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Tourists and disasters: lessons from the 26 December 2004 tsunamis

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Abstract The 26 December 2004 tsunamis around the Indian Ocean exposed the vulnerability of many coastal communities, including those serving tourists. To draw conclusions regarding disaster risk reduction for tourism in coastal areas, this study surveyed international tourists who survived the tsunami regarding their perceptions and experiences of the disaster. Semi-structured interviews were completed between January and June 2005 of 55 primary interviewees who were international tourists in locations affected by the tsunami. The qualitative data from the interviews yielded commonalities across four main themes with relevance to disaster risk reduction: information and awareness, warning systems, personal preparation, and livelihoods. Three areas are suggested as topics to highlight for further investigation: the connections between sustainable tourism and disaster vulnerability, the role of tourists in disasters, and disaster risk reduction education.

Keywords Disaster risk reduction · Disaster vulnerability · Livelihoods · Qualitative analysis · Qualitative data · Tourism · Tsunami · Warning

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Introduction

On 26 December 2004, an underwater earthquake off the coast of Aceh, Indonesia led to tsunamis around the Indian Ocean. The subsequent disaster killed over 250,000 people, leaving many more who experienced the tsunami but survived. Numerous studies have examined the devastating effect of the disaster on the lives and livelihoods of people who live in the locations struck by the waves, along with the strategies that they used to survive the tsunami and the aftermath.

For instance, on Simeulue Island, Aceh, oral history passed on from a similar event in 1907 meant that the locals knew to seek high ground immediately after ground shaking which led to nearly complete survival for the island's population on 26 December 2004 (Baird 2005; McAdoo et al. 2006). Despite a high fatality count on India's Andaman and Nicobar Islands, Bishop et al. (2005) and Dybas (2005) describe how local knowledge saved many. Gregg et al. (2006) surveyed Thais in Thailand's tsunami-affected provinces, describing how most did not know how to react to the tsunami's precursors or manifestation. Rigg et al. (2005) report surveys of locals conducted in three Thai tourist resorts struck by the tsunami, covering interviewees' comments on impacts, effects, and recovery.

The tourism aspect of this disaster helped to garner international media attention and to generate significant

disaster relief funding, especially due to the large number of international tourists who were caught in the events. Several resorts were destroyed, thousands of international tourists were killed, and many more survived. Some suffered multiple bereavements, were severely injured, or escaped alive through luck only. In many places, the situation taxed local resources and overwhelmed the capabilities of the diplomats of the tourists' home countries to provide assistance ranging from evacuation home to finding the bodies of loved ones.

Extensive literature exists regarding tourists caught in disasters (e.g. Drabek 1994; Murphy and Bayley 1989) illustrating the challenges facing both people caught in disasters in unfamiliar locations and the locals who must deal with their own needs along with the needs of outsiders. Studies have also highlighted the tourism- and tourist-related concerns related to disaster risk reduction which exacerbated the 26 December 2004 disaster or which made post-disaster efforts more difficult (e.g. Handmer and Choong 2006; Rice 2005; Steckley 2006).

This study supplements such work by reporting on a survey of international tourists who witnessed the tsunami in order to draw conclusions regarding disaster risk reduction efforts for tourists in coastal areas. The next section of this paper details the survey method followed by a section describing the survey results, focusing on qualitative data. The results are divided into four themes with the most relevance to reducing disaster risk, as highlighted by the interviewees: information and awareness, warning, personal preparation, and livelihoods. Finally, some recommendations and discussion provide insights to assist in better managing tourism and disaster risk reduction, especially in coastal locations.

Survey method

Semi-structured interviews were completed between January and June 2005, the months immediately after the tsunami. Verbal interviews were recorded after obtaining permission from the interviewee, but none refused, whilst others provided written testimony with clarifications completed via email. The structured part of the interview consisted of a formal survey form designed to elicit specific and comparable information and data from each interviewee, but each interviewee was permitted to tell the story in their own way, with the interviewer prompting (for verbal interviews) or requesting further information (for written testimony) as needed.

This interview method was designed to recognize and respect that interviewees had survived a potentially traumatic event. The lead questions were open-ended and carefully ordered to give survivors the opportunity to tell their stories to an empathetic and active listener in a conscious effort to try to contribute to the interviewee's healing process. The interviewer deliberately focused on the human story and the interviewee's personal experience at first, requesting details and quantification regarding the waves, warnings, and building damage later in the interview.

The data sought through the formal survey form covered:

- Nature and extent of injuries to survivors.
- Causes and circumstances of fatalities (for example, drowning compared to physical trauma).
- Aspects of human behaviour in response to the tsunami impact.
- Evidence of observable tsunami precursors, such as ground shaking, animal behaviour, and sea retreat.
- Any other warning signs, such as official warning systems or other people's reactions.
- The height, time sequence, succession of peaks and troughs of the incoming waves.
- The speed and extent of wave inundation on land.
- Maximum depths of inundation.
- The extent and types of debris accumulation in the flow.
- Physical damage to structures and the likely cause of the damage.
- Where shaking was experienced, possibilities for distinguishing between earthquake damage and tsunami damage.
- Differences between effects and damage of incoming and retreating waves.
- The presence of tsunami-related non-water hazards such as live wires in the water, or chemical contaminants including oil and petrol.

Three open-ended questions were asked near the end of the interview to elicit thoughts and opinions regarding the experience and how the risk of such disasters might be reduced:

- Is there anything that you wish you had known that might have protected you or others?
- What is the one most important observation, thought, feeling, or concern that you come away with from this experience?
- Do you have any further thoughts not covered by these questions?

The qualitative data obtained in response to these questions, mainly in the form of personal anecdotes, form the core of the material used for this paper.

The interviewees were self-selecting, not a random sample. A series of general press releases and messages to email lists were sent, inviting potential interviewees to contact the researchers. Additionally, newsletters of profes-

sional societies, word-of-mouth with personal contacts, and follow ups with published articles of personal accounts were used. Travel agents were contacted, but were reluctant to assist. Several interviewees were residents of the location, were visiting family, or were local visitors. These surveys are not included in this study which focuses on international tourists.

Out of an original list of 87 primary interviewees, the results of which were published by Spence et al. (2007), this study used 55 primary interviewees who were international tourists (Appendix #1): 34 in-person interviews, either face-to-face or via telephone, and another 21 written accounts. Of the primary interviewees, 34 are male and 21 are female, with ages ranging from twenties to sixties. Most interviewees did not provide their specific age.

Because the interviewees were self-selecting, several principal biases are evident in the sample. First, all interviewees are English speakers with a significant focus on UK residents and UK nationals (Table 1; Appendix #1 does not provide each interviewee's country of residence or nationality to help protect confidentiality). Clearly, only interviewees who survived could be interviewed meaning that reports are biased (see also Spence et al. 2007) towards building types which survived the tsunami or which permitted rapid escape (e.g. concrete structures or open ground floors) and are biased away from building types which did not survive or which did not permit rapid escape (e.g. timber structures or non-open ground floors). Table 2 shows the locations where the interviewees experienced the tsunami (see also Appendix #1).

Survey results and discussion

The interviews with the international tourists demonstrated commonalities in the information and perceptions reported.

Table 1 Resident countries and nationalities of interviewees

Country of residence	Number of interviewees	Nationality	Number of interviewees
Hong Kong	2	Australia	1
Japan	2	Canada	2
South Africa	1	Hong Kong	1
UK	31	Japan	1
USA	3	South Africa	1
Did not identify	16	Sri Lanka	1
		Sweden	1
		UK	38
		USA	3
		Did not identify	6

Table 2 Location where tsunami was witnessed

Location where tsunami was witnessed	Number of interviewees
India, Kerala	1
Malaysia	2
Maldives	4
Sri Lanka, east	2
Sri Lanka, south	7
Sri Lanka, southwest	9
Thailand, Khao Lak	5
Thailand, Phi Phi	7
Thailand, Phuket	15
Thailand, other	3

Common themes from interviews with the most relevance to disaster risk reduction are presented here.

Information and awareness

The most prominent comment from the tourists related to surprise and lack of previous information that a tsunami could occur along with its suddenness and destructive power. Most tourists were on holiday for "3S tourism"—sun, sea, and sand—seeking a relaxing Christmas break on the beach to escape from the northern winter.

The potential destructive power of the sea was not part of their expectations or knowledge, demonstrated by the comment "Curiosity drew me to the beach" (interviewee #42). Interviewee #25 commented "You never think it's going to happen to you". Someone else in her group had suggested that people just take for granted that the sea stays where it normally is. That sentiment was echoed by interviewee #86 in stating her overall feelings: "Total disbelief that such event happened and lucky enough to survive". The speed of onset was also highlighted as being a surprise. Interviewee #75 commented that the time from low water to high water was "faster than you could run".

A few interviewees who were not in places with many casualties or with extensive destruction explained that, after the event, they still did not realise the danger or the consequences of the disaster. A member of interviewee #25's group, who was in a relatively unaffected resort, received 15–20 text messages asking if he was okay or alive and he noted "some morbid interest, others genuinely interested. At the time it didn't feel like that — unreal, but not a disaster or dangerous". Even those in severely affected locations were not always aware of the widespread impacts of the disaster. Interviewee #23 on Phi Phi stated 'That morning none of us had a clue what had happened and that it had affected anyone else." Interviewee #68, also on Phi Phi, noted "The worst thing was, after the tsunami, not knowing what was happening. We didn't have a clue. We didn't even know about Banda Aceh."

This surprise and lack of knowledge further manifested in multiple comments expressing that the lack of information and false information made the tsunami's aftermath more difficult than it might have been or should have been. Interviewee #10 on the Maldives commented, "At 2 AM, high tide was expected, so woke up just to check that no waves were coming. Rumour had it that there will be another tsunami around this time. Nothing happened." Interviewee #1, also on the Maldives, noted "At around 5 PM, the staff told the guests that CNN had announced another wave will hit the Maldives at 6 PM". This interviewee and her family moved to an adjacent island which was slightly higher, only to discover that few people on this island knew what had happened to the Maldives and elsewhere. There was no visible damage and all the utilities were still operating, again illustrating the earlier point that not everyone understood the disaster's magnitude until some time afterwards.

A related comment from interviewee #20 in Sri Lanka was "There was a very irresponsible announcement on Indian radio announcing another earthquake and wave predicted. This caused panic. It created a 'cry wolf' effect that undermines reliable information and scientific information sources." That message might have reached Thailand too, as noted by interviewee #46: "A few days after the tsunami, I was once again kayaking near Hat Rai Lay when the beaches started to evacuate because of a report from India that another tsunami was coming. The 'all clear' was sounded an hour later". Interviewee #71 on Phuket said "We were told another wave was coming — it didn't".

The lack of information and poor communication regarding the event and what to do next was mentioned in several interviews, with some interviewees looking to their resort's staff for guidance. Some commended the staff for generosity and competence in trying circumstances, while others expected much more from the staff. The fact that many communications lines were not functioning for hours or days and that the staff also had never before experienced a tsunami is a prominent reason for limited information and communication. This point highlights the need for contingency planning as part of managing a tourism resort (see also Hall et al. 2003). Interviewee #76 stated "Phi Phi would benefit more from a proper emergency plan. No-one had even thought about disaster planning. There wasn't a single first aid kit in the hotel. We needed stretchers and first aid kits, but we had to make or loot our own."

Part of the frustration expressed regarding information and communication seemed to stem from guilt. One member of interviewee #25's group mentioned guilt in surviving while two others described guilt and helplessness in not being able to assist the locals more and in leaving them behind while the tourists, including themselves, left and went back to their own homes and lives.

Warning

In terms of information that would have been useful, more knowledge about recognising tsunami signs was mentioned. Three interviewees suggested the sea suddenly retreating as being an important pre-tsunami sign that they wish they had known; two mentioned feeling an earthquake; and two mentioned both sea retreat and an earthquake. Thirteen interviewees had felt the earthquake but took no action while one collected belongings and left their room after feeling the earthquake.

Little context was provided in these suggestions. The basic environmental signs of an earthquake and of the sea suddenly retreating are important for tsunami recognition, but cannot be relied upon for complete safety. Sri Lanka was too far from the earthquake's epicentre to feel major tremors, yet suffered the second highest number of fatalities of any country, after Indonesia. Being asleep or under the influence of alcohol or drugs would preclude observations of sea retreat and might also preclude recognition of an earthquake. Interviewee #72 did note that "If it had happened at night, the results would have been far worse. Everyone slept in mosquito nets. If they'd been asleep when the sea broke their windows, they'd almost certainly have been trapped".

A few interviewees (e.g. #2 and #86) noted that the time from low water to high water was less than a minute. That does not provide extensive time to react; however, depending on the topography, that could nevertheless be enough to reach high ground. As well, the first wave of a tsunami is usually not the most destructive and subsequent waves might not arrive for several minutes, even up to thirty minutes afterwards, potentially providing enough time to evacuate farther.

If a location is far from the earthquake's epicentre, a lorry passing nearby can induce shaking like a mild earthquake, raising the spectre of multiple false alarms. Yet locations so far away provide time for warnings to reach people by phone or email. Internationally, notices of major earthquakes and subsequent tsunami watches or warnings are usually sent out within fifteen minutes of an event. The Indian Ocean was not covered by this system on 26 December 2004, but is now. Residents and tourists with mobile phones could set up a system where their phone rings (e.g. to waken them) when an alert is issued for their area.

Forms of tsunami warning systems were mentioned by ten interviewees. Interviewee #66 specifically mentioned sirens while interviewee #78 specifically mentioned text messages. Interviewee #5 repeated a story that "the [hotel name] in Krabi had received an internal warning from another [hotel in the same chain] which had been hit first, possibly Phuket. We were told that the [hotel name] in

Krabi got everyone off the beach and few people were caught by the wave". Escape routes were suggested by some interviewees. Interviewee #73 suggested "big concrete towers on the beach for people to climb to find refuge". Others recognized the need for stairs or paths leading up to higher ground.

Whilst these desires for warning have merit, most represent only part of a complete and long-term warning system (e.g. Glantz 2003; Glantz 2004; Mileti et al. 1999; Sorenson 2000). For instance, concrete shelters have been successful in saving lives in Bangladeshi storm surges as part of a comprehensive warning and shelter system (Chowdhury et al. 1993), but aesthetic and environmental concerns might be raised regarding constructing rarely used concrete structures on or near beaches and other environmentally sensitive locations.

Interviewees did discuss possible limitations of warnings. Interviewee #70 stated "Introducing an early warning system would be almost impossible for this coast because it is so long. I can't think of anything else that could have been done." Interviewee #68 noted "You can't protect against this sort of thing − unless you ban people from living near any sort of [natural hazard]. It's like a volcano. You go through this and realise how little control you have…Even an early warning system wouldn't have helped people in Banda Aceh".

In terms of indigenous peoples' responses, the only observation was from interviewee #20 in Sri Lanka who stated "Andaman islanders saved themselves due to their folklore connecting large earthquake to tsunami" matching the reports by Bishop et al. (2005) and Dybas (2005). A "folklore" and oral history of the 26 December 2004 might emerge amongst the international community due to worldwide media coverage and the large number of foreigners who were affected.

The list of questions asked in the survey included observations of animal behaviour that the interviewee might have noticed prior to the tsunami. The majority of interviewees had no information. One anecdote from interviewee #77 was hearsay: "We heard that an Englishman living near Matara fled to high ground when an alarm was raised. He was surprised to find cattle already there. And, despite the devastation, no dead animals were found in Yala National Park". Interviewee #41 spoke of strange behaviour by birds and interviewee #60 mentioned unusual behaviour by dolphins which Thai locals said happens after the sea behaves strangely. Interviewee #58 stated "We woke up to the sound of scared chickens clucking and running around. Those who grew up on a farm will know what that sounds like, you others will just have to trust me — they were scared. Animals seem to be able to predict natural disasters." The challenge of such anecdotal reports is attribution of cause and effect. Animals might behave strangely many times, but the instance which is recalled and highlighted is the instance just before the tsunami.

Personal preparation

Several interviewees suggested aspects of personal preparation for disasters as being important. Three mentioned emergency assistance skills:

- "We should all learn first aid (but I wouldn't have had occasion to use it in this instance). I would have liked to have known how to help more. It would have been useful to know when dead bodies are dangerous and how to handle them" (interviewee #24).
- "Instruction needed on how to do CPR on drowning victim" (interviewee #19).
- One public health professional provided first aid and triage, and engaged able-bodied people nearby in assisting.

Resuscitation where no pulse exists has only a small chance of saving an individual without facilities for advanced life support and especially the use of a defibrillator within minutes of the heart stopping. However, training in basic life saving (including opening airways, stopping bleeding, and treating shock) is extremely valuable. Mass-casualty, non-medical triage skills which can be taught to community volunteers, as well as organizational skills for mobilising and improvising, are useful for generating the confidence and interest in dealing with emergencies and in saving lives through calm and collected action.

Another useful comment regarding personal preparedness came from interviewee #86: "When the mobiles started working, I wanted to contact my brother in the UK, but could not remember his contact number since normally the phone number would be stored in my mobile so there is no need to remember such numbers. It is important to remember one or two key contact numbers for emergencies".

Interviewee #70 expressed concern about the preparedness of the local population, saying "Swimming lessons should be made compulsory for all locals", a sentiment which equally applies to the tourists. Certainly, swimming skills and confidence in water help in surviving floods, but there are other factors too, such as physical strength and stamina, clothes worn which can drag an individual underwater or become entangled, and debris plus water temperature which can quickly tire even the strongest swimmer (e.g. Jonkman and Kelman 2005).

Additionally, cultural barriers exist in many Indian Ocean coastal locations which prevent local women from learning how swim and which lead local women to feel obliged to continue to wear clothing that inhibits swimming

in the face of water-related dangers. Such factors were identified as contributing to the higher rate of female mortality compared to males in coastal floods such as the 1991 Bangladesh storm surge (Chowdhury et al. 1993) and the tsunami (Oxfam 2005).

Livelihoods

The final major topic emerging from the interviews relates to local livelihoods. One interviewee (#20) raised the matter explicitly, stating "They are banning development 100 m up to 1 km from the sea which is really foolish and will destroy communities. It seems entirely political and that they are clearing the way to simply make way for more tourist hotels. Large tourism corporations are taking over prime spots and this isn't benefiting local people." Locals being excluded from rebuilding in coastal locations that are later provided to hotel developers is also documented by ActionAid (2006).

Other interviewees addressed livelihoods in the context of the bond which developed between the tourists and the local survivors, especially with the former hoping to help the latter. Guilt was addressed earlier, matching a member of Interviewee #25's group noting that she wishes that she could have spent more to help the economy. Another member of that group said that he helped a charity to fundraise for the area he was in. Several interviewees alluded to interest in or commitment to returning to their location to see how the locals were doing and to help out, if possible, given the local losses coupled with a likely decline in tourism.

Livelihoods are a major concern not only post-tsunami but also regarding deeper vulnerability concerns which might have contributed to the tsunami disaster in the first place. For example, how much did tourism draw locals to the coast, making them vulnerable to the tsunami, rather than pursuing other potential livelihoods inland? Or does serving international tourists create better local livelihoods and improved disaster risk reduction in the long-term?

Livelihoods concerns are dealt with extensively in the literature in the context of unsustainable livelihoods leading to vulnerabilities which are exposed in a disaster (e.g. Hewitt 1983; Lewis 1999; Wisner et al. 2004). Aspects of that concern are evidenced for the tsunami by Ingram et al. (2006), Kennedy et al. (2008), and Wachtendorf et al. (2006).

Livelihoods and tourism tradeoffs are exemplified for the tsunami by Birkland (2006) who suggested that livelihoods in one of his case study sites in Thailand were recovering well after the tsunami because the Starbucks was open. When it was suggested that Starbucks-related livelihoods might have drawbacks for Thailand (see also Handmer and Choong 2006), his reaction was "I don't mind a Starbucks in Thailand", as if his interests were more important than the locals' interests. Increased awareness by tourists of the tourism impacts on livelihoods and of the vulnerabilities which tourism alleviates or exacerbates could be a useful longer-term outcome from tourists' tsunami experiences.

Conclusions

Three topics emerged from the interviews which merit further investigation: the connections between sustainable tourism and disaster vulnerability, the role of tourists in disasters, and disaster risk reduction education. Because they are drawn from mainly the experiences of one tsunami disaster, they might not be universally applicable to all coastal zones or for all possible disasters.

The interviews revealed several issues related to sustainable tourism and disaster vulnerability. Plenty of literature exists on each topic separately, but studies, policies, and practices connecting these areas are more limited. One example of a topic highlighted for coastal zones by the tsunami is the sustainability of tourism and of tourism-related livelihoods following the widespread exposure of tsunami disaster vulnerability (see also Garcia et al. 2006; Steckley 2006; Rice 2005). Tsunami-affected resorts have experienced different impacts on the tourism sector, although the general pattern has been an immediate drop in tourist visits in the few years following the tsunami (e.g. Ichinosawa 2006; UNDP 2005; Rice 2005; Wachtendorf et al. 2006) with anecdotal evidence suggesting a rebound to near pre-tsunami tourist levels where resorts have been repaired or reconstructed.

Where a major event reduces tourism livelihoods afterwards for an extended period of time, the sustainability of the industry and of the livelihoods needs further investigation. Additionally, studies are needed to examine how tourism affected disaster vulnerability, to try to answer the questions on this topic raised in the "livelihoods" part of the previous section. This discussion covers the second area of recommendations being revealed by the surveys: the role of tourists in disasters.

The nature of tourism after a disaster is also important, particularly "disaster tourism", when tourists travel to see disaster memorials or disaster sites. An important part is international tourists affected by the tsunami returning to the sites to remember their experiences or the deceased. Tens of thousands of foreigners were bereaved by the tsunami, many of whom have returned and who will continue to return to the site where their loved ones died.

Bonds were also formed with bereaved and non-bereaved locals in the tsunami's aftermath, such as the interviewees who mentioned that they wished to help the

locals. Additionally, with a few interviewees mentioning guilt about leaving behind the destruction when they went home, re-visits and becoming involved in helping the communities where the tsunami was witnessed could be a strong possibility to help local livelihoods.

Implications for disaster risk reduction education are apparent from this survey. Information needs to be readily available for the local population through public and community education as well as for visitors. This basic disaster awareness information should cover potential disasters that might affect the area. For tourists, this would be an extension of the fire escape information typically provided on the back of hotel room doors and often provided in brochures. It should include basic information about the possibility of hazards such as tsunamis, their destructive potential, any pre-cursors (including their reliability or fallibility) and appropriate counter-measures, information about local warning systems (or lack thereof), and safety measures already taken by the institution and staff. For the local population, this could mean mandatory content as part of primary or secondary school curricula at all age levels, as well as informal education through regular campaign activities and annual drills, as is frequently carried out for known local events such as floods in the UK and USA and earthquakes in Iran and Japan.

This basic knowledge could then be expanded to encompass other skills which interviewees identified, such as first aid and being aware of evacuation routes, thereby leading to training for community-based disaster risk reduction teams. These teams exist around the world, in countries such as Japan (Hamada et al. 2005), Taiwan (Chen et al. 2006), Turkey (Petal et al. 2008), and the USA (Simpson 2001). The skills and attitudes learned in this training then become relevant wherever one is and might lead to actions such as always having a first aid kit and defibrillator available or mapping out evacuation routes upon arrival in a new location. Fostering interest in and responsibility for community-based disaster risk reduction would likely lead to visitors becoming an inherent part of disaster risk reduction in tourist resorts. Tourist resorts and those in the tourist industry might be convinced to undertake and publicize the disaster risk reduction measures taken.

The 26 December 2004 tsunamis exposed recurring vulnerabilities amongst international tourists which could have been similarly exposed by a wide range of other events. With the eyewitnesses being willing to share their experiences and to cast a critical eye on lessons learned and possible improvements, this opportunity should be grasped to reduce disaster risk for tourists as well as residents in coastal locations.

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Appendix #1: Table of primary interviewees

Table 3 Primary interviewees

#	Gender	Interview or written account	Where tsunami was witnessed		How deep was the water?
			Country	Place	(Exactly as reported by the interviewee)
1	Female	Interview	Maldives	Lhaviyani Atoll	
2	Female	Interview	Maldives	North Male Atoll	20–30 cm.
4	Female	Interview	Thailand	Phuket, Kata Beach	Waist height.
5	Female	Interview	Thailand	Phi Phi	
7	Male	Interview	Sri Lanka, south	Unawatuna	10 ft.
10	Male	Interview	Maldives	South Maalhosmadulu Atoll	Waist height.
19	Female	Interview	Malaysia	Penang	
20	Male	Interview	Sri Lanka, southwest	Beruwala	
23	Female	Interview	Thailand	Phi Phi	1 elevated storey balcony.
24	Male	Interview	Sri Lanka, south	Unawatuna	
25	Female	Interview	Sri Lanka, east	Tricomalee	5–6 feet.
26	Male	Interview	Sri Lanka, southwest	Hikkaduwa near Naragama (Narigama)	
28	Male	Interview	Thailand	Phuket, Patong Beach	A few inches only.

Table 3 (continued)

#	Gender	Interview or written account	Where tsunami was witnessed		How deep was the water? (Exactly as reported by the interviewee)
			Country	Place	
30	Male	Written	Sri Lanka, east	Arugam Bay	About 25 ft.
31	Male	Written	Thailand	Phuket, Patong Beach	1 foot.
32	Male	Written	Thailand	Khao Lak	8 inches from the ceiling, 1st floor.
34	Male	Written	Sri Lanka, south	Weligama	
35	Female	Written	Sri Lanka, south	Kogalla	40 cm (knee-deep).
36	Female	Written	Sri Lanka, southwest	Kosgoda	First wave: 40–50 cm, second wave 6–10 m.
37	Male	Written	Sri Lanka, southwest	Beruwala	
39	Male	Written	Malaysia	Langkawi, near Burau Bay	
41	Female	Interview	Thailand	Phuket, Patong Beach	
42	Male	Written	Thailand	Phuket, Kata Beach	
43	Male	Written	Sri Lanka, south	Unawatuna	Chest height and rising.
45	Male	Interview	Sri Lanka, southwest	Bentota, SW	5 m maximum.
46	Male	Written	Thailand	Phuket	
47	Male	Written	Thailand	Phuket, Koh Racha	
56	Male	Written	Thailand	Phuket, Relax Bay	
57	Male	Written	Thailand	Khao Lak	
58	Male	Written	Thailand	Koh Lanta Yai	
59	Male	Written	Thailand	Phuket, Maikaho Beach	Knee high.
60	Female	Interview	Thailand	Phi Phi	
66	Female	Interview	Thailand	Phuket, Kamala Beach	
67	Female	Interview	Thailand	Phuket, Kamala Beach	Chest height, rising to 10 ft.
68	Male	Interview	Thailand	Koh Lanta Yai	
70	Female	Interview	Sri Lanka, southwest	Hikkaduwa near Naragama (Narigama)	Up to 4 m.
71	Male	Interview	Thailand	Phuket, Karon Beach	Only a little water reached the ground floor level of the hotel.
72	Male	Interview	Sri Lanka, south	Mirissa	Waist height outside the bungalows (6 ft+inside).
73	Male	Interview	Thailand	Phuket, Patong beach	
74	Female	Interview	Sri Lanka, southwest	Dudandua, north of Galle	1.5 m.
75	Male	Interview	Thailand	Phi Phi, Koh Jum	Knee height.
76	Female	Interview	Thailand	Phi Phi	10 ft
77	Male	Interview	Sri Lanka, southwest	Ahungalla, north of Galle	2 m
78	Female	Interview	Thailand	Twon Sai, near Krabi Town	2 m
80	Female	Interview	Thailand	Phi Phi	At least 2 m (height of ceiling).
81	Male	Interview	Thailand	Khao Lak	30 meters.
85	Male	Interview	Thailand	Khao Lak	
86	Female	Interview	Thailand	Khao Lak	Up to knee level on the 1st floor.
87	Male	Interview	India	Kerala, Mulloor	
89	Male	Interview	Thailand	Phuket, Kamala Beach	
91	Female	Written	Maldives	Hakura Haraa Island	10–15 feet higher than normal.
92	Female	Written	Sri Lanka, south	Mirissa	Almost filled the room.
93	Male	Written	Sri Lanka, southwest	Bentota	By the time he reached the house, up to his chin.
94	Male	Written	Thailand	Phi Phi	
97	Male	Written	Thailand	Phuket, Pansea Bay	

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