Scuba Diving Tourism System: A framework for collaborative management and sustainability

Kay Dimmock [a,*], Ghazali Musa [b]

[a] School of Business and Tourism, Southern Cross University, P.O. Box 157, Lismore NSW 2480, Australia
[b] Faculty of Business and Accountancy, University of Malaya, Kuala Lumpur, Malaysia

ARTICLE INFO

ABSTRACT

This paper proposes a conceptual model for the scuba diving tourism system (SDTS). A holistic view was adopted to highlight the central elements of scuba diving tourism (SDT). Specifically, the paper examines the key components in the SDTS along with issues which challenge the sustainability of SDT. Scuba divers, the marine environment, the host community and the scuba diving tourism industry (including all associated industries) are fundamental elements of the SDTS. Notably, the host community is often overlooked as a key stakeholder in the management and sustainability of SDT at the destination. A systems approach used to conceptualise the SDTS highlights the need for adaptive management and leadership to encourage future orientated thinking and the integration of stakeholder concerns and perspectives to ensure the sustainability of marine resources and experiences.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

The popularity of recreational scuba diving has increased in recent decades to an extent that scuba diving and the business activity supporting it have become important tourism sectors stimulating a billion dollar global industry [2]. Ongoing demand for scuba diving has been driven by divers' desire to witness and experience marine nature [3,4]. At the same time greater access to appealing underwater sights through advances in technology, training, education, and equipment have created a thriving Scuba Diving Tourism (SDT) industry that supports diving activity [5]. There is now a proliferation of destinations and tourism enterprises working to accommodate and serve scuba diving tourists who seek access to marine environments and wildlife. Now, scuba diving tourists travel throughout the world visiting coral reefs in 91 countries [6].

A growing number of publications in recent years have alerted to the many issues and concerns relevant to scuba diving tourism. A review of research since 2005 reveals some 16,000 publications with scuba diving as their focus. This research comprises a broad enquiry extending from marine environment impacts through to human physiology, health and safety, and diver motivation and satisfaction. Many of these studies support an effort to understand the issues in scuba diving and related tourism, yet less than 30 per cent integrate multiple stakeholders and perspectives in a holistic or systematic way.

Research has been linear with attention primarily given to scuba diving tourists and impacts. Little research has included the scuba diving industry, host communities or efforts towards sustainability. Research has, for example, examined the profile and motivations of divers [7], diver satisfaction [8,9] and diver experiences [4,10,11]. Study of divers' experiences has drawn on the detail of personal narratives of being immersed in the underwater world [11,12]. In doing so, researchers have grappled with the multi-dimensional and multi-disciplinary nuances of the human–environment phenomenon drawing from environmental, social and psychological factors [10,13,14]. These endeavours have conceptualised scuba diving experiences as place attachment, in-water comfort and responsible underwater behaviour. Together they offer insight and detail of human experiences in a marine leisure context revealing fulfilment and happiness, comfort, constraint or negotiation and responsible underwater behaviour [10,13,14].

Scuba diving tourism is an economically important industry evidenced by the number of locations promoting their marine resources in efforts to become scuba diving destinations and scuba diving hotspots. This is witnessed in the popularity of Koh Tao in Thailand, Layang Layang and Sipadan in Malaysia and the Great Barrier Reef, Australia as 'must dive' places widely promoted in social and other media [15–17]. This is supported by research assessing the economic value of scuba diving tourism for industries and destinations [18–20]. Tourist demand for scuba diving has resulted in the global emergence of a niche sector which represents high-yield tourism [4].

A range of research has also examined the environmental impacts of diving on marine ecosystems [7,15,21,22]. Atkins et al. [23], for example, noted that frequency and diversity of use is changing marine habitats and landscapes. Research has also highlighted the fragility of ecosystems used for tourism and noted the importance of ongoing assessment of ecological, social and economic factors to inform discussions of sustainability [24,25]. Meanwhile, Liu [26] argues that change in environmental resources at a destination does not render sustainability a failure, as some impacts are unavoidable. Scuba diving in sensitive and fragile locations requires effective management to protect ecological and cultural values. In the search for sustainable approaches, there is a need to understand the intersections between social and environmental systems as the critical points from which to advance sustainability goals [27]. Thus to achieve sustainable outcomes, effective tourism management must integrate both social and ecological systems [28–30].

Other research challenging the sustainability of scuba diving tourism highlights the importance of stakeholders within the destination [31]. For example, Wongthong and Harvey collected host community members perceptions of the diving industry in Thailand. Their research suggested that there were opportunities for improved relations between the scuba diving sector, marine-based tourism operations and those responsible for governance and management to achieve more sustainable outcomes. Meanwhile, Hillmer-Pegram [31] found that scuba diving operators in the US Virgin Islands experienced a lack of social and political support at the destination that challenged broader efforts to be sustainable. In other research, scuba diving tourism destination stakeholders in some Malaysian island locations had varying perceptions towards the sustainability of scuba diving tourism. Particularly evident were environmental concerns raised by industry stakeholders which were not a priority for non-diving stakeholders who, on the other hand, supported growth and development and a focus on economic outcomes generated by scuba diving and related industry activity [32]. This body of research concluded that achieving sustainable outcomes needs an approach which draws the views and concerns of multiple stakeholders together to integrate social and ecological issues in scuba diving tourism. To this end, a systems approach is advantageous to understand elements, relationships and issues within a given tourism system and to explore how these can be managed to improve sustainable outcomes [26,33,34].

A whole system approach is considered important to unravel the complexity of tourism activity and guide effective management and sustainability [28,30,35–37]. A systems approach can clarify the relationships between stakeholders and reveal the different perspectives, priorities and values of each. Systems approaches enable multiple stakeholders, and their needs and issues, to be acknowledged and included in decision-making processes [38]. In this way, systems approaches represent holistic alternatives to more linear approaches, which might exclude the concerns of particular people and contexts [37]. Further, processes of change and interactions between humans and their environment can be better understood from a systems standpoint [39]. For example, Atkins et al. [23] used a systems perspective to study human induced influences on marine ecosystems and recommended policy-level decisions incorporating all stakeholders from the resource users' community in addressing usage impacts and sustainability goals. As Plummer and Fennell [30] note, a systems approach provides new understandings while enabling more opportunities for sustainable management through collaboration and shared responsibility in the co-management of social and ecological resources.

In this paper, a whole systems approach is used to propose a conceptual model of the scuba diving tourism system (SDTS). Conceptual models help to explain complex phenomena and processes in tourism [28,40]. They can, for example, highlight key elements and simplify important associations in otherwise complex stakeholder

relationships that influence tourism development processes and outcomes [4,40,41]. This paper takes a holistic view to clarify the key elements in the SDTS and explore patterns in the relationships between stakeholders involved in scuba diving tourism.

2. The Scuba Diving Tourism System

The central elements in the Scuba Diving Tourism System (SDTS) are considered to be: the marine environment, scuba divers, the scuba diving tourism industry and the host community (represented in Fig. 1 and explained below).

As the proposed conceptual model shows, the core elements of the SDTS include divers, marine environments, the scuba diving tourism industry and the host community. The marine environment is located at the core of the SDTS since the marine environment is the key element on which all stakeholders in the system depend. Key stakeholders involved in the operation of the SDTS include scuba divers (demand), and suppliers of scuba diving tourism services (scuba diving operators, charter operations, scuba diving education and training, as well as associated service and tourism industries such as accommodation, transport, food services, retail and other services catering for scuba divers). Other key stakeholders include the host community who provide social and cultural resources and governments, policy makers and resource managers who manage and provide access to valued marine environments. In the context of SDT, the use of fragile ecological environments adds complexity to stakeholder relations [37,44,45]. At the same time, stakeholders prioritise resources and functions according to their needs and make decisions based on those priorities [42].

To varying degrees, each stakeholder operating within this system has their own roles and responsibilities, yet they also interact with, and are dependent on, the other system stakeholders. Thus areas of overlapping function require collaboration and accommodation of roles, agendas and perspectives. Collaboration helps different stakeholders to recognise other stakeholders' unique perspectives at the local level as well as provide a process for exchange and greater collective understanding [43]. As a social construct, system boundaries are flexible and when applied to the local context each stakeholder is identified highlighting their responsibility for influencing the system.

2.1. Divers

There are reportedly millions of certified scuba divers worldwide [2,4]. However, many of them experience diving as part of a
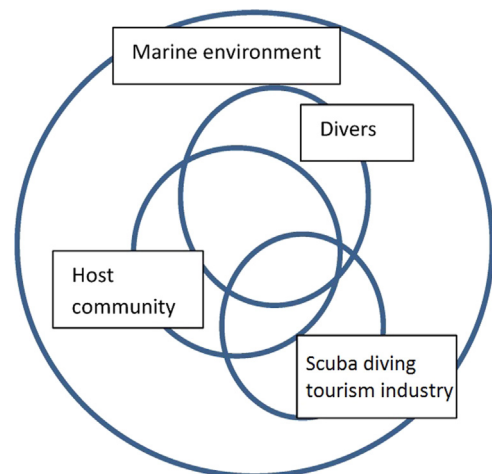

Fig. 1. The Scuba Diving Tourism System – key elements.