

# Aceh Land Value 12 Years after the Tsunami

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*The statements made or opinions expressed by authors in Fair & Equitable do not necessarily represent a policy position of the International Association of Assessing Officers. Photo above is of Lake Toba in northern Sumatra. The lake occupies the caldera of a massive supervolcano, site of the largest known explosive eruption on Earth in the last 25 million years.*

On December 26, 2004, the Aceh tsunami killed more than 200,000 people and destroyed billions of dollars' worth of properties. The purpose of this article is to examine property prices today in Aceh, 12 years after the tsunami catastrophe (2004 to 2016); it is essentially a case study on natural disasters and land prices.

## The Aceh Tsunami

The tsunami that ravaged Aceh was one of the world's deadliest natural disasters. The U.S. Geological Survey found that a total of 227,898 people died; 170,000 of the dead were found in Indonesia, particularly in Aceh. However, the government of Indonesia has estimated total deaths to be as many as 220,000 in Indonesia alone. Based on available evidence, it is likely that the total number of fatalities lies between 230,000 and 280,000 persons.

The tsunami struck at 00:58:53 UTC, or 8:59 a.m. local Aceh time. The epicenter was off the west coast of Sumatra in the province of Aceh, close to the capital city of the province, Banda Aceh. The shock had a moment magnitude of 9.1 to 9.3. The ensuing wave that wiped out Banda Aceh was as high as 30 meters; most buildings in the area were destroyed, leaving mainly bare land.

In the aftermath of the tsunami, people generally were in a state of shock, desperate, and pessimistic about the future. From a property point of view, most of the land in the



Areas affected by the tsunami are shown in the shaded box.

area, with no buildings and covered with debris or partly demolished buildings, would have had zero or even negative value. Comparison of the land value situation prior to the tsunami is a key step in understanding the nature of the real estate market and providing a realistic assessment of the impact of the phenomenon.

## The Survey

As an international expert in property valuation and real estate issues, I visited Banda Aceh 12 years after the tsunami



Now restored, Pantai Ulee Lheue beach was decimated by 30-meter-high waves during the tsunami.



Interviewees shared local knowledge with the author.

and explored land prices in 10 different locations in the area. I also visited various relocation sites in order to examine property values in those areas as well. As a result of this examination, I focused on the following six locations in Banda Aceh to assess changes in land prices:

- Lampulo, where a small boat is still located on top of a house, which has become a museum
- PLTD Apung, where a ship of 2,600 tons was washed inland about 2.4 kilometers from the beach
- Jalan Profesor Dokter Ibrahim and Jalan Roma Setia (two major roads)
- Masjid Baiturrahim Ulee Lheue, a large building that survived the destruction
- The Hotel Grand Permata Hati, where I stayed during my visit.

This exploration was carried out in August 2016 with significant assistance from the Aceh REI, the Aceh Branch of the Real Estate Association of Indonesia.



*In the background, a boat on a house memorializes the tsunami. The boat was pushed approximately 2.4 kilometers inland before settling on the house and providing refuge for 59 people.*

### Preliminary Findings

In considering changes in property prices, note that there are no property price records for either before or after the tsunami. Accompanied by an interpreter, I visited about 20 sites and was able to undertake reliable interviews at about 10 of them; 6 were in Banda Aceh

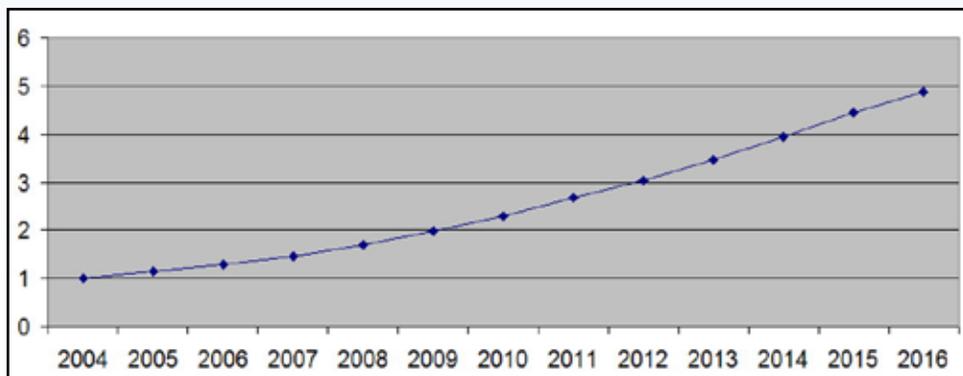
itself. I interviewed local leaders and others to obtain their recollections of land prices in these areas in 2004, prior to the tsunami, and also their opinions of prices in later years.

Changes in prices in years for which no reliable information was available were estimated by using compound interest rates for periods before and after the missing information. In assessing the changes in Banda Aceh as a whole, the average increase over all the selected sites was calculated, thus providing a good overview of overall changes in price level. This information can also be used to assess any depreciation in price that might be attributable to the tsunami.

Surprisingly, over the period 2004–2016, land prices in Banda Aceh have increased by a factor of 4.87 times, or at an average annual rate of about 14.1 percent per annum. Land prices appear to have been stagnant only in the first year after the tsunami. In general, across all the areas examined, the increases in price levels are more or less the same, some 4.5 to 5 times during the past 12 years. Only in the area of PLTD Apung, where the big ship was washed up, was

**Figure 1.** Property value changes from 2004 to 2016 in Banda Aceh, Indonesia

Location	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Lampulo (small ship)	1.00	1.19	1.41	1.67	1.87	2.10	2.36	2.65	2.97	3.33	3.73	4.17	4.67
PLTD Apung (big ship)	1.00	1.14	1.31	1.50	1.78	2.12	2.52	3.00	3.57	4.24	5.05	6.00	6.50
Jaran Profesor Dokter Ibrahim	1.00	1.10	1.21	1.33	1.68	2.11	2.65	3.33	3.63	3.94	4.29	4.67	5.00
Masjid Baiturrahim Ulee Lheue	1.00	1.15	1.32	1.51	1.73	1.99	2.28	2.62	3.00	3.22	3.46	3.72	4.00
Jalan Roma Setia	1.00	1.11	1.24	1.37	1.53	1.70	1.89	2.10	2.33	2.92	3.67	4.14	4.67
Hotel Grand Permata Hati	1.00	1.12	1.26	1.42	1.60	1.83	2.10	2.40	2.73	3.10	3.52	4.00	4.40
Overall (Aceh)	1.00	1.14	1.29	1.47	1.70	1.97	2.30	2.68	3.04	3.46	3.95	4.45	4.87



the increase the highest, at 6.5 times. This is most likely because the area has become a major tourist attraction, allowing many commercial opportunities to be established.

### The Comparison

It is worthwhile to compare these increases with those in other similar locations. According to the Agency for Real Estate Affairs, one of the largest real estate information centers in the ASEAN (Association of Southeast Asian Nations) region, Phuket Province, Thailand, has experienced an increase in value between 2004 and 2016 of about 5 times or 14.4 percent per annum. Phuket, with over 10 million tourists each year, has experienced only a slightly larger increase in comparison to Aceh. In addition, Siam Square in the Bangkok, Thailand, central business district has experienced an increase of 4.1 times, or about 12.5 per annum.

It is important to understand the factors that have contributed to the substantial increase in land prices in Aceh despite the catastrophe of the tsunami in 2004:

1. Banda Aceh is the capital of Aceh Province and the gateway for maritime trade to Indonesia.
2. Billions of dollars' worth of aid were poured into this city following the tsunami.
3. Massive improvements and new infrastructures were developed in the years following the tsunami.
4. The area has attracted many tourists and visitors wanting to visit these areas of historical significance.
5. The previous insurgency and fragmentation of Aceh communities were disrupted by the tsunami, leading to more harmony within the community.

These factors have contributed significantly to the substantial increase in land prices.

### No Superstition

An important factor to be considered is superstition, which could make people feel reluctant to live in an area where hundreds of thousands have perished in such a horrifying way. However, most people did not leave the city area or even their small villages, but stayed to

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rebuild. In the case of the hotel where I stayed for a few nights, the building was formerly a hospital. On the day of the tragedy, many people fled to the hospital and about 400 persons died there. Now that it has been renovated and converted to a good standard hotel, the land price for this property has increased considerably.

Consequently, one lesson to be learned from these circumstances is that, in relation to commercial properties, in the long run values are not significantly affected by mass deaths. The Hotel Grand Permata Hati was able to be renovated from an old hospital and, as observed, is operating very well. There has been a noticeable positive effect on land prices

around the hotel as well. The activities of this hotel have contributed to greater development potential in the general surroundings.

### Conclusion and Observation

In summary, this exploration of the impact of the tsunami suggests that in the long run land prices are not likely to depreciate following a catastrophe. This appears to be a general rule that applies in relation to real estate prices. This observation has been confirmed in the case of the Kobe earthquake in 1995, Hurricane Katrina in Louisiana in 2005, and the Sichuan earthquake in 2008. However, every rule has exceptions, for example, the destruction of Pompeii in 79 A.D., where the whole city was buried, or the Chernobyl disaster in 1986, where high levels of radioactivity still exist. We could conclude that continuing pollution of areas following a disaster would contribute to decreases in value.

One question to be addressed is, What if there had been no tsunami? Would land prices have increased at the same rate in Banda Aceh? I think that the area would have experienced only a small, modest rate of increase compared with what has been experienced; overall there would have been less stimulus for the level of activity that exists today. Accordingly, it could be concluded that the tsunami created many new opportunities for Banda Aceh. Balanced against this, however, is the massive loss of the lives of hundreds of thousands of people, and this is a tragedy for mankind.

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