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The Future of Disasters in a Globalizing World

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The Thailand Tsunami and Hurricane Katrina: Assessment of the Impact of Disasters on Global Tourism

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- We focused on the impact of the tsunami on the tourism sector in Thailand
- Team Members
  - Tom Birkland, SUNY Albany
  - Richard Little, USC
  - Pannapa Herabat, Asian Institute of Technology
  - William “Al” Wallace, RPI
The Team
Nations Affected by the Boxing Day Tsunami

http://news.bbc.co.uk/1/hi/world/4126019.stm
Our Study’s Initial Hypothesis

A combination of sound physical infrastructure and extensive social capital would make Thailand resilient in the face of the tsunami.

This proved to be true and distinguishes the impacts of the tsunami in Thailand from those of Hurricane Katrina along the U.S. Gulf Coast.
Why We Focused on Thailand Among the Areas Impacted by the Tsunami

- Highly developed infrastructure
- Important and growing tourism sector
- A maturing and developing nation and economy...
  - But still sensitive to external shocks
Affected Area in Thailand

Areas Hit by Tsunamis
Major Impacts in Thailand

- >5200 killed—many of whom were foreign tourists
- Hardest hit areas: Khao Lak, in Phang Nga, north of Phuket; Phi Phi Island
The Operating Hypothesis: Tourism As An Interconnected Socio-technical System

- Beach-oriented tourism could be analyzed as a network of:
  - Tourism companies
  - Resorts
  - Civil Infrastructure
  - Resort Workers
  - Suppliers
- This network could be disrupted by an extreme event
What We Found on the Ground

We assumed a large physical network, with many nodes, and that an extreme event could cause damage to many parts of the network. But,

- The only physical damage caused by the tsunami was at the extremities of the network, i.e., at the beaches. In Thailand, as in other places affected by the tsunami, most deaths and physical damage was limited to areas subject to inundation by the tsunami wave.
- The network was resilient, i.e., it had the ability to reconfigure itself in the face of disruption.
- The key to the resilience was social capital that endured because key physical infrastructure (e.g., transportation, communications) was not destroyed.
Initial Damage Findings

- The physical infrastructure was damaged only within about 1 to 2 km from shore
- The inland infrastructure worked well
  - Phuket airport closed only 30 minutes
  - Minimal disruption of electricity, water, telecom, highway transportation
- Relief efforts were begun almost immediately
- Evacuation can work with sufficient warning
**Initial Damage Findings**

- Medical facilities appeared sound
  - Thailand is a major destination for *medical tourism*
- Public health impacts of the tsunami were minor
  - Little evidence of communicable disease in April, 2005
- Well-constructed, engineered buildings survived reasonably well with little damage to upper floors
Macro Scale Impacts on Tourism

- Sharp reductions in numbers of visitors
- Reduced number of direct flights to Phuket by overseas carriers (almost all visitors now must pass through Bangkok [BKK])
Actions To Restore Confidence

- Tsunami Warning System Under Development
- Evacuation Drill (May 2005)
  - Does the evacuation drill really reflect reality?
- Planning and Building Controls
  - Increased setbacks from beach
  - Enhanced structural resistance
  - Increase allowable building height
A Regional Warning System: The Holy Grail?

A reliable tsunami warning system for the Indian Ocean basin, coupled with timely and readily comprehensible on-shore warnings, detailed evacuation instructions, and places of vertical refuge could save lives—minutes and meters were the difference between life and death in 2004.
“Natural Experiment”
March 28, 2005 Earthquake

- Media reported and propagated myth of widespread “panic” just as on December 26.
- In fact, there was no panic—people learned of a potential tsunami and moved to higher ground.
- Panic has not been found to be a key feature of human response to disaster—efforts taken to save one’s life are usually purposive and altruistic.
Planning and Building Controls to Save Lives and Property

- Minimum setbacks from shoreline
  - Likely ineffective—many casualties were in ocean when tsunami struck

Building code changes

- Shelter in place could be a viable option if
  - Buildings are tall enough (4+ stories)
  - Buildings are constructed to withstand tsunami waves
Status of Tourist Facilities
One Year Later

- Well over 95% of rooms are reopened and available on Phuket
- Some facilities open in Phang Nga, although Khao Lak is still largely out of service
  - Rebuilding: ~ 3 years
- Reasonably successful tsunami drill in 2005
- Tourist visits still depressed
The Challenges of Long-Term Recovery

- Safe and sustainable building practices that are compatible with natural amenities and traditional land uses
- The necessity and enforceability of setbacks from the beach given the economic reality of tourists wanting to be near the ocean, versus the relatively low probability of another tsunami?
- Restoring confidence in the safety of the area in the face of continued media distortion of the problem
A Comparison With Katrina

- Widespread destruction of physical infrastructure
- Social networks (religious, community, fraternal groups) physically dispersed and unable to connect because of infrastructure disruption
- Media emphasis on loss of social order during and following evacuation of New Orleans
- Tourism facilities (casinos) unable to reopen quickly because of damage to physical and social infrastructure
- Tourism remains depressed because of the slow pace of recovery and shortage of hotel rooms and service workers
Status of Mississippi Casinos

In Biloxi
1. Imperial Palace - Open; construction continues
2. Boomtown Casino - Plans to open in six months
3. Palace Casino Resort - Open; plans to open a golf course in the spring
4. Isle of Capri Casino Resort - Open; construction continues
5. Casino Magic - Plans to open within nine months
6. Hard Rock Hotel and Casino* - Plans on hold
7. Grand Casino Biloxi - Plans to build two new casinos; timetable uncertain
8. Beau Rivage Resort & Casino - Hoping to open by storm anniversary in August; planning to add a golf course
9. Treasure Bay Casino Resort - Plans to open in September
10. President Casino - Was going to move but was destroyed by Katrina

In Gulfport
11. Copa Casino - Closed; timetable uncertain
12. Grand Casino Gulfport - In sale negotiations

*The Hard Rock was about to open when Katrina destroyed it.
Example of Damage
Thailand
Example of Damage
Mississippi
Example of Damage
Thailand
Example of Damage
Mississippi
Example of Damage
Thailand
Example of Damage
Mississippi

[Photo of damaged area, possibly after a storm or disaster, with rubble and wrecked structures near a water body.]
Scale of Infrastructure Damage

Thailand

Mississippi
Terrorism and Global Tourism

- Terrorist attacks in Luxor, Egypt (1997), New York and Washington, DC (2001), Bali (2002), and London (2005) were all followed by a sharp drop-off in tourism that lasted for months to years.

- Unlike a natural disaster, in the aftermath of terrorist attack, most of the physical and social infrastructure remains intact.

- Media coverage emphasizes danger and risk—factors of significant concern to many tourists.
Implications for Global Tourism

- Tourism is increasingly important as a sustainable industry that generates significant foreign exchange; particularly for emerging economies.
- The entire globe is now within relatively easy reach from any tourist origination point.
- Tourists are particularly vulnerable and sensitive to a wide range of hazards.
- A truly global and real-time media can provide developing news on events anywhere in the world.
- Excessive emphasis on risk and danger can seriously hinder the economic growth of tourism-dependent, emergent nations.
A Final Note

Phuket is open!

Biloxi is not!