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MULTISTAKEHOLDER VALUES ON THE SUSTAINABILITY OF DIVE TOURISM: CASE STUDIES OF SIPADAN AND PERHENTIAN ISLANDS, MALAYSIA

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The impact on the marine environment of the rapidly growing dive tourism industry in less developed countries is increasingly understood, but little research currently exists on its impact on overall sustainability at host sites. This article applies Social Exchange Theory to assess multistakeholders' perspectives of dive tourism for two Malaysian islands: the Perhentians and Sipadan. We argue that multiple interest groups exist within the sites, with heterogeneous attitudes relating to dive tourism. We found that dive instructors (most knowledgeable and engaged) have the most polarized views and clearly identify links between environment, society, and development. Nondive businesses show greater engagement with economic development impact, but may not link this to environmental preservation. Tourists were surprisingly indifferent—highlighting their lack of loyalty to "place" per se or opportunities for alternative travel choices.

Key words: Sustainable tourism; Stakeholders; Economic development; Environment

Introduction

International tourism is of growing significance for many less developed countries, generating foreign exchange, contributing to economic growth, employment, government revenues, and national income (United Nations World Tourism Organization [UNWTO], 2009). However, it may be costly for indigenous social systems and communities and, depending on tourism type, the natural environment on which tourism depends (Strickland-Monro, Allison, & Moore, 2010). Dive tourism exemplifies this; the very attributes valued by the industry may be threatened by commercial development (Garrod & Gössling, 2008).

Diving is a rapidly increasing leisure activity. Estimates of global growth are 14% per annum in newly certified divers (Professional Association of Diving Instructors [PADI]). Work to date on dive tourism's impacts concentrate on marine biodiversity degradation (Hasler & Ott, 2008; Rouphael & Inglis, 1997), which is only one aspect of wider

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sustainability. Additionally, site-specific research has been undertaken on resident attitudes to tourism development (Deidrich & Garcia-Buades, 2009; Kayat, 2002; Sirakaya, Teye, & Sonmez, 2002; Wang & Pfister, 2008)—as single stakeholder groups at tourism sites. However, little research exists on the extent to which dive tourism affects (i) all aspects of sustainability at the destination or (ii) multiple stakeholder perspectives on tourism development.

The United Nations (2005) refers to the "interdependent and mutually reinforcing pillars" of sustainable development (economic, social, and environmental), recognizing the close interdependency between them. Such interdependency is reflected in outputs from the 1992 Rio Summit. While this highlights the laudable importance of these holistic perspectives on sustainable development, in practice, for any given initiative, there will be stakeholders who perceive a gain and others who lose overall and within these elements. Understanding these differing stakeholder outcomes should be an important element in understanding behavior towards any development activity and its impact on sustainability.

Despite sustainable development's conceptual popularity, there is a paucity of research on its holistic impacts upon tourism development, or analysis of stakeholder values and perspectives on development (Ioannides, 2001). This article seeks to address this gap, developing an approach for investigating dive tourism's impact on sustainable development from multistakeholder perspectives. We apply this to two popular Malaysian dive sites. The value of this approach informs action and policy—not just for destinations reliant on the natural environment (as with dive tourism) but also wider development—and for sustainable tourism in general.

Literature Review

Sustainable Development and Dive Tourism

Much of relevant literature is within a biological/environmental perspective and concentrates on diving's effects on coral quality and growth. Rouphael and Inglis (1997) identified diver damage to coral and, given its fragility, recommended establishing dive management procedures. Hasler and Ott (2008) discussed direct negative impacts of diving on coral in the Red Sea, and recommended dive restrictions, sustainable dive plans by site, and increased education for all participants.

Research evaluating the wider impacts of dive tourism recognizes the economic, environmental, and/or social impacts of development to some extent. White, Vogt, and Arin (2000) discussed the imperative for reef management systems in the Philippines (environmental, economic considerations), and Shaalan (2005) explored wider sustainability impacts of dive tourism in the Red Sea, identifying the positive economic impact on local employment, despite the high percentage of tourist revenues accrued from outside the destination. Although wide-ranging environmental impacts were identified (including marine/coral degradation, infrastructural problems from hotel construction and waste), little social impact was highlighted. Thur (2010) identified that diver user fees could support marine protection with no adverse effect on tourist numbers, maintaining the economic and social benefits to the tourism system overall. Stolk, Markwell, and Jenkins (2007) developed a multidimensional model of impact factors of diving, and the relationship between multiple stakeholders and resources used. While they noted that sustainable dive tourism management required a multidisciplinary approach to understand the numerous competing and complementary activities, they did not attempt to measure these, either in isolation or relatively.

Stakeholder Value

Attempts to measure the differential stakeholder impacts and importance in a tourist "system" have been undertaken by Fredline and Faulkner (2000), Gursoy, Jurowski, and Uysal (2002), and Zhang, Inbakaran, and Jackson (2006). In each case, the "measured" impact was established (costs and benefits for individual/stakeholder group level) using established sociological concepts, such as Social Exchange Theory or multistakeholder analysis (Tucker 2003). Social Exchange Theory attempts to combine the utilitarian and behaviorist approach to individual decision making (Blau, 1964; Homans, 1961). Homans (1961) described it as "the exchange of activity, tangible or intangible, and more or less rewarding or costly, between at least two parties"

(cited in Cook & Rice, 2003, p. 54). Costs were viewed as lost opportunities and behaviors as a function of payoffs. The theory has subsequently developed (Skidmore, 1975, cited in Zhang et al., 2006) to posit that individuals engage in an exchange if the outcome is rewarding and valuable, and the benefits outweigh the negative results (i.e., behaviors and attitudes are determined by whether they provide benefits to the individual). The theory has broad parallels with basic economic theories where parties undertake actions where benefits outweigh costs. In economic terms this has traditionally equated to benefits and costs where a monetary value is placed on the cost-benefit, but more recent literature (e.g., environmental economics) discusses means of nonmonetary value measurement (Cook & Rice, 2003; Hodge 1995).

Social Exchange Theory has particularly been used in tourism research concerning resident attitudes to tourism development. Zhang et al. (2006) noted this, and identified Perdue, Long, and Allen (1990) and Ap (1992) as seminal works applying Social Exchange Theory to tourism. Perdue et al. (1990), through research with rural residents in Colorado, observed that perceptions of tourism impact were unrelated to sociodemographic characteristics, but instead to tourism's perceived positive or negative impacts upon individuals. Ap (1992) demonstrated that relative success of tourism, was a result of a trade-off between its costs and benefits perceived by community members. Gursoy et al. (2002) developed parameters whose complex interaction had a direct, or indirect, contribution to residents' perceptions of the cost-benefit of tourism development in Virginia. Their research considered multiple parameters (e.g., residents' concern for the community, state of local economy, extent to which resource bases are shared with tourists), which were postulated to impact either positively or negatively upon individual stakeholders. They considered many sustainable development factors (with concern and attachment to community being a proxy for "social" sustainability, resource bases providing a subset of environmental concerns, and economy measured explicitly) but, like others, only considered the views of one stakeholder group—the residents.

Kayat (2002) incorporated power into stakeholder perspectives and social exchanges, using Langkawi (Malaysia). He considered resident perceptions of tourism, particularly relating to economic and community (social) factors. Unlike Gursoy et al. (2002) or Byrd, Bosley, and Dronberger (2009), he employed qualitative research techniques and in-depth interviews for data collection. Residents were divided into "high" and "low" power groups: the former consisted of those with at least one of the resources they could use as an exchange for the benefits from tourism. Diedrich and Garcia-Buades (2009) developed Butler's (1980) Tourism Area Life Cycle to examine residents' perceptions and indicators of destination decline. They explored perceptions concerning whether residents considered the level of tourism to be too high or low and whether changes were considered as positive. They demonstrated that stakeholder attitudes, (in this case, resident) may be affected by tourism's development stage in the destination, articulated through the concept of carrying capacity.

To date, there has been little attempt to consider multiple sustainable development attributes in a multistakeholder dive tourism perspective. To understand whether a holistic perspective on sustainable development can be operationalized, we need to explore whether different tourism stakeholder types consider it to be a benefit or cost to them (economic growth/contraction, social benefit/cost, and environmental conservation/degradation). The literature to date has been unable to provide this.

Methodology

We used a range of techniques to profile disparate stakeholder values for each sustainable development factor. To enable depth of analysis, while still generating results that were not site specific, we considered two Malaysian locations: Perhentian and Sipadan. They are leading examples of two different forms of dive tourism within a rapidly developing country, but with differing levels of environmental and developmental management. Perhentian is mainly a dive training location where new divers (primarily backpackers) are PADI certified, whereas Sipadan is a world-class dive site, attracting experienced divers purchasing luxury all-inclusive packages.

Exploratory visits in July–August 2008 with 67 semistructured interviews generated a broad understanding of the location dynamics and illustrated

the range of stakeholders involved in dive tourism at each site. Following that, a comprehensive list of sustainable development factors was established. This was created by combining the UNWTO (1996) indicators with a site applicable list from Schianetz and Kavanagh (2008), providing a baseline information list on which economic, social and/or environmental sustainability could be determined (Table 1).

We considered whether data could be provided from secondary or primary sources (through stakeholder values and views). Since stakeholder views were our main focus, the indicators of interest were those where opinion could be sought through semistructured interviews. We decided that prescriptive survey data on attitudes and perceptions might not provide objectivity, as the questions themselves may skew responses. Thus, the preferred interview method was informal, allowing respondents to provide in-depth views without prompting. Although lists of "baseline" questions were used on the interview documents, the semistructured techniques allowed respondents' comments to be probed further with the potential for unanticipated responses.

In April–May 2009, 72 semistructured interviews took place with baseline questioning

Table 1
Sustainable Development Themes Developed (Informed by UNWTO, 1996, and Schianetz and Kavanagh, 2008)

No.	Indicator Theme	Indicator Measures	Economic (Ec), Social (S), Environmental (En)	Source of Data [Secondary (S), Interviews (I)]
1	Biodiversity, critical ecosystems	Amount of native/threatened species, number of endangered species	En	S
2	Resource use	Use: energy, water, material	En	S I
3	Pollution	Contamination: air, water, soil	En	S I?
4	Land use	Changes in land use (e.g., reduction of forest area)	En	S I?
5	Tourism attractiveness, customer satisfaction	Visitor satisfactions, returning visitors	En, S,	I
6	Environmental awareness	Environmental awareness of visitors, staff, neighboring community	En	I
7	Recreational quality	Amount/quality of recreational facilities	S, Ec	I
8	Healthy living	Includes security, health, education, income, recreation	S, Ec	I
9	Cultural heritage	Potential for indigenous people to retain and exercise their tradition	S	I
10	Educational opportunities	Formation/loss of apprenticeship training	S, Ec	I
11	Local businesses	Amount of local businesses; turnover of local industry	Ec	S I
12	Green design	Implementation/application/use of green design technology	Ec, En	I
13	Waste management	Amount of treated, recycled, reused waste/ wastewater	En	S
14	Water supply	Long-term water available	Ec, S, En	S
15	Ecological value	Special features of the area: rare species, geology, potential for research	En, Ec?	?
16	Community learning	Community activities fostering collective learning	S	I
17	Affordability	Percent facilities provided for low-income groups	S	I
18	Natural capital	Income from ecosystem services (e.g., fishing, harvesting, recreation)	Ec, En	I, S?
19	Property values	Costs for land, houses, rent	Ec, S	S, I
20	Social cohesion	Amount of communal activities, relief operations	S	I
21	Alternative energy	Percent energy from alternative sources	Ec, En	I S
22	Revegetation	Revegetated areas	En	S
23	Conservation zones or site protection	Area for conservation/wildlife protection	En	S
24	Stress	Tourists visiting site (per annum/peak month)	Ec S En	S I
25	Social impact	Ratio of tourists: locals (peak period and over time)	S Ec	S I
26	Development control	Environmental review procedures, format controls over development of site and use densities	En	S
27	Planning process	Organized regional plans for tourist destinations	Ec S En	S
28	Local satisfaction	Level of satisfaction by visitors	S En Ec	I
29	Tourism contribution to local economy	Percent total economic activity by tourism	Ec En	S I

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data on attitudes and per-
le objectivity, as the ques-
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od was informal, allowing
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lowed respondents' com-
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72 semistructured inter-
ith baseline questioning

z and Kavanagh, 2008)

nomic (Ec), Social (S), ronmental (En)	Source of Data [Secondary (S), Interviews (I)]
En	S
En	S I
En	S I?
En	S I?
En, S,	I
En	I
S, Ec	I
S, Ec	I
S	I
S, Ec	I
Ec	S I
Ec, En	I
En	S
Ec, S, En	S
En, Ec?	?
S	I
S	I
Ec, En	I, S?
Ec, S	S, I
S	I
Ec, En	I S
En	S
En	S
Ec S En	S I
S Ec	S I
En	S
Ec S En	S
S En Ec	I
Ec En	S I

informed by the process described above. The research teams comprised both UK and Malaysian academics/research assistants, allowing interviews to be carried out either in English or *Bahasa Malaysia*. Interview data were subsequently coded using NVivo software and categorized by stakeholder group and key issues emerging. Stakeholders were categorized by role within the tourist system: four major categories were developed: dive instructors/masters; dive related businesses; other businesses/locals; and tourists. While ideally we would have liked to include different categories (particularly residents), access constraints did not enable this as will be detailed later. The categories grouped respondents according to their likely perspective on the tourism system in each study location:

1. "Dive instructors/dive masters" were the largest group and were mostly expatriates, some having lived in Malaysia for many years. Their main role is to train and lead divers underwater. We expected that their priorities would relate to the marine environment's quality rather than the societal and economic impacts of development, and perhaps to have differing perspectives based on knowledge of other sites.
2. "Dive businesses" incorporated respondents whose livelihood depends on diving—including dive shop owners, boat crew, and compressor/equipment specialists. This category included both expatriates and locals. We expected this group to express concern for the marine environment's quality, but also to recognize the impact of development on wider economic and social issues, and have greater awareness of competition from newer tourist offerings.
3. "Nondive business" respondents had livelihoods that do not depend on the dive industry, including resort hotel staff to shopkeepers, travel agents, and managers of smaller hotels. We expected this category to be interested in economic and societal development, and that the quality of the environment (and marine environment in particular) was seen to be a central, or ancillary, issue for their success.
4. "Tourist" respondents were mainly international tourists who came to the location to dive. As key customers, their perspective and concerns should be of central interest to all the other categories, particularly the first two. Additionally, tourists have ready access to alternative offerings so that comparisons could be possible.

The interview notes were evaluated and responses categorized according to key themes within the environment/societal/economic remit. The dominant categories coded were:

1. Infrastructure development (hotels, airports, roads and, in the case of Perhentian, jetties).
2. Tourist impacts (carrying capacity and stress from present and future tourist numbers, tourist types). Within the latter, the focus was on the activities undertaken (diving or nondiving); the tourists' demands [backpackers/upmarket, individual/packages, and nationality (international or local)].
3. Environmental impacts—biodiversity and the natural environment (particular focus on the coral): amount of pollution (rubbish and sewage); and resource provision (water, electricity).
4. Community development issues (cultural challenges at the site; impact of tourism on language; impact of large business investors; role of government).

These themes map onto the UN WTO sustainable development themes (Tables 1 and 2). The latter maps the sustainable development parameters assessed to be relevant for each above theme.

For each site the data were analyzed and categorized by theme and whether the respondents' view was positive or negative to the likely future change under consideration. For economic development themes (infrastructure development, tourist numbers, and tourist type) positive and negative stakeholder views were recorded, and whether the respondent linked these to other sustainable development impacts (environment or societal) either positively or negatively. Similar cross-mapping was applied for the environmental theme (with social and economic) and the social theme (with environmental and economic).

Case Studies: Sipadan and the Perhentian Islands (Perhentian)

Malaysia has numerous dive sites around its peninsula and in Borneo (Sabah and Sarawak) and had

Table 2
UNWTO Parameters (From Table 1) Mapped to Key Themes Emerging at Perhentian and Sipadan

	Fieldwork Themes/Issues						
UNWTO Indicators	Infrastructure Development	Tourist Numbers	Tourist Type	Biodiversity	Resources	Pollution	Community Development
1	X	X		X		X	
2	X	X			X		
3	X	X	X	X	X	X	
4	X	X		X	X		X
5	X	X	X			X	
6	X		X			X	
7	X						
8	X		X			X	X
9	X	X	X				X
10							X
11	X	X	X				X
12					X		
13	X	X				X	
14		X			X		
15	X			X		X	
16						X	X
17	X	X					X
18	X		X	X		X	
19	X	X					X
20		X				X	X
21					X		
22	X						
23			X	X			
24	X	X		X	X	X	
25	X	X					
26	X			X	X	X	X
27	X			X	X		
28		X				X	
29	X	X	X				

23.6 million international tourists in 2009 (Tourism Malaysia, 2010), although lack of disaggregation means the number of dive tourists is unknown. Using the number of dive locations and information in specialist dive guidebooks (see Jackson, 2002; Svrcula, 2004) as proxies, dive tourists are likely to be a significant proportion of international arrivals. Two of Malaysia's major dive locations were used in this research: Sipadan (Sabah) and the Perhentians (peninsula Malaysia).

Perhentian

"Perhentian" comprises two main islands (Perhentian Besar & Perhentian Kecil) and several uninhabited islands, 20 km off the coast of peninsula Malaysia. These coastal inshore islands have shallow coral reefs up to 20 m deep and contain the usual variety of coral species in average condition (Coral Cay Conservation, 2003). The diving is safe and sheltered with few hazards, but seasonal monsoons prevent year-round diving (although suitable in June–August, corresponding with the main European holidays). The location is Malaysia's largest dive training area (regarding new diver training certifications; e.g., PADI Open Water).

Perhentian attracts backpackers (Hampton, 1998) who learn to dive there, rather than being a dive destination per se like Sipadan. The local population of 1,500 reside largely in the main *kampung* (village) located on Perhentian Kecil. Tourist accommodation is simple wooden chalets although larger resorts are being constructed. Tourists generally require just accommodation (rather than packages), resulting in many independent restaurants on the main beaches. Dive operators (eight in

ıentian	Community Development
X	
X	
X	
X	
X	
X	
X	
X	

ecies in average condition
, 2003). The diving is safe
azards, but seasonal mon-
l diving (although suitable
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ıodation (rather than pack-
y independent restaurants
Dive operators (eight in

2009) are mainly independent of the accommodation providers.

Sipadan

Sipadan is considered one of the best dive sites in the world, often appearing in top 10 lists. It is a 12-hectare oceanic island 40 km off Sabah. The island comprises coralline limestone grown on a former volcanic pinnacle, with a sizeable 600-m drop-off to the ocean bed. Sipadan is famous for its abundant turtles and schooling barracuda as well as sharks, rays, and prolific small creatures such as crustaceans and vividly colored nudibranchs (Garrod & Gössling, 2008; Musa, 2002)—a biodiversity "hot-spot" with high numbers of differing species. Tourists are generally experienced divers on inclusive resort dive packages. Newer dive operators offer inexpensive dive training for backpackers, suggesting increasing diversity in the market. Diving is limited by daily permit (120 per day issued by the Sabah Parks department).

Sipadan emerged as a dive site in the 1990s with basic accommodation. By 1998, six operators serviced around 360 divers a day (Musa, 2002), but following concerns about increasing environmental pressures, the Malaysian government removed the dive operators in 2004, allowing day visits only. Most operators relocated to Mabul island: 25 minutes away by speedboat. Mabul is 25 hectares, with 10 dive operators by 2009. Three of these are large, established operations, while the remainder cater for backpackers, and all offer "all-inclusive" dive/accommodation packages at different prices. Previously Mabul was inhabited by former refugees from the Philippines and *Bajau Laut* (sea people), with an estimated population of over 2,000. The resorts cover most of the land and some sea area with luxury accommodation built on wooden stilts.

Common Issues, Stresses, and Dynamics

Both destinations share some common issues: the most obvious being the pressure upon the natural environment from tourism. Dive tourism is predicated upon the underwater environment of the coral reefs, particularly Sipadan. For the Perhentians, the reef's condition is arguably of secondary importance economically since most tourists are learning to dive and typically concentrate on maintaining buoyancy rather than observing reef quality, unlike Sipadan's more experienced divers. This equates with other forms of tourism, where different levels of experience affect tourists' perceptions of the environment (Fakeye & Crompton, 1991).

Both locations have some statutory environmental protection. Sipadan is proposed to be a marine protected area (under Sabah Parks, a state organization), and the Perhentians lie within a marine park (under the national Marine Parks Department). Despite this they share some common environmental stresses including: physical damage to corals from divers and snorkelers; and water pollution (particularly fecal matter from septic tanks in the Perhentians and sewage from the Mabul *kampung*) and garbage. In the Perhentians, the local government provides floating garbage platforms that are emptied periodically and the garbage taken to the mainland. Mabul's dive operators cooperate in a local zoning system to collect garbage to be shipped off-island.

Both destinations have problems with diver overcrowding. At Sipadan, divers crowd the iconic Barracuda Point and in the Perhentians, a nearby shipwreck becomes congested with dive boats and divers. In both cases, the reef is also under pressure from fishing. In the Perhentians, trawlers fish illegally inside the Marine Park. In Sipadan, there is the ongoing loss of commercially valuable fish such as jacks, trevally, and sharks.

Both locations have onshore problems with unplanned (or poorly planned) tourism development. On Perhentian Kecil the local government built two large jetties in 2007, damaging the reef and obscuring one popular dive site. Both islands have insufficient potable water and sewage disposal problems. Accommodation owners use septic tanks on both islands but in Mabul some of the poorest villagers have no sanitation and toilets empty directly into the sea.

Key stakeholders at the sites comprise those at the dive resorts (Mabul), accommodation owners (Perhentian), other tourist service providers (shops, restaurants, Internet cafes, boatmen, and snorkel guides), dive staff, the tourists themselves, and local residents.[1] Politically, in both the key stakeholders include the local government, particularly the District Officer, and official conservation

departments: the national Marine Parks Department, and Sabah Parks, respectively. On the islands themselves, the role of the head of *kampung* is also crucial. In Sipadan, the military are involved (unusually for environmental protection), and both islands have a police presence. Other stakeholders include conservation Nature Conservation Organizations (NGOs) such as Reef Check Malaysia and Coral Cay Conservation in Perhentian, and World Wide Fund for Nature (WWF) Malaysia and the Marine Conservation Society UK near Sipadan.

Results and Discussion

Tables 3 (Perhentian) and 4 (Sipadan) provide an initial synthesis of the semistructured interviews. The tables show four or five stakeholder groups: "Dive Instructors" (Dive Masters and Dive Instructors who instruct and guide dive activities directly); "Dive-related business" (commercial activity related to the dive industry; e.g., dive shops, compressor facilities, and boat owners); "Nondive business" (business-related activity directly involving diving; e.g., hotels, bars, and restaurants); "State employees" (military, government, police, and educationalists—Sipadan only); and "Tourists." During fieldwork we were unable to secure sufficient numbers of interviews with headmen/key local residents to provide meaningful representation, but many of the respondents within the "Nondive business" and "State employees" categories were themselves local residents.

Interviews addressed issues related sustainable development's "three pillars": (economic, societal, and environmental). As noted earlier, our interview approach elicited participants' views on how these three parameters may be affected by tourism development. This minimized interviewer influence and ensured issues presented by the participants were ones that they determined for themselves. Therefore, the results are presented by themes of importance *to the stakeholders*, rather than by sustainable development category as presented in Table 1 (UNWTO indicators). However, Table 2 maps out how each of the concerns in practice relates to the UNWTO indicators.

Economic Indicators

Infrastructure Development. In Perhentian the issue of infrastructural development (roads, airport,

Table 3
Collated Responses (%) From Stakeholder Groups on Sustainability Issues: Perhentian

	Dive Operators ($N=30$)		Dive Businesses ($N=21$)		Nondive Business ($N=7$)		Tourists ($N=12$)	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
1. Infrastructure development	20%	63%	14%	95%	57%	43%		
Environment	3%	40%		43%	14%			
Society	10%	27%	14%	81%	43%	29%		
2. Tourist development numbers	17%	53%	48%	24%	57%	29%		25%
Environment	10%	30%		9%	29%		8%	8%
Society	3%	33%	19%	14%	14%	14%		
3. Tourist development type	10%	37%	10%	48%	29%	43%		8%
Environment		20%		24%		43%		
Society	7%	17%	10%	24%		29%		8%
4. Biodiversity	7%	47%	14%	29%	14%	43%	17%	25%
Economic	27%		10%	5%	43%		8%	
Society	3%	13%		29%				
5. Resources	10%	10%	5%	14%	14%	14%		8%
Economic		6%		5%		86%		
Society		3%	5%		14%	14%		
6. Pollution	6%	70%	14%	43%	43%	29%		50%
Economic	17%	3%	5%		29%	0%		
Society	10%	23%	14%	19%	71%	14%		8%
7. Community development	3%	6%	19%	24%	14%	43%	8%	
Environment					14%			
Economy	3%	3%			14%	28%	8%	

Table 4
Collated Responses (%) From Stakeholder Groups on Sustainability Issues: Sipadan

	Dive Instructor ($N = 23$)		Dive Business ($N = 14$)		Nondive Business ($N = 6$)		Tourists ($N = 6$)		Others ($N = 10$)	
	+ve	−ve	+ve	−ve	+ve	−ve	+ve	−ve	+ve	−ve
1. Infrastructure development	13%	35%	21%	7%	100%	17%			10%	
Environment	4%	26%				17%				
Society	9%	9%	14%	7%	33%	50%				
2. Tourist development numbers	9%		7%		17%			17%		
Environment		4%	7%	7%						
Society		4%						17%		
3. Tourist development type	17%		29%		33%					
Environment	4%	26%		13%						
Society										
4. Biodiversity	26%	39%		14%	17%	17%		17%		
Economic	13%	4%	14%			17%				
Society	4%	4%							10%	
5. Resources	13%				50%	17%			17%	
Economic	4%									
Society										
6. Pollution	70%	65%	57%	86%	33%	83%		33%	10%	20%
Economic	4%									
Society	65%		50%	7%	83%		17%		20%	
7. Community development	13%	26%	14%	14%	66%	50%				20%
Environment		13%			17%					
Economy	4%		29%		33%					

sts—Sipadan only); and
work we were unable to
s of interviews with head-
o provide meaningful rep-
the respondents within the
"State employees" catego-
al residents.
issues related sustainable
ilars": (economic, societal,
noted earlier, our interview
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However, Table 2 maps out
ns in practice relates to the

lopment. In Perhentian the
development (roads, airport,

Business = 7)		Tourists ($N = 12$)	
Negative	Positive	Negative	
43%			
29%			
29%		25%	
	8%	8%	
14%			
43%		8%	
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and jetties) generated most interest and disparate views amongst stakeholders. The jetties are a relatively recent addition to the island, and the most discussed in the interviews, whereas airport and roads are future development possibilities.

The stakeholder group who felt most strongly about the development was the dive business group, where around 95% of the group expressed negative views on the development itself, as well as its implications for the environment and society. Concerns include coral quality where the jetties were built, and increasing rubbish, as well as the adverse impact on water taxis and small boat owners—resulting in local unemployment. The dive instructors also expressed negative views, but less vociferously than the dive business group—possibly as the impact of such developments are further from the dive sites they frequent.

The nondive businesses were broadly positive about the infrastructure developments, seeing them as an opportunity to increase overall tourist numbers and attract nondive tourists. Within this group were small businesses that depended on backpacker tourists as well as larger resort representatives—both views on the positive or negative nature of infrastructure developments being more attractive to businesses likely to gain from nondive tourists. This group saw little link between developments and environmental issues, largely as their businesses do not depend on environmental quality the way the diver stakeholders do, and their societal perspective was largely positive since the developments would enable greater economic growth for a wider range of residents, whereas the current tourist system is small-scale and dive (expatriate) focused.

Interestingly, there were no significant comments from tourists themselves about infrastructure developments, although overall the tourists showed little interest or concern with the wider society and environment they were visiting [the response rate for all issues except pollution (rubbish) were low]. While the numbers interviewed were too small to be representative, it suggests a worrying lack of engagement amongst tourists with the sustainability or complex dynamic of locations that they visit.

At Sipadan there was considerably less concern over specific infrastructure development than at Perhentian, and many comments related to tourist development in general, particularly new buildings at the location. Of the stakeholder groups, the

nondive businesses were, like at Perhentian, the most positive about further tourist development, seeing the benefits to their own profitability as well as employment in the area (societal benefit). Dive instructors were the only other group with clear views, but these were more negative, and focused on likely environmental problems resulting from development. Such problems related to both carrying capacities for tourist dives as well as problems related to rubbish: these points also emerged when considering pollution, tourist numbers/type, and biodiversity. As with the Perhentians, the divers' perspective was more environmentally focused than nondive businesses, which could see wider benefits to the economy and community from development, although for Sipadan, the island's environmental quality itself was less of a concern as a visitor permit system operates, and human populations are some distance from the dive sites.

Tourist Numbers and Type. The only stakeholders who felt broadly positive about increases in tourist numbers on Perhentian were the nondive businesses. This is not surprising since nondive businesses are most likely to benefit economically from this, reflecting their generally positive view towards the impact on society/community arising from more income and jobs at the site. Dive instructors and dive businesses were largely negative towards increased numbers. This is also unsurprising since good quality diving depends on working within carrying capacity (regarding visitor numbers) as well as the perception that additional tourist numbers are likely to come from nondive tourists (e.g., snorkelers) who may have limited appreciation of environmental conservation. Also, as the increased numbers are likely to be up-market resort tourists, this would erode the Perhentians' current attraction for small-scale tourism on which the dive industry depends. The tourist group also expressed the view, along with the dive stakeholders, that increased numbers would be detrimental for the island, which as backpackers would be expected as the experience desired by current visitors is not one of mass- or up-market tourism.

Even though the nondive businesses were broadly positive about increased numbers per se, there was universal concern about how the type of tourists would affect the island, with negative views on the economic, environmental and societal implications. It was recognized that additional tourist numbers were likely to come from regional markets (elsewhere in Asia) whereas most tourists currently are European and Australasian. It was felt that newer groups would be less interested in diving, or aware of the need for environmental protection (of concern to the dive stakeholders), and less likely to spend money locally on smaller businesses (nondive businesses), but remain within their resort hotels. These changes would profoundly affect the site dynamics regarding the priority of environmental preservation of the coral (to attract dive tourists), as well as the interactions between ownership, management, and reinvestment locally, for the many small businesses on which the current dive industry depends.

Unlike Perhentian, tourist numbers and type was an issue less commonly raised by the Sipadan respondents. This may partially be due to it being a longer established destination, as well as the permit system restricting diver numbers. The dive instructors were the most negative stakeholders and were concerned that non-Western divers (who were a growth area) tend to be less strong swimmers, resulting in coral damage from uncontrolled buoyancy. The dive businesses responded positively to the tourist mix on the island, as they may be willing to spend locally and provide income to the community—albeit reflecting concerns about damaged coral expressed by dive instructors. Again, this reflects the self-interest of the stakeholder groups: the dive instructors will operate to capacity limits, based on maximum group sizes and permit availability, so are unlikely to see economic gain from increased tourist numbers. Local businesses are much more likely to benefit as long as the site remains attractive overall and not just because of the attraction of the reef.

Each host community's status is also associated with attitudes to infrastructure development and economic growth. For Perhentian, island society comprises a settled, permanent Malay community, whereas for Sipadan, the host community on nearby Mabul is a more marginal society of *Bajau Laut* and former refugees. As noted earlier, the latter ethnic group often does not have full Malaysian citizenship, or its full entitlements, with issues of low income, little access to education, and insecurity of

land tenure/residence rights. In this context, nondive industry respondents' views on economic development (with little appreciation of environmental implications) are understandable. In other words, given the limited economic development options available in this remote part of Malaysia, economic development (specifically, international dive tourism) is seen as positive whereas interest in the local environment's condition is the trade-off and is less significant. Fabinyi's (2010) work in the nearby Philippines also shows that insecurity of land tenure and local political power (or the lack of) significantly affects local communities' views of tourism and environmental degradation.

Environment

Biodiversity. In Perhentian, the dive instructors were the most vociferous stakeholder group about the impact of tourism development on the environment, followed by the nondive businesses (albeit a small sample size). The dive instructors recognized the paradox of development, noting economic benefits despite likely environmental degradation. The dive businesses were less polarized regarding negative impacts on biodiversity and were equally concerned with environmental degradation as negative societal impacts, specifically the lack of governmental regulation of fishing and turtle egg collection. The lack of regulation was an enduring theme among all Perhentian stakeholders and was prominent in responses relating to infrastructure and tourist numbers, as well as pollution problems (particularly rubbish and sewage).

In Sipadan, biodiversity was of concern to the dive instructors who expressed, on balance, mild negative views to its quality in the future. Most negative comments relating to reef quality discussed diver damage and dynamite fishing. For other groups the issue of biodiversity seemed of little concern. This probably relates to the more stringent reef and site management procedures protecting Sipadan, which seems to reassure respondents.

Stakeholders' views, as well as reflecting self-interest, showed differences between the sites' environmental quality. The coral is in relatively worse condition in the Perhentians and the respondents' perceptions simply reflect that. This is partly because the Perhentians are close to the mainland and reefs are affected by industrial, agricultural, or forestry pollution, and unintended effects from tourism construction on the islands themselves (e.g., jetty developments). In comparison, Sipadan is a remote, oceanic offshore island, and tourism construction has been relocated to Mabul so that its coral condition will be mainly affected by divers and other localized impacts. Additionally, changes over time are more apparent at Perhentian as a developing resort, whereas Sipadan is well established.

Dive instructors in the Perhentians were predominantly expatriates with experience of other reefs in the region, whereas in Sipadan, they were often locals with little comparative experience. This might account for the mixed views of biodiversity among instructors in Sipadan. Additionally, given the protected areas status of Sipadan, the expectations for high-quality coral may be much higher, with respondents reflecting their view relative to this expectation, rather than in relation to reef's quality per se.

The tourists' results were somewhat surprising since in both cases the net view was quite indifferent. For the Perhentians the tourists were mainly backpackers, for whom diving may be a supplementary activity (Hamzah & Hampton, 2008). In comparison, tourists visit Sipadan with diving as their main motivation (Musa, 2002). While this explains indifference in the Perhentians, we would expect that tourists traveling to Sipadan to be positive about the reef and biodiversity. This could be explained by experience expectations—being neither better nor worse than expected—and that promotional material presented the experience realistically.

Energy and Water Resources. Concerning provision of energy/water resources, the nondive businesses had the greatest level of interest in Perhentian and felt very strongly that the lack of such facilities could hinder economic development. This perspective would be expected from this stakeholder group—where the main focus would be desire for overall tourism growth, but not necessarily dive tourism. Beyond this group, there was little enthusiasm or concern for the resource issue, although there were comments about solar and wind power as developmental plans—accounting for a balanced view on the effect of such provision on the environment.

Regarding energy and water resources in Sipadan, responses were largely descriptive of what was available (e.g., generators, water collection, and basic sewage) rather than opinions about whether current or future resource provision was positive or negative.

The difference in interest between the sites could be accounted for in the target market for new tourism in Perhentian: the nondive tourists will have higher expectations of utilities available: hence the anxiety expressed by the dive businesses whose economic growth depends on this group.

Pollution. In Perhentian pollution was of great concern to all stakeholders, principally relating to sewage and solid waste disposal. Again, dive instructors were most vocal in their negativity over environmental pollution, followed by the dive businesses. Nondive businesses saw improvements regarding pollution: possibly the perspective from dive businesses related to the marine environment's quality and the nondive businesses to the terrestrial landscape, resulting in differing perspectives of impact. Regarding societal impact, dive instructors and businesses were negative on balance, citing government inaction in reducing the problems of, particularly, garbage disposal and the floating platforms. However, nondive businesses saw opportunities for community involvement through organized beach clean-ups and stakeholders working together to remove litter rather than waiting for government intervention. Garbage was the single issue that tourists felt most strongly about: possibly as their expectations were of a pristine tropical environment.

Pollution was also a predominant issue in Sipadan. Interestingly, dive instructors seemed to have both positive and negative views of the pollution levels: while recognizing issues of poor sewage control and rubbish, there was a general impression that the latter had improved in recent years as community/NGO-organized beach clean-up events were held. These brought the community together and helped to educate locals and tourists—hence the high positive score on societal benefit. Unlike Perhentian, there were few comments suggesting that such issues were a governmental problem—instead, community action was portrayed positively. Land-based businesses were far more negative about environmental problems caused by rubbish and sewage—these issues being more obvious to them than the dive instructors. Problems of pollution, and rubbish in particular, were the one issue that both tourists and locals perceived as a problem—possibly because, as with the land-based businesses, it is a highly visible form of degradation. However there was little relation noted between environmental degradation and economic development: possibly the lure of diving at Sipadan sufficiently compensates for the poor terrestrial environment.

Community and Society

In Perhentian this category proffered the least reaction of all categories investigated, particularly from dive instructors and dive businesses, where comments were relatively few as were mentions by tourists. This may be because the stakeholders comprise many expatriates and the tourist functions relate to the marine, rather than terrestrial/village environments. Nondive businesses were more vocal with negative feelings towards the societal changes tourism development brings. Some advantages were offered regarding international tourists (mainly opportunities to speak English) but concerns were expressed about differing attitudes towards alcohol and tourist dress codes compared with the local Muslim population, which would become more obvious with increased tourist numbers.

Throughout the interviews the roles of government and large business were frequently mentioned—whether relating to tourist numbers/type, management of the environment, health and welfare of the population, or infrastructure development. Many of the negative comments referred to the imposition of changes by an outside body (often termed "they" by respondents). It was clear that many respondents in all categories felt powerless to influence proposed changes. This was particularly prevalent for infrastructure development but also clearly indicated in the expansion of different tourism markets by larger resort hotels. This sense of powerlessness prevailed throughout —although there were small-scale examples of community involvement—particularly relating to beach clean-ups, which were organized by dive groups and nondive businesses. This finding echoes other research on power/powerlessness in host communities (Hampton, 2005).

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In Sipadan there was greater engagement observed in stakeholder responses on community development compared to Perhentian. Nondive businesses were the stakeholder group most positive about community aspects arising from tourism, not on the grounds of maintaining community but on an economic basis, seeing opportunities to stage local dances at resorts. However, negatively towards development was expressed by this group, as well as by dive instructors and locals, arising from the differing cultures: the lack of understanding of Islamic cultures by international visitors—such as attitudes towards dress and alcohol. However, some positive aspects to the community were recognized including greater respect for the environment (particularly not littering).

Conclusions

We have argued that within host tourism communities, attitudes are heterogeneous and differ according to location, stakeholder perspectives (knowledge of issue, personal gain, or loss relating to issue), as well as the possibility of cultural distinctions and differences in perspective. Concerning this article's key objective—the evaluation of stakeholder perspectives on sustainable development—Tables 3 and 4 and the ensuing discussion have identified differing trends in interest and attitudes to various aspects of sustainability by different stakeholder groups. As was expected, those most knowledgeable and indirect contact with the marine environment, the dive instructors, had the strongest and most polarized views, and in many cases identified the links between environment, society, and development. Nondive businesses showed more engagement with the impact of economic development, rather than necessarily relating it to the quality of the environment. Tourists, as the key consumer of services, were the most perplexing in terms of their indifference, but this could relate to choice: if the dive experience (and associated services) fails to meet their cluster of expectations, they can choose not to visit again. This has differing implications for each site regarding the state of the underwater environment. The article demonstrates one of the basic tenets of Social Exchange: namely individuals/groups' perspectives will be influenced by the costs and benefits to them of a particular situation.

Interestingly, the two sites present differing priorities regarding the environment, as well as differing levels of tourism maturity and stakeholder power. Clearly Sipadan has a special environmental value that has been recognized by government, so that regulation and practical measures exist to protect it—even at the possible expense of economic growth (perversely such scarcity may increase tourists' willingness to pay to visit, resulting in net income growth with lower visitor numbers). Sipadan is also an established destination and stakeholder interactions are relatively stable. Alternatively, in Perhentian there is considerable change, with those currently dominating the tourist system (dive instructors, dive businesses, and small businesses) risking losing out as economic development takes hold, with more up-market resorts. There was a clear feeling of low power and influence regarding the island's development (whether type of tourism or infrastructure development) and frustration at the lack of community-level involvement.

The main limitation of the research was that, although covering multiple stakeholder groups, it was unable to comprehensively cover all groups equally (particularly local residents, the tourism stakeholder group most researched to date using the Social Exchange Theory). However, there are opportunities for further research on sustainability and dive tourism using this methodology, such as comparative work within Southeast Asia and elsewhere as well as the application of the methods used here for other environmentally dependent tourism systems.

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Note

[1]This latter group is more heterogeneous on Mabul and includes people at the margins of the state such as the *Bajau Laut* and the former Filipino refugees who lack national identity documents and so forgo many of the entitlements of full Malaysian citizens, such as access to free primary schooling.

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