp. 329-45.
- Brecher, J., Costello, T. and Smith, B. (2000) *Globalization from Below: The Power of Solidarity* (Cambridge, MA: South End Press).
- Briguglio, L. and Briguglio, M. (1996) A Sustainable Transport Policy for Tourism on Small Islands: A Case Study of Malta, in L. Briguglio, W.L. Filho, R. Butler and D. Harisson (Eds.) *Sustainable Tourism in Islands and Small States: Case Studies*, pp.180-199 (London: Thomson Learning).
- Butler, R. (2008) Islands, in M. Lück (ed.) *Encyclopedia of Tourism and Recreation in Marine Environments*, p. 254 (Wallingford: CABI).
- Creswell, J. W. (2006) *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*, 2nd edition (London: Sage).
- CTO-Cyprus Tourism Organisation (2006) *Study for the Development of the Greek Tourist Market in Cyprus* (Nicosia: Cyprus Tourism Organisation) [in Greek].

- CTO-Cyprus Tourism Organisation (2013) *Cyprus Tourism in Figures 2012* (Nicosia: Cyprus Tourism Organisation).
- Demetriou, O. (2007) To Cross or Not to Cross? Subjectivization and the Absent State in Cyprus. *Journal of the Royal Anthropological Institute*, 13(4), pp. 987-1006.
- Denzin, N.K. and Lincoln, Y.S. (2005) Introduction: The Discipline and Practice of Qualitative Research, in N.K. Denzin and Y.S. Lincoln (eds.) *Handbook of Qualitative Research*, pp. 1-42 (Thousand Oaks, CA).
- Dicken, P. (2007) *Global Shift: Mapping the Changing Contours of the World Economy*, 5th edition (Thousand Oaks, CA: Sage).
- Duffy, J.A. (2000) The Application of Chaos Theory to the Career-Plateaued Worker. *Journal of Employment Counseling*, 37(4), pp. 229–36.
- Edgar, D.A. and Nisbet, L. (1995) A Matter of Chaos – Some Issues for Hospitality Businesses. *International Journal of Contemporary Hospitality Management*, 8(2), pp.6-9.
- Evans, N. and Elphick, S. (2005) Models of Crisis Management: An Evaluation of their Value for Strategic Planning in the International Travel Industry. *International Journal of Tourism Research*, 7(3), pp. 135–50.
- Fall, L.T. (2004) The Increasing Role of Public Relations as a Crisis Management Function: An Empirical Communication Restrategising Efforts Among Destination Organisation Managers in the Wake of 11th September, 2001. *Journal of Vacation Marketing*, 10(3), pp. 238-52.

- Farsari, Y. and Prastacos, P. (2003) Towards a Framework for Establishing Policy Goals for Sustainable Tourism in Mediterranean Popular Destinations, in E. Beriatos, C.A. Brebbia, H. Coccossis and A. Kungolos (eds.) *Sustainable Planning and Development*, pp. 441-51 (Southampton:WIT Press).
- Faulkner, B. (2000) *'The Future Ain't What It Used To Be': Coping With Change, Turbulence and Disasters in Tourism Research and Destination Management* (Gold Coast: Griffith University).
- Faulkner, B. (2001) Towards a Framework for Tourism Disaster Management. *Tourism Management*, 22(2), pp. 135-47.
- Faulkner, B. and Valerio, P. (1995) An Integrated Approach to Tourism Demand Forecasting. *Tourism Management*, 16(1), pp. 29-37.
- Gillmor, D.A. (1989) Recent Tourism Development in Cyprus. *Geography*, 74(3), pp. 262-65.
- Glaser, B.G. and Strauss, A.L. (1967) *The Discovery of Grounded Theory: Strategies for Qualitative Research* (Chicago: Aldine Publishing).
- Hayles, N.K. (1990) *Chaos Bound: Orderly Disorder in Contemporary Literature and Science* (Ithaca, NY: Cornell U. Press).
- Henderson, J.C. and Ng, A. (2004) Responding to Crisis: Severe Acute Respiratory Syndrome (SARS) and Hotels in Singapore. *International Journal of Tourism Research*, 6(6), p. 411-19.
- Ioannides, D. (1992) Tourism Development Agents: The Cypriot Resort Cycle. *Annals of Tourism Research*, 19(4), pp. 711-31.

- Ioannides, D. and Debbage, K. (1997) Post-Fordism and Flexibility: The Travel Industry Polyglot. *Tourism Management*, 18(4), pp. 229-41.
- Jessop, B. (2000) The Crisis of the National Spatio-Temporal Fix and the Tendential Ecological Dominance of Globalizing Capitalism. *International Journal of Urban and Regional Research*, 24(2), pp. 323–60.
- Jóhannesson, G.T. and Huijbens, E.H. (2010) Tourism in Times of Crisis: Exploring the Discourse of Tourism Development in Iceland. *Current Issues in Tourism*, 13(5), pp. 419-34.
- Josephides, N. (1993) Managing Tourism in a Recession. *Tourism Management*, 14(3), pp.: 162-66.
- Kyriakou, N. and Kaya, N. (2011) *Minority Rights: Solutions to the Cyprus Conflict* (London: Minority Rights Group International).
- Kauffman, S. (1995) *At Home in the Universe: The Search for Laws of Self-Organization and Complexity* (New York: Oxford University Press).
- Lewin, R. (1999) *Complexity: Life at the Edge of Chaos*, 2nd edition (Chicago, IL: University of Chicago Press).
- Lewis-Cameron, A. and Roberts, S. (2010) Small Island Developing States: Issues and Prospects, in A. Lewis-Cameron and S. Roberts (eds.) *Marketing Island Destinations: Concepts and Cases*, pp. 1-8 (London: Butterworth-Heinemann).
- McElroy, J.L. (2003) Tourism Development in Small Islands Across the World. *Geografiska Annaler*, 85(4), pp. 231-42.

- McKercher, B. (1999) A Chaos Approach to Tourism. *Tourism Management*, 20(4), pp. 425-34.
- Meethan K. (2001) *Tourism in Global Society: Place, Culture, Consumption* (New York: Palgrave).
- Miles, M. and Huberman, A. (1994) *Qualitative Data Analysis*. 2nd edition (London: Sage).
- Miller, A.G. and Ritchie, B.W. (2003) A Farming Crisis or a Tourism Disaster? An Analysis of the Foot and Mouth Disease in the UK. *Current Issues in Tourism*, 6(2), pp. 150-71.
- Miller, G., Stevenson, N. and Airey, D. (2009) Complexity Theory and Tourism Policy Research. *International Journal of Tourism Policy Research*, 2(3), pp. 206-20.
- Niles, D. and Baldacchino, G. (2011) Introduction: On Island Futures, in D. Niles and G. Baldacchino (eds). *Island Futures: Conservation and Development Across the Asia-Pacific Region*, pp. 1-8 (New York: Springer).
- Nugent, N. (2007) Cyprus and the European Union: The Significance of its Smallness, Both as an Applicant and a Member. *Journal of European Integration*, 28(1), pp. 51-71.
- Paphospress.com (2013) *Ryanair Increases Itineraries on Winter* (27 June 2013), available at: <http://pafospress.com/h-ryanair-ενισχυμένη-στην-πάφο-τον-χειμώνα-24-επ/> (accessed 4 July 2013) [in Greek].
- Paraskevas, A. (2006) Crisis Management or Crisis Response System? A Complexity Science Approach to Organizational Crises. *Management Decision*, 44(7), pp. 892-906.
- Pasiardis, P. (1998) *The Competitiveness of the Cypriot Tourist Product*, University of Cyprus, available at:

- http://www.visitcyprus.com/media/b2b_gr/Research_Projects/I_antagonistikotita_tou_Kypriakou_Touristikou_Proeontos.pdf (accessed 28 June 2013) [in Greek].
- Prideaux, B. (2009). *Resort Destinations: Evolution, Management and Development* (Oxford: Butterworth-Heinemann).
- Ritchie, B.W. (2004) Chaos, Crises and Disasters: A Strategic Approach to Crisis Management in the Tourism Industry. *Tourism Management*, 25(6), pp. 669-83.
- Russell, R.A. (2006) Chaos Theory and Managerial Approaches, in D. Buhalis and C. Costa (eds.) *Tourism Management Dynamics: Trends, Management and Tools*, pp. 108-15 (Oxford: Butterworth-Heinemann).
- Russell, R. and Faulkner, B. (2004) Entrepreneurship, Chaos and the Tourism Area Lifecycle. *Annals of Tourism Research*, 31(3), pp. 556-79.
- Saveriades. A. (2000) Establishing the Social Tourism Capacity for the Tourist Resorts of the East Coast of the Republic of Cyprus. *Tourism Management* 21(2), pp. 147-56.
- Sellnow, T.L., Seeger, M.W. and Ulmer, R.R. (2002) Chaos Theory, Information Needs, and Natural Disasters. *Journal of Applied Communication Research*, 30(4), pp. 269-92.
- Sharpley R. (2002) Rural Tourism and the Challenge of Tourism Diversification: The Case of Cyprus. *Tourism Management*, 23(3), pp. 233-44.
- Sharpley, R. (2003) Tourism, Modernisation and Development on the Island of Cyprus: Challenges and Policy Responses. *Journal of Sustainable Tourism*, 11(2-3), pp.246-65.

- Sharpley, R. (2012) Island Tourism or Tourism on Islands? *Tourism Recreation Research*, 37(2), pp. 167-72.
- Speakman, M. and Sharpley, R. (2012) A Chaos Theory Perspective on Destination Crisis Management: Evidence from Mexico. *Journal of Destination Management and Marketing*, 1(1-2), pp. 67-77.
- Stiglitz, J.E. (2003) *Globalization and its Discontents* (London: W.W. Norton & Company).
- Thiéart, R.A. and Forgues, B. (1995) Chaos Theory and Organisation. *Organization Science*, 6(1), pp. 19-31.
- Tribe, J. (2011) *The Economics of Recreation, Leisure and Tourism*, 4th edition (Oxford: Butterworth-Heinemann).
- Waldrop, M. (1992) *Complexity: The Emerging Science at the Edge of Order and Chaos* (New York: Simon & Schuster).
- Weick, K.E. and Sutcliffe, K.M. (2001) *Managing the Unexpected: Assuring High Performance in an Age of Complexity* (San Francisco: Jossey-Bass).
- Wilkinson, P.F. (1989) Strategies for Tourism in Island Microstates. *Annals of Tourism Research*, 16(2), pp. 153-77.
- Witt, S.F. (1991) Tourism in Cyprus: Balancing the Benefits and Costs. *Tourism Management*, 12(1), pp. 37-45.
- Yin, R.K. (2009) *Case Study Research: Design and Methods*, 4th edition (Thousand Oaks, CA: Sage).

Young, T.R. (1991) Chaos and Social Change: Metaphysics of the Postmodern. *The Social Science Journal*, 28(3), pp. 289-305.

Zahra, A.L. and Ryan, C. (2007) From Chaos to Cohesion - Complexity in Tourism Structures: An Analysis of New Zealand's Regional Tourism Organizations'. *Tourism Management*, 28(3), pp. 854-62.

Ziakas, V. and Boukas, N. (In Press) Global Change and European Tourism Futures: Destination Management, Competitiveness and the Struggle for Sustainability, in A. Postma, I. Yeoman and J. Oskam (eds.) *The Future of European Tourism* (Leeuwarden, The Netherlands: ETFI, Stenden University).

Table 1: List of respondents

Respondent	Organisation
1	Cyprus Tourism Organisation
2	Cyprus Tourism Organisation
3	Association of Cyprus Travel Agents
4	Association of Cyprus Travel Agents
5	Cyprus Chamber of Commerce and Industry, Department of Services and Trade/Cyprus Hotel Managers Association
6	Cyprus Investment Promotion Agency
7	Cyprus Hotel Association
8	Association of Cyprus Tourist Enterprises

Table 2: Evolution and state of Cyprus tourism

Stage	Description
1960-1974	<p>After many years under the rule of the British Empire, the new-born island state invested in tourism as one of the main pillars of its, until then, devastated economy in order to generate foreign income, revitalise itself, and put the island on the global tourism map (Ioannides, 1992). This stage is characterised by rapid tourism development that led to a noticeable increase of international tourist flows on the island (from approximately 25,000 arrivals in 1960 to 225,000 arrivals in 1973) (Sharpley, 2003; Witt, 1991). Consequently, the remarkable results of tourism development drove the Cyprus Government to embrace this sector as a core economic contributor for the island (Archontides, 2007).</p>
1975-2001	<p>The increasing course of the Cypriot tourism was suddenly interrupted in July 1974 due to the Turkish invasion and the, eventually, illegal occupation of the 37.3% of the north of the island (Andronikou, 1986; Gillmor, 1989; Ioannides, 2001; Sharpley, 2002; Witt, 1991). Since 1974 and until 1983, the northern part of the island was controlled by Turkey and, since 1983 it is self-declared and recognised only by itself as the Turkish Republic of Northern Cyprus (Barkey and Gordon, 2001). This crisis created several social, economic and structural problems that clearly affected tourism, too. For instance, due to the invasion, Cyprus lost the two thirds of the tourist accommodation and almost all that under construction, two principal coastal resorts, some of the most attractive places and the main access point of Nicosia airport (Gillmor, 1989). Yet, Cyprus tourism managed to recover, and despite its lost northern part, Cypriot tourism in the free areas started to increase dramatically (in 1980 tourist arrivals on the island reached the 348,530 supplying CYP 71 million or 121 million euros) and with small fluctuations, due to several micro-events, reached its peak (in terms of arrivals) in 2001 (2,696,732 arrivals that brought 2,182 million euros) (CTO, 2011; Pasiardis, 1998). Trying to invest in the island's natural resources and meet the tourist trends and demands of that time, tourism policy concentrated on exploiting mostly characteristics of mass tourism (3Ss elements) appealing mostly to Northern European markets, principally English and Scandinavians (Ioannides, 1992).</p>
2002-Today	<p>2001 was the year that Cyprus tourism managed to reach the maximum number of arrivals. Since then, tourism in Cyprus steadily (with small fluctuations) decreases. Characteristically, the first decade of 2000s tourist arrivals have dropped (by approximately 524,000 tourist arrivals, from 2,696,732 in 2001 to 2,172,998 in 2010) while tourist revenues have also dropped (by approximately from 2,182 million euros in 2001 to 1,570 million euros in 2010) (CTO, 2011). Hence, the third stage of the island's tourism has been characterised by a major decrease, while the economic crisis of 2008 as well as the recent economic recession in March 2013, exacerbated this situation. This evidence illustrates the maturity of the Cypriot tourism product, which even though was successful for many years, it started to decline. Consequently, Cyprus is no longer a competitive destination, while its traditional (mass) tourism product has been saturated, thereby bringing about the urgent need for a turn towards long-term sustainable tourism development as a means to recover from this grave situation.</p>

Table 3: Tourist arrivals and revenues

Year	Arrivals	Revenues (€million)
2001	2,696,732	2,182
2002	2,418,238	1,941
2003	2,303,247	1,743
2004	2,349,012	1,688
2005	2,470,063	1,733
2006	2,400,924	1,772
2007	2,416,081	1,878
2008	2,403,750	1,810
2009	2,141,193	1,510
2010	2,172,998	1,570
2011	2,392,223	1,749
2012	2,464,903	1,928

Source: CTO (2013)

Figure 1: Tourism Crisis Management as a Chaotic Process

