COMMUNITIES LIVING WITH HAZARDS

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5

Tourism, disasters and vulnerability

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"Like a ticking time-bomb, the tourism industry represents an enormous catastrophic potential" (Drabek, 1994, p. 25).

The main objectives of this chapter are: to describe some of the natural and anthropogenic hazards which have an impact of the tourism industry in tropical coastal areas; and to highlight the importance of vulnerability reduction to assist communities to cope with all potential hazards to their livelihoods. The discussion takes a global view of hazards and vulnerability while pointing out specific aspects of vulnerability and the exposure of tourism destinations in the Asia-Pacific region. The chapter takes a general view of hazards and vulnerability issues related to tourism.

Early on the morning of 17 January 1995 an earthquake centred on Awaji Island, 20 kilometres off the coast of Japan, devastated the city of Kobe and other parts of the densely populated Hanshin region. The quake lasted just fourteen seconds, and there were no warnings. The earthquake was Japan's worst since 1923, claiming more than 6,400 lives and leaving more than 300,000 people homeless. The damage to homes, buildings, and infrastructure in the area was a colossal US$150 billion. In the longer term tourist visitor numbers were substantially reduced, negatively impacting on the tourism sector (Kippo News, 1996). The government was criticized for its slow response in the aftermath of the earthquake and later acknowledged serious flaws in the country's emergency management system.

This event illustrates the following pertinent points:

- Despite the recognized vulnerability and exposure of many parts of Japan to massive seismic activity, this, one of the most technologically advanced and economically wealthy countries of the world, was poorly equipped to respond to this catastrophe;
- Insured versus total economic losses illustrated an underinsured private market;
- The structural instability of vast areas of ground floor residential accommodation only became evident after the earthquake had killed

many older residents who favoured ground level access because of their limited physical motor skills, building codes have since undergone significant revision to remedy this failure;

- The preparedness of emergency assistance teams and the coordination of response mechanisms (emergency relief, medical facilities, food, water shelter etc.) were critical to the saving of lives in the immediate aftermath.

The example of the Kobe disaster is used here to illustrate a likely and plausible outcome (conceptually, not literally) of the impact of a major natural hazard in any number of large tropical coastal tourism areas throughout the world. The potential for a major crisis due to a single natural hazard, compounded by anthropogenic inefficiencies, thus causing significant loss of life and property, has a high probability. In the case of Kobe, the long-term response of the Japanese authorities has been to strengthen all aspects of disaster planning and risk management in Japan, not just in vulnerable seismic zones. In addition, community representatives now actively participate in the policy and planning processes.

Unfortunately, human societies have a tendency to act curatively to catastrophic events rather than employing a preventive approach, using disaster as the primary incentive to policy change, rather than proactively planning for future uncertainties. This chapter therefore argues for the substantive strengthening of proactive disaster planning and risk management for tourism in tropical coastal areas.

Disasters for the general observer are usually referenced by location, hazard agent, and time, with the focus on the hazard agent in the case of natural disasters. The perception communicated, and therefore the dominant paradigm, is that disasters are caused by hazards. This has been a traditional geographers' perspective (Salter, 1995). Heathcote (1979) in a description of natural disasters in Australia, focuses on the extreme event, avoiding any mention of vulnerability, and describing risk in terms of the quantification of probability and consequence; "... [disasters are] extreme geophysical events greatly exceeding normal human expectations in terms of their magnitude or frequency, and causing significant material damage to man (sic) and his works with possible loss of life" (Heathcote, 1979, p. 3).

There is a vast range of potential hazards that can have significant negative impacts on communities, tourists, and businesses in coastal tropical areas including those listed in Table 5.1.

Table 5.1 Hazards to tourism in tropical coastal areas

Atmospheric	Earth	Biological	Human
Tropical cyclones	Landslides	Human epidemics	Industrial accidents
Tornadoes	Earthquakes	Plant epidemics	Transport accidents
Storm surges	Tsunamis	Animal epidemics	Crime
Floods	Volcanoes	Plagues	Political conflicts
Frosts	Erosion	Bush fires	Structure failures
Droughts	Ground failure		Structure fire
Severe storms			Contamination

Source: After Granger (2000, p. 25).

Although the tourism industry represents a disaster vulnerability of catastrophic potential, the situation need not worsen. The industry needs to respond proactively to a rapidly expanding vulnerability, and failure to do so will keep an expanding tourist population at risk (Drabek, 1994). The costs of settling liability costs, together with "the marketing costs of offsetting customer ill will" (Drabek, 1994, p. 88) after a disaster or crisis, are massive compared to the minimal costs of investment in disaster planning and tourism risk management. Recent global crises that have had a massive impact on the tourism industry in virtually all parts of the world have provided impetus for the state of disaster planning and risk management for the tourism industry to improve greatly in the recent past. Clearly, the 'do nothing' scenario is not an option.

Books, articles, media coverage, international meetings, specialist committees and other formal and informal groups representing many aspects of the tourism industry planning and management fraternity, have come to the fore in recent years to support the development of better, more efficient ways of coping with disaster and uncertainty in the future. The World Tourism Organization (WTO), the World Travel and Tourism Council (WTTC) and others at an international level, have led the way in recognizing the need to plan for catastrophe in the tourism industry, now, more than ever before in the history of tourism (WTO, 2001).

Natural and Anthropogenic Disasters

In our current world of uncertainty, it is all but certain that more disasters will be faced in the future in terms of frequency and impact (Quarantelli,

1999), due primarily to two worldwide social trends: industrialization and urbanization. Quarantelli argues that if the right policies and measures are put in place, "the future will not be the past revisited nor will it be only the present repeated" (Quarantelli, 1999, p. 9). There exists a very real sense of urgency to ensure much is learnt from recent disasters, and that the threat and impacts of repeat events of an escalating scale will be minimised or even avoided. The tourism industry has responded to this need, including the publication of a variety of disaster and risk management publications (WTO, 2001; Glaesser, 2003; and Wilks & Moore, 2003).

An important point to understanding why disasters and crises occur is that "it is not only natural events that cause them" (Blaikie et al., 1994, p. 9), but rather, they are also the product of the social, political, and economic environment because of the way in which disasters affect social structures, the people, communities, and their livelihoods that are destroyed or damaged. As Blaikie points out, there is often too much emphasis placed on doing something about the natural hazards themselves, "and not nearly enough on the social environment and its processes" (Blaikie et al., 1994 p. 9). Similarly, Mileti (1999) points out that in the United States, short-sighted and narrow conceptions of the human relationship to the natural environment account for the nation's failure to reduce the way in which natural disasters result in major catastrophic events.

Natural disasters are also often thought to be one of the major instruments of catastrophic events. While this is true to some extent, statistically, in the nine decades 1900 to 1990 (using the death toll as an indicator), the ratio of deaths from natural disasters reported was less than 22% of the total. Civil strife accounted for 48.6% and famine a further 39.1% (Office of Foreign Disaster Assistance, 1990). The economic (and insured) costs of natural disasters are continuing to escalate alarmingly. Natural disasters, of which the major proportion was weather-related catastrophes, cost the world over $60 billion in 2003, up from around $55 billion in 2002 (United Nations Environment Program, 2003).

Tourists are generally unfamiliar with many and often all of the places they visit, particularly with respect to potential hazards, and even more particularly with respect to natural hazards (Kuehlbrandt, 2000). The predilection of tourists for potentially hazardous sites, directly on the waterfront, or precipice with the best views or other scenically spectacular locations, resort hotels on the beachfront etc., places tourists amongst the most vulnerable of the entire community, alongside the old and infirm. Neither the tourism businesses nor the host community wish to frighten away visitors, with unnecessary warnings of pending catastrophe. There exists a need and responsibility, shared by local authorities and the goods

and services providers themselves, to adequately appraise visitors "of both potential dangers [of natural disasters] and appropriate life-saving actions" (Murphy & Bayley, 1989, p. 38). Safety drills on air and sea transportation services are commonplace, but the dangers of the impacts of extreme weather are not commonly delivered in an organized manner to tourists in tropical coastal areas.

This paradox of not wishing to promote a potential danger for fear of a negative response from visitors (lowering arrivals numbers for instance) while at the same time not wishing to be irresponsible in terms of safety and preparedness, is all too common to tourism service providers in tropical coastal areas. Issuing disaster preparedness and response information to clients does not always have negative connotations. A survey of backpackers undertaken in Cairns, Australia (Kuelhlbrandt, 2000) indicated a high level of interest in these young tourists actually having the opportunity to physically experience the onset of a cyclone, despite an extremely low level of understanding of possible consequences, response actions, evacuation and procedures.

Disasters, or at least potential disasters, can have an 'attraction' value, but this is rarely part of marketing campaigns apart from certain extreme adventure travel experiences designed for a small but important niche market. Murphy and Bayley (1989) go even further, suggesting that natural disasters can be positive free advertising.

> Media exposure and consequent public awareness would usually have cost the tourist industry vast sums under normal circumstances, but if it can capitalize on this free, sensational exposure it can increase a flow of visitors and revenue, that, in turn, can facilitate recovery and lead to a better landscape in the aftermath of a disaster (Murphy & Bayley, 1989, p. 46).

This would surely only occur in the most exceptional of circumstances.

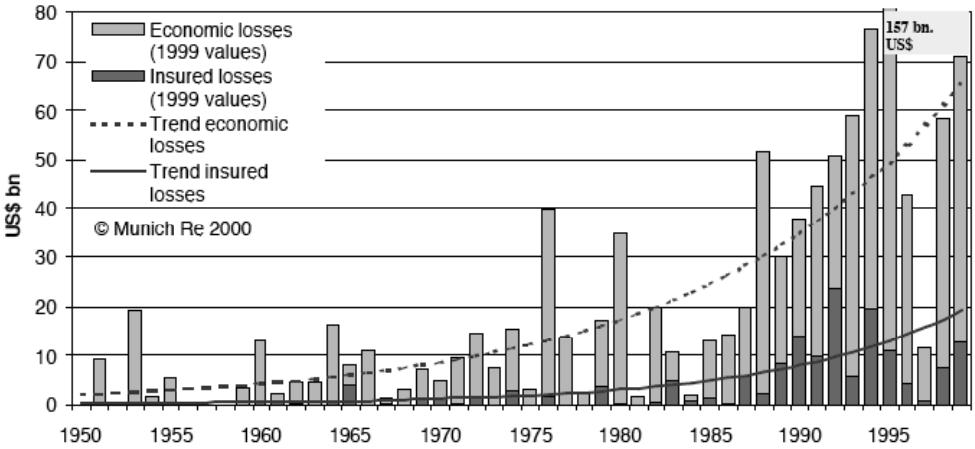

Figure 5.1 'Great' natural disasters 1950-1999
Source: Munich Re, NatCat Service (2000).

Tourism is affected by the largest natural disasters (great natural catastrophes or 'NatCats' as the insurance industry refers to them) even when the impacts are indirect, or the catastrophe occurs in apparently distant geographic locations. Natural catastrophes are classed as great if the ability of the region to help itself is distinctly overtaxed, making interregional or international assistance necessary, or when thousands of people are killed, hundreds of thousands are made homeless, or when a country suffers substantial economic losses. Figures 5.1 and 5.2 present the losses caused by great natural catastrophes since 1950. There are between 500 and 700 loss events registered every year around the world (Guha-Sapir, Hargitt & Hoyois, 2004). The tables below show only 'great' natural catastrophes, selected based on monetary and human loss. In 2000, there were ten such events. The vast majority of these massive natural catastrophes had direct and indirect impacts on tourism flows.

The trend line on the Figure 5.2 below shows clearly the alarming trend towards rapidly escalating economic losses from these major events. Insured losses are increasing at a much lower rate, reflecting the ability of primary and re-insurers to accept greater risk and greater potential losses. It can be estimated that this general trend is equally applicable to the tourism industry; rapidly increasing economic losses from natural disasters with a much lower level of increase in insured losses.

There were around 11,000 fatalities from natural catastrophes in 2002. The earthquake in Afghanistan claimed some 2000 lives, halting the meagre domestic and international tourist flows in that country for much of the year.

In 2002, a relatively 'good' year for the insurance industry, insured losses were US$13.5 billion, of which US$11.4 billion were from natural catastrophes (Swiss Re, 2003). Around 39% of global insured losses in 2002 were in Europe, even though more than half of the total number of catastrophic events occurred in Asia, which also suffered 48.4% of total fatalities for 2002 (Swiss Re, 2003).

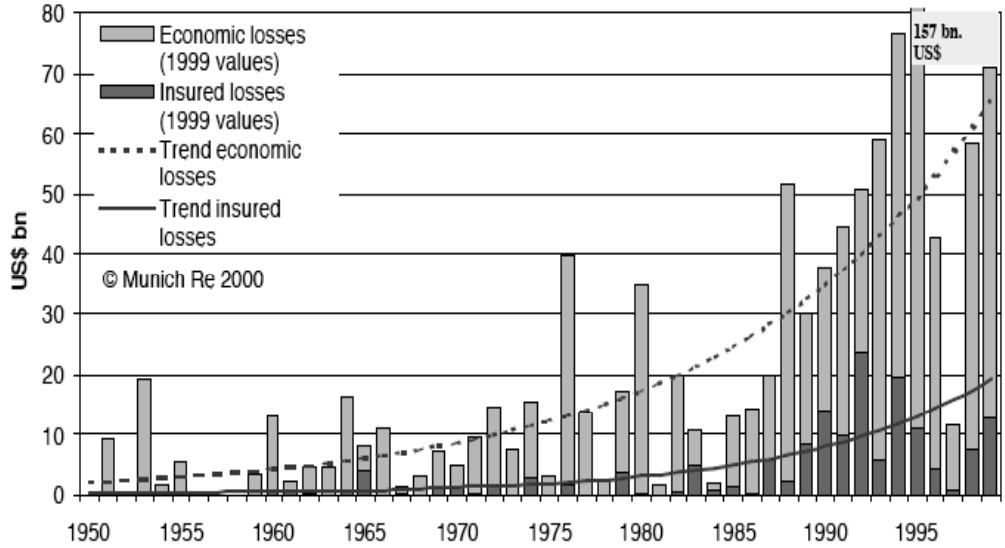

Figure 5.2 Economic and insured losses for 'great' natural catastrophes
Source: Munich Re, NatCat Service, 2000.

In September 2001, terrorism took on a new dimension the world over with the aircraft being flown into the World Trade Center buildings. Insurers have responded by minimizing terrorism exposure (reducing policy conditions, increasing premiums and exclusions), changing the scope of coverage for terrorism-related losses. The USA, Germany and France have introduced new forms of terrorism coverage in which the state carries a substantial share of the loss.

In 2002, the insurance industry registered 13,000 fatalities from man-made disasters, including more than 800 fatalities from terrorist attacks. Unlike 2001 insurers did not have to contend with the scale of major losses from terrorism experienced in that year. The direct targeting of tourists in Bali, Indonesia, (claiming 190 lives) and Djerba, Tunisia in 2002 (19 lives) had devastating effects on their respective local and national economies, and indeed on global tourism figures in the immediate aftermath. The arson attack on a train in India in 2002 (59 lives) caused tourism to slow in the short-term only for India and the region.

Possibly the greatest threat to a stable tourism industry in tropical coastal area in the long-term is the effect of climate change. This phenomenon coupled with the current demographic patterns of change around the world, will have an impact of a dimension that is currently unknown, but is predicted to be significant.

Vulnerability Reduction

The long-term future of the viability of tourism in tropical coastal areas is dependent upon the active development of vulnerability reduction and mitigation measures. These are broadly accepted as the highest impact and most cost-effective mechanisms to reduce losses from catastrophes, the ensuing reconstruction debt, and other adverse consequences (Evans, 1996). Beachfront tourist resorts are especially prevalent examples of the need for effective vulnerability reduction, as are population centres sited at coastal and seismic-risk locations.

The Asian Development Bank (2002) in its poverty reduction initiatives has recognised the vulnerability of communities to a variety of uncertainties that have a significant impact on the livelihoods of those communities. Figure 5.3 below illustrates the assets of a community and the vulnerabilities at risk.

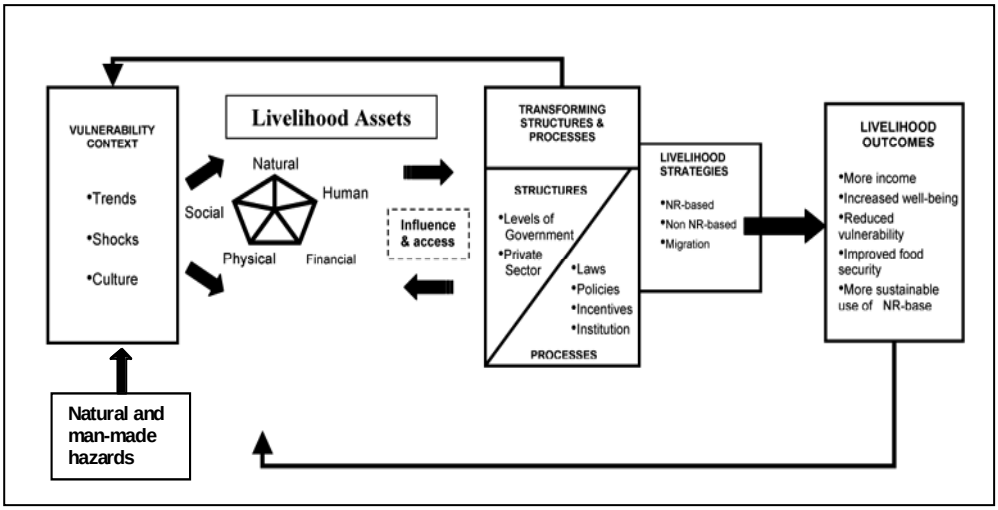

Figure 5.3 Community assets and vulnerability
Source: Adapted from Asian Development Bank 2002

Although the fundamental value of vulnerability reduction to catastrophe-prone coastal tropical areas is not in dispute, the adoption of an effective policy is hampered by complex behavioural, political, and institutional

factors. The following basic principles could initiate the process of establishing a vulnerability reduction approach for tourism facilities in coastal tropical areas at a national and regional level:

- A National Strategy: Vulnerability reduction should become a committed national strategy covering not only the tourism sector, but also all sectors of the economy (a long-term and non-partisan strategy).
- Leadership and Partnership: With the tourism ministry as the lead agency (headed by a cabinet-level chairman), the strategy should be institutionalised through the creation of a council of the nation's leaders from all sectors. This office, with technical and financial support from international development funding agencies, could act as a clearing house serving all sectors, providing best practice information, and monitoring and publishing plans, performance criteria, and results of its activities.
- Education and Training: School curricula at all levels should include specific content covering vulnerability reduction and tourism development. Institutions of higher education should be encouraged to establish departments focusing on the advancement of vulnerability-reduction technology and its effectiveness, in conjunction with natural and anthropogenic hazard mitigation. Tourism schools have a particular responsibility in this regard, but the current situation is not positive. For example, in a recognized authoritative university-level text titled “Tourism Analysis: A Handbook” (Smith, 1995), there is no mention of risk analysis, risk management, disasters, or catastrophic events in the index, and only passing mention of these topics within the text itself.

Any effective strategy to manage disaster risk at tourism destinations must begin with an identification of the hazards and what is vulnerable to them. This involves information on the nature and extent of risk that characterizes a particular location, including information on the nature of particular physical hazards obtained through hazard assessments, as well as information and data on the degree of exposure of businesses, the population, and its infrastructure and built environment to those hazards. In this way, informed decisions can be made on where to invest and how to design sustainable tourism developments that will withstand the impacts of potential disaster events.

Regulatory controls, when developed and implemented with community (stakeholder) approval can protect tourism infrastructure developments and reduce vulnerabilities to natural hazards. Local approval must be stressed.

Top-down regulations are less likely to succeed than those developed with and for stakeholders (Inskeep, 1998).

Simple regulatory measures seen as capable of encouraging vulnerability reduction can be divided into the following categories:

- Non-Structural:
  - Identification of hazard-prone areas and limits on their use;
  - Land-use allocation and control, including building-line distances;
  - Use of incentives;
- Structural:
  - Use of building codes and materials specifications;
  - Retrofitting existing structures;
  - Use of protective devices.

Communities and the families who comprise those communities are especially vulnerable for reasons indicated in the ADB diagram in Figure 5.3 above.

> By vulnerability we mean the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard. It involves a combination of factors that determine the degree to which someone's life and livelihood are put at risk by a discrete and identifiable event in nature or in society (Blaikie et al., 1994, p. 48).

Blaikie's definition is important as it describes vulnerability in terms of people's capacity to avoid, cope with and recover from hazard impact. It illustrates two trends in explaining vulnerability that are reflected in the disaster literature.

> Firstly, the shift in focus away from the hazard event being the primary cause of loss (with people characterised as victims, passive onlookers that are subordinate to the hazard), towards a focus on the human community and people's living conditions, social and economic resources, livelihood patterns and social power. Secondly, it includes a consideration of resilience, which is a more positive (empowering) concept (Berry, 2002, p. 45).

Recognition of the significance of clearly understanding the vulnerability of a business or community is critical to a thorough and comprehensive risk management process. Table 5.2 below is a list of the potential costs that can

assist with further defining where the vulnerabilities lie and their potential consequences.

Table 5.2 Community costs of catastrophic events

Categories of costs to communities of catastrophic events (the list includes direct, indirect, tangible and intangible cost categories)		
Loss of life	Physical suffering	Emotional suffering
Damage to property	Reduced productivity	Degraded environment
Loss of species and habitat	Damaged infrastructure	Weakened economy
Loss of employment	Associated loss to businesses	Increased cost of insurance
Reduced quality of life	Destruction of livelihood	Damaged social structures

Source: Adapted from Department of Emergency Services 2001, p. 4

The World Bank recognizes the potential dangers of ever-swelling urban populations that create conditions for more and worse environmental and social disasters. Of the estimated 511 mega-cities (with population over 1 million) in 2010, most will be within 100 kilometres of the coast, and for the first time, the majority (51.8%) of the world's population will be urban (Jones, 1992). The implications for tourism are widespread, particularly given the primacy or dominance of these large urban conurbations as both cultural centres and transportation hubs for travellers.

Vulnerabilities are therefore increasing. There are more built-up areas for natural and man-made disasters to have a negative impact, particularly those tourism areas developed along the coast. Concentrations of population and infrastructure are increasingly vulnerable to the relatively sudden natural and man-made disaster agents such as tropical storms, hurricanes, earthquakes, forest fires, floods and landslides, explosions, transportation accidents, volcanic eruptions, structural failures, avalanches etc. The more slow-moving and insidious disaster agents of famine, drought, toxic poisonings, air and water pollution, epidemics etc., and other crises such as war, terrorism, riots, sabotage, political unrest, and other hostilities (Quarantelli, 1993) also apply to tourism destinations. Vulnerability reduction is therefore at the very heart of the risk management processes for tourism in coastal tropical areas.

Hazard mitigation measures are working tools that can be used to minimise losses through lowering levels of vulnerability, increasing levels of preparedness, response, and recovery mechanisms, and insurance. Some general steps that can be taken are described below. Insurance, however, is not often understood as a mitigation tool, but rather something that is part of disaster preparedness, the value of which comes into effect in the recovery stage. It is also a potentially valuable tool to encourage vulnerable businesses and communities 'to adopt cost effective measures voluntarily" (Kunreuther, 1996, p. 184). Premium reductions, lower deductibles, and higher limits of

coverage are a few examples where the primary insurers could offer incentives to policyholders. This is an area where surprisingly, given the wealth of information and resources available to insurers and reinsurers, much more could be done by making incentives available to assist businesses and communities help themselves to minimise vulnerability to catastrophic loss.

Steps that can be taken to reduce and weaken the negative effects of the tourism disasters of the future include the following:

- Recognizing disasters as events which affect society with negative social impacts that can be minimized with social policy;
- Moving towards an all-hazards approach away from the distinction between natural and man-made disasters;
- Ensuring that disaster mitigation is given at least equal priority in planning and application as emergency preparedness, response and recovery;
- Integrating disaster planning and risk management strategies to the development planning processes of the social systems involved;
- Addressing both disaster issues and environmental issues concurrently where there are similarities by clarifying their similarities and differences.

For real property (tourism infrastructure, plant and equipment), specific hazard mitigation measures that can be undertaken include the following:

- Hazard mitigation measures and mechanisms such as developing and enforcing building-code regulations;
- Disaster planning through cautious land-use management and the establishment of legal restrictions for building on exposed locations;
- Hazard mapping of vulnerable areas to determine the intensity of risks from all natural hazards (hurricanes, other winds, flooding, earthquakes, etc.), and to use hazard maps to assist in proper land use management;
- For insurers or other hazard experts to conduct (underwriting) assessments of asset and property values, resistance to wind or other hazards, and likelihood of damage (as reflected in probable maximum loss estimates by insurers), based on probability data on the occurrence of such natural disaster events;
- Given the importance of disaster data, additional compilation of event frequencies and estimated probabilities, as well as covariance and correlation studies among regions and between events, to feed into the valuations of property risk.

The above suggested areas for reducing vulnerability and exposure is not comprehensive, but this view from the insurers provides a useful starting point for recognising that understanding vulnerability and exposure to risk is critical to future business and community sustainability and good business practice.

Natural Disasters in Developing Countries

A World Bank report describes natural disasters in the following manner:

> natural disasters are a tragic interruption to the development process. Lives are lost; social networks are disrupted; and capital investments are destroyed. When development plans are laid and disaster strikes, development funds are diverted to the emergency. Additional aid is directed to relief and reconstruction needs to get the country 'back on track' toward economic and social development (Kreimer & Arnold, 2000, p. 12).

In recent years, development agencies including the German bilateral aid organization, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH and the World Bank have recognized the important links between disasters and development. This was inevitable given the disproportionately high costs that developing countries pay for disasters and their impacts. In addition, natural disasters in developing countries can and often do have more disastrous impacts than in developed countries. Freeman (1999) estimates that because of the enormous disparity in the GDP, the per capita cost of natural disasters in relation to GDP in the developing world is 20 times higher than in developed countries. The Centre for Research on the Epidemiology of Disasters (CRED) in Brussels has this figure at a more conservative six times higher than developed countries (Guha-Sapir et al., 2004). Either way, the disparity is significant (see Figure 5.4 below). Figure 5.4 indicates the significance or value of tourism receipts to the overall GDP of countries in the APEC region, which is in some cases, the main industry contributor to GDP.

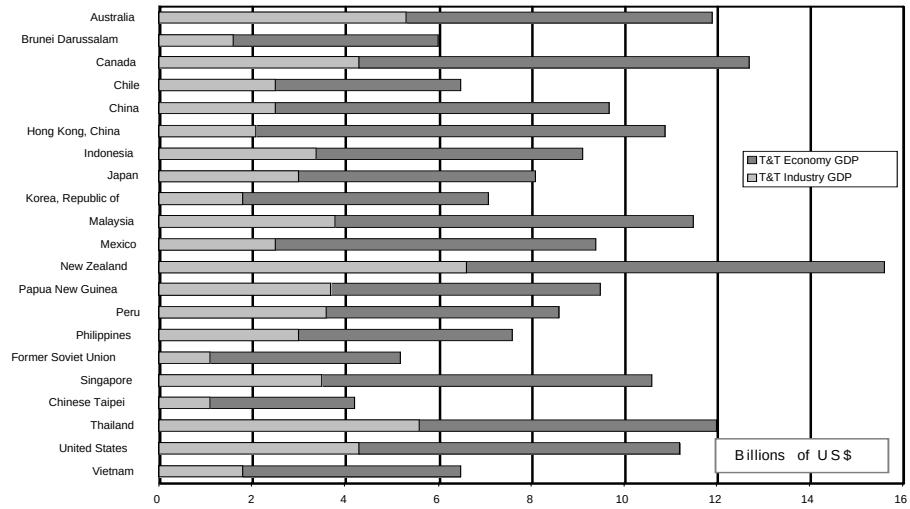

Figure 5.4 **The contribution of the Travel and Tourism (T&T) sector to GDP in APEC countries** Source: WTO, 2002

In GTZ's Technical Cooperation projects, disaster risk management comprises: action (programs, projects and/or measures); and instruments, whose intended impacts are expressly aimed at reducing disaster risk in endangered regions and mitigating the extent of disasters. Disaster risk management is the generic term for the operational areas of risk assessment, disaster prevention and mitigation and disaster preparedness (GTZ, 2003).

Despite the awareness raised by the United Nations' International Decade of Natural Disaster Reduction (IDNDR), disaster risks have continued to accumulate in most developing countries. The vast majority of national and international efforts by bilateral and multi-lateral development agencies remain fundamentally focused on preparedness and response, seen as the most urgent needs. Isolated successful experiences at 'piloting' risk management approaches have however begun to build a substantial body of knowledge, particularly in the Asian region (Kishore, 2003). On a more positive note, Evans (1996) suggests that "the use of mitigation as a primary strategy in facing the consequences of natural disasters is slowly, but increasingly, gaining acceptance in public and private sectors around the world" (p. 5).

Not all views of the decade of work of the IDNDR were as positive, evidenced in a critical editorial in the New Scientist (1989):

> All the aims of the IDNDR will cost money, and, in particular, money for things that appear to have no immediate benefit ... for 10 or 20 years, let alone a century. Add to this the fact that many of the measures that would cut (sic) death toll from disasters will disrupt people's lives, and you have a very good excuse for doing nothing (Anonymous, 1989, p. 2).

This says nothing of the short-term political horizons of most governments in developing countries and their subsequent capacity and willingness to create and pay for long-term strategies to deal with natural catastrophes.

In the Caribbean with its intense coastal tourism developments, the development agencies' responses to assist the region to manage natural hazard risks fall into the following basic categories:

- Hazard mitigation and vulnerability reduction measures adopted prior to a hazard event to optimise protection from damage; and
- Economic mechanisms aimed at pre-financing the repair of the damage caused by disasters (the mechanism of insurance is in this category).

The former can be considered ultimately more efficient than the latter, which does not prevent or minimise the impact of the damage. This distinction is at the heart of cost-effective natural hazard risk management in developing countries.

An important finding of the UN-IDNDR, was that global data sets are missing substantial numbers of disasters at the national level due to deficiencies in international reporting.

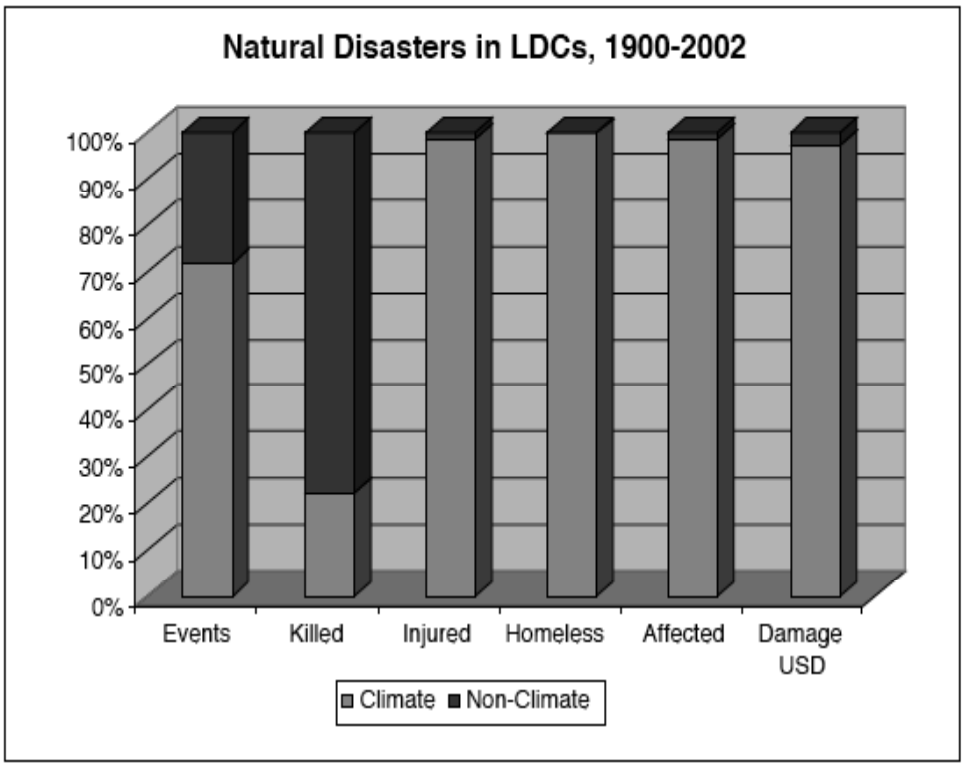

Figure 5.5 **Disaster losses in Asian LDCs** Source: CRED/OFDA database, 2004

National datasets capture a greater proportion of the total losses but most developing countries do not maintain consistent and comparable records. There are immeasurable variations in methods and standards making comparison difficult, if not impossible. Economic losses are inadequately captured and recorded. For instance in Jamaica, of disaster events with more than 10 persons killed and/or 100 persons affected, around 11% of these are not captured at all by international reporting, and for disaster events with less than 10 persons killed and/or less than 100 persons affected, around 84% of these events are not captured at all by international reporting (UNEP, 2003). The figures are similar for Chile, Columbia and many other developing countries.

In the developed world, the insurance companies and national emergency management agencies fill that gap more thoroughly. The insured loss potentials ensure that insurers have a good grasp of the necessary data for modelling and underwriting. Developing countries are well behind in the sharing of risk through insurance.

In 1998, catastrophes claimed the loss of around 50,000 lives, and estimates of economic damage are in the range of US$90 billion, the second highest

financial loss in history (Munich Re, 1998). The rising worldwide costs of catastrophes and disasters can be explained mainly by increasing concentrations of populations and capital, and fragile infrastructure in hazard-prone areas (Linnerooth-Bayer, 1999), particularly in developing countries. Obviously, the hazard-prone coastal tropical areas with concentrations of both tourists and infrastructure development are increasingly vulnerable for the same reasons.

The impacts of natural disasters in coastal tropical areas of developing countries are often devastating, given the reliance on tourism in the overall GDP of many less developed countries (LDCs), particularly the small island states of the Asia-Pacific region. As Figure 5.5 indicates, disaster losses as a percentage of GDP are significantly higher in developing countries, but not as high as Freeman (1999) suggests.

Disaster losses include not only the spectacle of direct impacts reported in the news, such as the loss of life, housing, livelihood, and infrastructure, but also indirect impacts such as the foregone production in utility services, transport, labour supplies, suppliers, or markets. Secondary losses include impacts on such macroeconomic variables as economic growth, balance of payments, public spending, and inflation. The process of recovery from disaster in developing countries is more difficult because of by poverty at the community level, and the lack of emergency resources and strategies at government level. Climate related disasters in the Asian region over the last 100 years account for around 68% of all disaster events, many of which occurred in coastal areas having significant impact on tourism business and disruption. Total economic losses, and those individuals and families affected by natural disasters were climate-related in the vast majority of cases as Figure 5.5 above indicates.

Asia remains the region with the most catastrophes. For example, in 1996, Asia suffered about half the catastrophes registered around the world, with about 70% of the fatalities. The low insurance density in Asia meant the region had only a 6.3% share of the global sum insured (Swiss Re, 1998). The situation is however improving as disaster response and preparedness improves (stockpiling of relief goods, warehouses, contingency planning), and with the increased applications of engineering solutions (dams, embankments, early warning systems etc.). Vulnerability however remains as a central theme to address necessary improvements to integrated, comprehensive risk management.

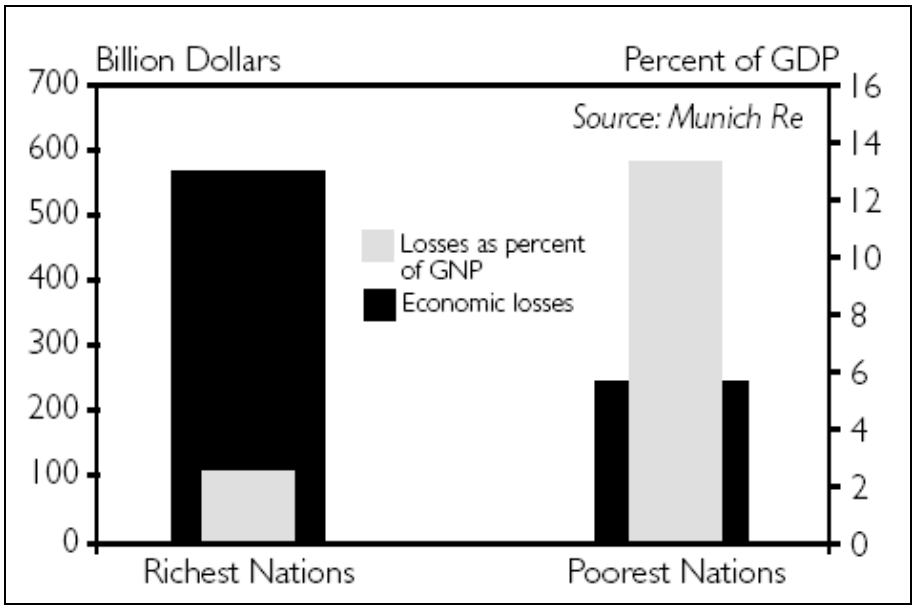

Figure 5.6 Disaster losses, total and as share of GDP, 1985-1999
Source: Munich Re, 1999; Abramovitz, 2001

The strongest demand for insurance worldwide comes from medium-sized businesses and homeowners. Since most developing countries do not have either a substantial middle class (with large numbers of homeowners) or many medium-sized businesses, there is a small natural clientele for insurance, and thus a lack of demand for catastrophe insurance. Although the situation of underinsurance, particularly in Asia, is likely to change considerably in the coming decade, effective risk reduction cannot be carried by insurance alone, and should involve mitigation measures in hazard prone developing countries.

Such measures include land use planning, structural design and construction practices, and disaster warning systems. In addition to employing scientific and technical knowledge, risk reduction may also involve overcoming the socio-economic, institutional and political barriers to the adoption of effective risk reduction strategies and measures in developing countries. Tools have to be developed to assist the very poor to be able to more effectively manage risk of disaster. This includes micro finance mechanisms that can respond to a variety risks and disaster hazards, and that builds social capital and encourages risk mitigation for the very poor. In addition to that, measures may include safety nets and calamity funds, and other informal risk sharing mechanisms. The World Bank and the Asian Development Bank in particular, have in the last five years developed a

strong focus on poverty alleviation in all aspects of their technical assistance and lending programs to developing countries.

Conclusion

Risk management for the tourism industry is an on-going process that is critical to every aspect of business including the viability and sustainability of the support community, the reputation of the destination and its local and national tourism leadership, and to the safety and security of the tourists themselves. Risk is a part of virtually every aspect of the tourism industry from accounting practices, to client satisfaction, and from health and safety needs to terrorism and fraud. It cannot be avoided, and to fail to recognise the value and significance of tourism risk management is perhaps the greatest risk of all.