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Regional Spotlight

Climate change and peak oil—two large-scale disruptions likely to adversely affect long-term tourism growth in the Asia Pacific



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ABSTRACT

Climate change and peak oil are likely to have a significant impact on future tourism growth in the Asia Pacific region. Dealing with these issues and the policies and strategies required for mitigation and adaptation need to be given far greater attention by the tourism industry and the public sector than has hitherto been the case. Existing approaches based on crisis and disaster management may be inadequate and a new approach to deal with shocks of this nature is required. This regional spotlight suggests a new approach based on the concept of disruption which is defined as an event that causes substantial and long-term change in the structure of the tourism industry.

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1. Introduction

Peak oil and climate change have the potential to cause significant disruptions to the projection of tourism growth in the Asia Pacific region. Disruptions can be defined as events that cause a structural shock to the tourism system, through impacts on the demand side, the supply side, or both. They may be generated by natural events, human interventions, or a combination of both. Disruptions may be of a short or long duration, generate little or substantial long-term impacts, and have the potential to cause significant changes to the structure and operation of the tourism system in the affected area. Defined in this way, the term *disruption* has a broader meaning than the more commonly used terms *crisis* and *disaster*, which are often used interchangeably to describe unpredictable or unanticipated shocks to the tourism system.

The ability of the tourism industry to recover from relatively short-term disruptions such as those resulting from the SARS (severe acute respiratory syndrome) outbreak in 2003, the 2004 Indian Ocean tsunami, the global financial crisis (GFC) of 2007–08 and the 2011 Japanese tsunami is well understood. The industry is generally able to deal with some, but not all slow-moving disruptions that are capable of generating significant structural change, such as the information technology revolution and the growth of the low-cost carriers over the last two decades. The industry is, however, less well-equipped to deal with other structural disruptions that may not begin to generate serious impacts until well

into the future. This regional spotlight will focus specifically on peak oil and climate change, and briefly examine the long-term disruption they are likely to cause to forecast growth in the Asia Pacific region. Successive decades of rapid tourism growth in the Asia Pacific region have encouraged the tourism industry and national governments to regard long-term growth as a given. Past success is, however, not always an accurate predictor of future success. As a consequence, there is a pressing need to commence deliberations on the potential long-term impacts of the impending disruptions identified in this regional spotlight, as well as the possible responses to them. An understanding of this nature is essential if the industry is to firstly adapt to the disruptions it is likely to encounter in the future and secondly provide a more effective platform to service future growth.

As with any type of consumer product, the future demand for travel and tourism will be governed by economic forces centred on supply and demand, including the price of holidays, consumers' disposable income, political factors and, importantly, environmental factors. The potential for significant growth in the cost of oil (Becken, 2008, 2011) and future disruptions caused by climate change (Gössling, Scott, Hall, Ceron, & Dubois, 2012; Prideaux, Mc Kercher, & McNamara, 2013) represent two long-term structural problems that are likely to generate major adverse impacts, on a global basis as well in the Asia Pacific. However, due to its size (two continents, two oceans and numerous islands), the vast distances involved, and the spectrum of economic development that ranges from some of the world's poorest countries to some of its richest, the response of many countries in the region will necessarily differ to those developed in Europe, Africa and the Americas. To deal effectively with these disruptions, policy makers

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and the tourism industry in the Asia Pacific region need to develop an understanding of the potential scale and impact of the disruptions caused by drivers such as peak oil and climate change, develop estimates of how consumer markets will respond and incorporate these understandings into planning the region's future infrastructure needs.

2. Regional growth trends

With the Asia Pacific's share of global GDP predicted to rise from 28% in 2010 to 44% in 2035 (Lee & Park, 2013), demand for travel to, from and within the region is expected to grow rapidly. The United Nations World Tourism Organisation (UNWTO, 2011) has forecast that arrivals to countries in the Asia Pacific region will increase from 204 million in 2010 to 535 million by 2030. During the same time period, departures from the countries of the Asia Pacific region are forecast to rise from 204.5 million to 541 million. In both cases, the majority of trips will be inter-regional (83% of arrivals and 82% of departures by 2030). The UNWTO's growth forecasts are reflected in forward orders for new airliners. Boeing (2012), for example, expects that by 2030 the number of commercial passenger aircraft operating in the Asia Pacific will grow to 13,480, a 306% increase from 2010. Ideally, the new infrastructure required to satisfy projected growth should include provision for responding to the types of disruption flagged in this spotlight article.

3. The nature of long-term disruptions

Analysis of UNWTO (2011) tourism forecasts shows a near linear growth trend that assumes future disruptions of the nature of those encountered in the past will be dealt within a manner that produces rapid recovery. Looking backwards from 2013, this view appears to be supported, with long-term growth trends in the Asia Pacific being consistent, sustained and resilient, with factors such as the GFC and recent problems in the Euro zone having little impact on the overall upward trends of tourism arrivals and departures. Even specific disruptions such as the 2004 Indian Ocean tsunami and repeated disruptions in Thailand including extensive flooding in 2011 and ongoing political tensions in 2005–2006, 2008 and 2010 appear to have done little to dampen long-term growth in the destinations involved. This well-established pattern of recovery assumes, however, that once infrastructure is restored or post-event marketing has resumed, pre-event growth patterns will re-emerge. Where a major disruption results in a fundamental change to the manner in which a particular tourism system functions, a new equilibrium position may emerge with demand and supply relationships that are significantly different from those that existed in the superseded system (Prideaux, 2009). When a disruption causes a fundamental, system-wide change, recovery of the nature that has occurred in the past may not be possible.

Recent growth in the Asia Pacific region coincided with an era when fuel was relatively cheap and there was a high public-sector tolerance for increasing global CO₂. In the future, the disruptions to the tourism industry that will be caused by increases in fuel prices and greenhouse-gas emissions will need to be managed by the industry within a public-sector policy framework that will be restructured to achieve lower levels of atmospheric greenhouse gas. If the tourism industry fails to engage with the public sector in pre-disruption consultations, it will lose important opportunities to influence policy.

4. Peak oil

The global supply of oil is finite, and the point at which global output peaks and then begins to decline is generally referred to as 'peak oil'. While there is considerable debate about the timing of peak oil, there is almost no dispute over its inevitability (Becken, 2008). As in any commodity market, oil prices will continue to increase as the quantity demanded exceeds the quantity supplied. Given that much of the increased demand for oil is being driven by economic growth in China, India and other emerging nations (International Energy Agency, 2011), it is unlikely that demand will plateau in the near future.

As the price of aviation fuel continues to increase in response to further growth in demand and increasing scarcity of reserves, the cost of air travel will increase significantly (Becken, 2008). Despite the enhanced fuel efficiency of the latest generation of commercial airplanes (Boeing 787 Dreamliner and the Airbus 350), the cost of fuel as a percentage of airline operating costs, currently averaging about 30%, will continue to rise (CAPA, 2012), reflecting past patterns of increase. In 2001, fuel costs across the globe averaged 13.2% of airline operating costs, rising to 33.2% at the height of the 2007–08 fuel price spikes.

A report by BP forecast that in the period 2013–2030, demand for energy, including oil, will increase by 36%. The report optimistically concluded that 'increased demand can be met as long as competition is present to drive completion, unlock resources and encourage efficiency' (BP, 2013, p. 5). Other sources (e.g. Ragnarsdóttir, Sverdrup, & Koca, 2012) are less optimistic, particularly in relation to oil. Oil production has remained relatively static since 2004, although this may change in the near future as US production of oil extracted from shale increases significantly. In Asia, the demand for oil imports is expected to increase from 11 million barrels per day in 2011 to 31 million barrels per day in 2035, placing great pressure on demand (Lee & Park, 2013).

From a supply-side perspective, the major problems confronted by oil companies are locating new sources of oil and developing the infrastructure to bring these into production. New supplies are being found but in unconventional forms, including oil shale, oil sands, presalt deepwater and so-called 'tight oil' which can only be obtained through a process known as 'fracking'. While new discoveries (in Australia and Madagascar, for example) and improved recovery technologies will act as moderating factors on price, the growing demand for oil leads to the unavoidable conclusion that oil prices are likely to continue to rise into the foreseeable future.

As oil prices increase, airlines will be forced to respond by adding fuel surcharges to offset increased costs. This will have the effect of reducing the attractiveness of air as a means of vacation transport. While the cost of travel by all transport modes will increase, the actual degree of impact will depend on a combination of factors including the elasticity of demand for travel, the willingness of consumers to substitute short-haul for long-haul travel, and the propensity for consumers to substitute international holidays with domestic holidays. The impact of the spike in oil prices in 2007/2008 (Hamilton, 2009) is an example of how closely the demand for tourism is tied to the price of air travel. Demand fell as the price of fuel increased and recovered when the price of fuel later returned to pre spike levels. The actual timing of the structural disruption caused by peak oil is unclear and will depend on external factors, such as the growth of the international economy, as well as oil-related issues such as the introduction of biofuels, the cost of recovering oil in difficult-to-access reserves, the potential for new oil-replacement technologies (such as hydrogen), and how rapidly consumers respond to price rises.

The response by consumers to increases in the cost of air travel will have significant implications for all aspects of the tourism

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