

# The tsunami of 26th December 2004: the impact on tourism trends in Southeast Asia

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## Abstract

The earthquake of 26th December 2004 and the resulting tsunami claimed an estimated 300,000 casualties, making it one of the most destructive and deadliest natural disasters in history. The present paper investigates its impact on tourism in South East Asia by analysing the trends before, during and after the tsunami, using two main indicators: the share of tourism in the overall economy of a state and the size/volume of tourism-associated traffic. The first indicator consists of two parameters: tourism's contribution to the gross domestic product of a state and the fraction of population employed in tourism. The second indicator is made up of three parts: the number of tourist arrivals, the average length of stay and the revenues from tourism. It is shown here that tourism made a significant contribution to the economy in a number of several countries in the region affected by the tsunami. The paper shows that the trends in the size/volume of tourist traffic before the tsunami in most affected countries of the region was increasing. The impact of the tsunami is analyzed in the tourisms of Thailand, Maldives, Sri Lanka, Indonesia and India, as countries most affected by the disaster.

*Keywords: disaster, tsunami, tourism, economy.*

## 1 Introduction

Weather conditions have a great influence on human life. Often they are very strong and in a short time can dramatically change the look of human environment and even bring to life loss. This paper explores the influence of the tsunami of 26th December 2004 on tourism as a sector of the economy in Southeast Asia. We strive to show the destructiveness of a tsunami that halved



tourism turnover in these countries or even destroyed whole economies. The subject of the analysis is development trend of tourism turnover in the five countries of Southeast Asia before and after the tsunami.

Analysis is performed by examining two basic indices which consist of two sub-elements. First element, participation of tourism in overall economy, will be observed through two parameters: (P1) – participation of tourism in Gross National Product (GNP) of the country in percentages and (P2) – number of inhabitants employed in tourism (NIET) in percentages. Second element, scope of tourism, will be observed through three parameters: (P3) – the Number of Individual Tourist Arrival in thousands (NITA), (P4) – Average Length of Stay in Days (ALSD) and (P5) – Realized Income (RI) in million USA dollars for 2000, 2001, 2002, 2003 and 2004.

## 2 Influence of the tsunami of 26th December on the countries of the Southeast Asia

We shall begin the analysis by examining the data in Table 1. related to the trend of tourism development in 11 countries in Southeast Asia before the tsunami.

Table 1: Participation of tourism in overall economy for 2004 in eleven countries hit by the tsunami of 26th December 2004 is shown through two parameters P1 and P2 [1].

State	P1 in %	P2 in %
Indonesia	10.3	8.5
Sri Lanka	10.8	8.8
India	4.9	5.6
Thailand	12.2	8.9
Maldives	74.1	64.4
Malesia	14.7	12.7
Bangladesh	3.7	3.0
Burma	3.3	3.0
Tanzania	8.8	6.9
Kenya	11.7	9.4
Somalia	N/A	N/A

As we can see, tourism is significantly present in the economies of almost each of the eleven mentioned states. Also, it implicitly becomes clear that the tsunami of 26th December 2004 not only directly hit the tourism of all the countries, but in some of them, like the Maldives, Thailand, and Malaysia, endangered the overall economies of these states too.

As it can be seen, the participation of tourism in percentages in GNP of each of the eleven states varies. The percentage is the highest in the Maldives, even 74.1%, and the lowest in Burma (Myanmar), only 3.3%. In six countries, tourism is present with more than 10% of GNP. NIET varies, it is the highest in the Maldives, 64.4%, and the lowest in Bangladesh and Burma (Myanmar), only 3.0%.

Countries need to be financed from other sources suddenly emerged. Then, while the risk still exists, the countries are dependent on foreign aid, donations, grants and also on corporative and social responsibility of the companies that work in them [2]. The magnitude of this endangerment will be seen in the following analyses.

For the purpose of gaining insight in the scope of tourism prior to the tsunami, three parameters will be observed. These three parameters are shown in Table 2. for five countries of the Southeast Asia. It is easy to see that in every country all three parameters had increasing trends, except ALSD in Thailand and Sri Lanka that had more stagnation than decrease in trends. Also, it is evident that the average increase of ALSD in every country was around 20%. Its consequence was the increase of turnover and income from tourism for at least that percentage. If only India is analyzed, income increase from tourism in 2004 was almost 40% in relation to previous year. In other words, tourism was blossoming in the countries of the region.

Table 2: The scope of tourism turnover in five countries hit by the tsunami of 26th December 2004 in 2003 and 2004 (prior to the catastrophe) is shown through parameters P3, P4 and P5 [3, 4].

State	P3				
	2000	2001	2002	2003	2004
Indonesia	5,064	5,153	5,033	4,467	5,321
Thailand	9,759	10,133	10,873	10,082	11,737
India	2,649	2,537	2,384	2,726	3,457
Sri Lanka	400	377	393	583	681
Maldives	467	461	485	564	617
state	P4				
Indonesia	N/A	N/A	N/A	2.99	3.04
Thailand	7.77	7.93	7.98	8.19	8.13
India	N/A	N/A	N/A	N/A	N/A
Sri Lanka	10,1	9,9	10,1	10,2	10,1
Maldives	N/A	N/A	N/A	8,1	8,2
state	P5				
Indonesia	4,975	5,277	5,797	4,461	5,226
Thailand	9,935	9,378	10,388	10,456	13,054
India	3,598	3,342	3,300	4,560	6,307
Sri Lanka	388	347	594	709	808
Maldives	321	327	337	N/A	N/A

Before discussing the influence of the tsunami on the tourism of the region, it is necessary to say something about the total impact of this tsunami. For example, it killed close to 300,000 people (Athukorala and Resosudarmo [5]), and material damage is measured in billions of US dollars. For better insight into the victims and damage as per the countries, three parameters will be analyzed: (P6)-Suspected and Verified Casualties (SVC), (P7)-Number of Damaged

Villages, Houses and Buildings (NDVHB) and (P8)-Damages (DA) in millions of USA dollars (Table 3).

Similarly to the casualties, material damages were greatest in three countries-Indonesia, India and Sri Lanka, where they amounted to over 8,000 million US\$ [6–8]. Damages were considerable in Myanmar, the Maldives, Thailand and Somalia where they together amounted to over 1,400 million US\$ [6, 8, 9]. Data on damages were not available for other countries.

Many states throughout the world (e.g. Australia, Germany, USA, France, Canada, Japan and others) helped the region hit by tsunami through humanitarian actions.

International financial institutions (e.g. European Investment Bank, International Monetary Fund and others), international government organizations (UN, European Commission and others) and socially responsible international companies also helped.

Table 3: The magnitude of casualties and destruction as per the countries hit by the tsunami of 26th December 2004 is shown through parameters P6, P7 and P8 [6, 7, 10].

State	P6	P7	P8
Indonesia	242,347	172 region, 1550 villages, 21,659 houses	4,451,600,000
Sri Lanka	30,957	119,626 houses	1,316,500,000
India	16,389	157,393 buildings., 897 villages, 11,827 acres of agricultural land	2,200,000,000
Thailand	5,393	4,806 houses	405,200,000
Somalia	298	2,600 fishermen boats	100,000,000
Maldives	82	-	470,100,000
Malesia	68	-	-
Myanmar	61	592 houses in 17 villages	500,000,000
Tanzania	10	-	-
Bangladesh	2	-	-
Kenya	1	-	-
Total:	<b>295,608</b>		<b>9,443,400,000</b>

By analyzing Table 4. an assessment of trends in tourism turnover after the tsunami will be made.

Out of all the countries, only Indonesia had decreasing trend as per two parameters, (NITA and RI) which is understandable because this country suffered the greatest hit by the tsunami of 26th December 2004. It is interesting that other countries achieved increasing trends of tourism turnover as per all the parameters. That testifies the ability of tourism to recover relatively fast, under certain conditions, even after great catastrophes which would be much harder to accomplish in other economic branches.

The tsunami was a direct cause of the reduction of tourist movement in this part of the world in 2005th year by almost 40% compared to 2004th year, which

is clear from Tables 2 and 4. As we can see on the examples of the economy of Sri Lanka and the Maldives, a relatively small area close to the epicenter of the quake, the countries are dependent on tourism activities. Economically stronger countries such as India, Indonesia and even Thailand, which have also suffered a reduction in tourist arrivals, as the crisis in terms of tourist movements continued, easierly recovered because they responded quickly and were able to affirm and promote new tourist destinations that were affected by tsunami and also to rebuild affected areas. The impact of the tsunami was felt on their economy, but was not as great as in the weak economies (Maldives and Sri Lanka) [11].

Table 4: Scopes of tourism turnover of the countries hit by tsunami of 26th December 2004 in 2005 and 2006 (after the catastrophe) are shown as per P3, P4 and P5 [3, 4].

state	P3				
	2005	2006	2007	2008	2009
Indonesia	5,002	4,871	5,506	6,234	6,324
Thailand	11,520	13,822	14,464	14,584	14,150
India	3,918	4,447	5,082	5,283	5,169
Sri Lanka	549	560	494	438	448
Maldives	395	602	676	683	656
state	P4				
Indonesia	2.9	3.2	2.8	N/A	N/A
Thailand	8.2	8.62	9.19	N/A	N/A
India	N/A	N/A	N/A	N/A	N/A
Sri Lanka	8.7	10.4	10	N/A	N/A
Maldives	7.9	8.3	N/A	N/A	N/A
state	P5				
Indonesia	5,094	4,890	5,831	8,150	6,054
Thailand	12,102	16,614	20,623	22,497	19,814
India	7,652	8,927	11,234	12,462	11,136
Sri Lanka	729	733	750	803	754
Maldives	N/A	N/A	1,331	1,392	1,336

Besides the tsunami, this part of the world had a problem with SARS in 2003, terrorism and the global economic crisis that has engulfed the whole world. These are all threatening factors that affected to a greater or lesser extent the tourist industry.

Undoubtedly, lost lives of the tourists are the most dreadful consequence of the catastrophe. In the report of the American Agency Risk Management Solutions Inc. [12], the data shows that around 2,200 foreign tourists were killed by the consequences of the tsunami of 26th December 2004. The total amount of paid life, health and travel insurance was around 300 million US dollars.

The following part of the text will show the influence of tsunami on the tourism of Thailand, the Maldives, Sri Lanka, Indonesia and India as the countries hit hardest by the catastrophe. The research will contain different, primarily quantitative indices of the influence like: decrease of the contribution of tourism to GNP, decrease of the income from tourism, damages on tourist facilities, investments in recovery, decrease in the number of employed, preventive measures and primarily the number of casualties. The surveys will be closer to the originally published indices in order not to disturb the authenticity of data.

*Thailand* Tourism is an important branch of economy in Thailand with high annual growth. Tourism, for example, made 6%, and hotel and restaurant sectors made 3.8% of GNP of Thailand in 2002, while the participation of tourism in GNP was 12.2% in 2004. These two sectors were also the most important part of the economy of the province of Phuket where they participated with even 42% in GNP of this province [13].

The action of the tsunami in Thailand killed more than 5,000 persons many of whom were tourists. The number of visitors decreased 40% in comparison to August 2004 and around 100,000 persons employed in tourism lost their jobs. Decrease of the income from tourism amounted to around 260 million US dollars per month, and assessed damage on tourist infrastructure was around 1 billion US dollars, [6].

According to the data of tourist association of Thailand, in 2005, there were 242 hotels in southern Thailand [14]. Out of that number, 154 hotels (64%) opened under normal conditions, and for 19 hotels (8%) the restoration lasted around a month and they opened in February 2005. For 9 hotels (4%) opening was delayed from 4 to 6 months, and for 59 hotels (24%) restoration was planned to last longer than 6 months while only one hotel remained closed permanently.

Thailand started its recovery immediately after the catastrophe. Local authorities played an important role in the recovery of tourism. In regions of Phuket and Krabi, with developed tourism, they comprehensively supported the restoration of tourism resources. Fortunately, other tourist destinations like Bangkok, island Samui, Hua Hin and Cha-am, Chiang Mai and Pattaya remained intact from the destruction and with full tourism capacities [2], which considerably helped the restoration of the overall tourism.

In coastal communities which are dependent on tourism and in danger of tsunami, new regulations were introduced for the construction of hotels and other infrastructures. Expected results were not achieved because of the lack of financial and human capacities to carry out new regulations as well as because of spread corruption and nepotism [15, 16].

*Maldives* Tourism is the most important branch of the economy in Maldives. It comprises 74.1% of GNP of this country with the totally realized income of around 415 million US dollars. Out of the total of 88,000 working population, tourism employed around 25,000 workers (28%), and only in hotel sector there were around 17,000 (19%) persons [17]. Around 20% of the tourists are divers who want to see the sea directly, reefs and protected ocean areas, plant and animal species that make the characteristics of this country.

The Maldives suffered the greatest losses in the region of the tsunami of 26th December 2004. Out of 199 inhabited islands in this archipelago, 14 islands were completely evacuated, and many islands were without drinking water and electrical energy. After the tsunami, out of 87 luxury resort hotels, 19 resort hotels had to be closed because of damage. The number of tourists that were moved to safer areas was 12,720 persons [18]. The greatest detrimental consequence of the tsunami is 82 killed, 26 disappeared persons and 3 foreign tourists were among the dead.

Tourism suffered the greatest losses from the tsunami. In 2005, visits of foreign tourists were more than 36% decreased in comparison to 2004. In January and February 2005, the exploitation of hotel capacities was around 25%, while under normal conditions and in season, the exploitation is around 85%. This was greatly contributed by around 5,000 (29%) hotel beds out of use in the total number of 17,000. Out of that number, 1,200 beds were considerably damaged [17]. The number of regular and charter flights were decreased as well as the number of employed in some resort facilities. Some other negative influences on tourism surfaced. For example, many undamaged hotels and other tourist facilities were pronounced damaged through some kind of propaganda and misuse of media and for some time that unjustifiably stopped or decreased turnover.

Total damage to tourist infrastructure amounted to 304 million US dollars, and business loss was 250 million US dollars [6]. Around 100 million US dollars was spent for the restoration of hotel and resort facilities.

*Sri Lanka* Tourism is an important economic branch of Sri Lanka. It accounts for 10.8% GNP of this country and before tsunami it brought the income of 808 million US dollars. There are around 50,000 workers directly employed in tourism and additional 65,000 employed indirectly.

Tourism of Sri Lanka suffered great damage from tsunami of 26th December 2004. The greatest damages were in medium size and in large hotels around 3,500 (25%) rooms were not good enough to receive guests out of the total of 14,000 rooms. In minor hotels around 1,200 (30%) rooms could not be used out of the total number of 4,000 rooms. Total monetary damages in hotel rooms amounted to 250 million US dollars, and in accompanying tourist areas, like souvenir shops, restaurants and vehicles, the damage was additional 50 million USA dollars. The horrible consequences of the tsunami are 30,957 killed and at least 4,000 persons considered missing [6] while over 1,000,000 persons were misplaced.

Planned visits of foreign tourists in 2005 were 600,000 persons, but there were only 425,000 visitors. The loss in tourism amounted to around 150 million US dollars in 2005 and 2006 in comparison to the planned [19].

*Indonesia* Notwithstanding the terrible cost in human lives and damage to infrastructure and homes in the province of Nanggroe Aceh Darussalam (Aceh), the tsunami had only a small impact on Indonesia's economic growth in 2005 [20].

According to the World Bank study, the direct impact of the tsunami lowered the national GDP growth rate by 0.1–0.4% points in 2005 [21].



Tourism in Indonesia suffered damages from the tsunami of 26th December 2004. The province of Banda Aceh was hit hardest and its economy participates in GNP of Indonesia with only 2%, while the participation of tourism was unimportant. The participation of trade, hotels and restaurants makes all together only 6.3% of GNP of the province Banda Aceh, where the most belongs to trade. For example, before the catastrophe, in 2003, the total recorded number of guests was only 51,678 [22]. On the other hand, contrary to this in some way, human casualties were apocalyptic. Around 100,000 persons were killed and the same number went missing as the consequence of the tsunami, while over 300,000 people were misplaced [22].

The losses in tourism of Indonesia are evident in the difference in the number of individual tourist visits in 2004 and in 2005 where, one year after the tsunami, there were 300,000 tourists less than previous year. The decrease can be primarily explained by psychological reasons based on the fear of the catastrophe and not objective reasons, since the number of tourists was decreased also in the areas that were not hit by the tsunami. Such decrease of individual tourist visits influenced the decrease of realized consumption of 132 million US dollars. Financial assistance was used to help the poorest and most vulnerable. The years 2005 and 2006 were used for the recovery of tourism, so that the total overall returned to the period prior to the tsunami in the years 2007, 2008 and 2009, [11].

*India* At the first glance, India had some unusual tourism indicators. Contrary to the conditions in other countries, the number of individual tourist visits did not decrease in the year after the catastrophe, but realized tourism income decreased. For example, the number of tourists increased by around 460,000 and 530,000 in 2005 and 2006 respectively (Figure 1 [23]), while the growth of realized income in 2004 was 26%, and in the next two years it was 13% in each year, all in comparison to previous years.

An increase in the number of tourists can be mostly attributed to good plans and marketing activities on tourism market. In that way, the tourists were timely

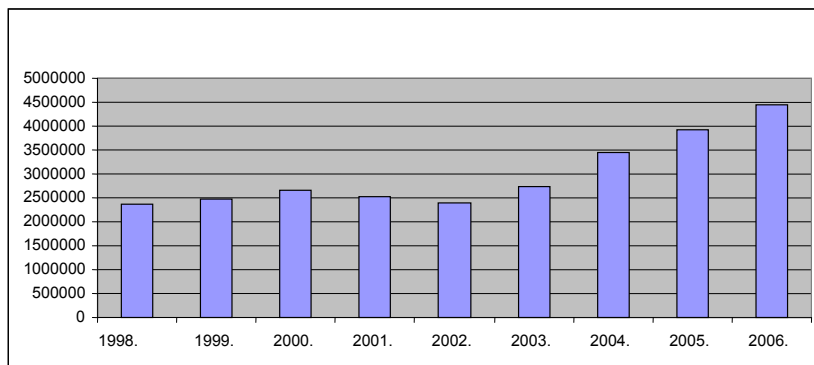


Figure 1: Number of individual foreign visitors to India in the period 1998–2006.



directed to other attractive destinations outside the areas hit by the catastrophe. At the same time, it shows that the tsunami of 26th December 2004 did not have discouraging effect on tourists. The reasons of such indications lie in the immense area of India (around 3,300,000 km<sup>2</sup>), overflowing with the heritage of its long and rich history, culture and spirituality that is always sufficiently attractive to tourists, especially from the highly developed western countries, even to the point that it overcomes the fear of catastrophe [23].

### 3 Analyses of the results of 26th December 2004

It will be interesting to see how the tsunami of 26th December 2004 influenced tourist plans. Plans of certain tourists will be considered first, and then expected and realized individual tourist visits to the region.

In the research of the World Tourist Organization (WTO) [13] tourists were given questionnaires with the question: “Did tsunami of 26th December 2004 have any influence on the decision or the change in plan for going for vacation to the Southeast Asia?” The answers were the following:

1. 65% of the participants answered that tsunami does not disturb their plans to visit the whole region (Southeast Asia);
2. 52% of the participants answered that tsunami does not influence their plans to visit hit areas; and
3. 30% of the participants answered that the tsunami influenced their decision on vacation.

Out of all answers, it seems that the third answer is the most interesting. It indicates the conclusion that every third tourist made the decision on vacation under the influence of tsunami.

Data on expected and realized number of individual visits of tourist to the regions of Asia and the Pacific are shown in Figure 2. During 2004, realized,

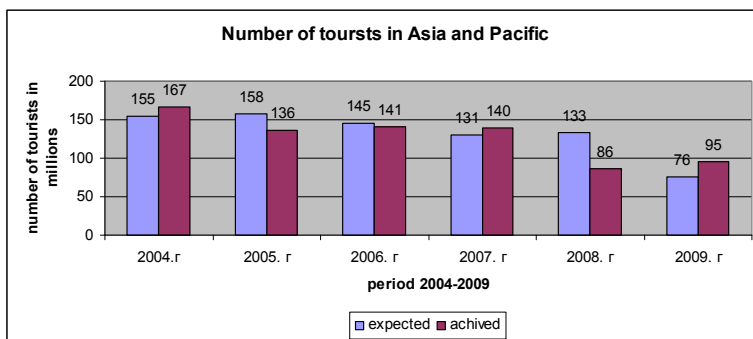


Figure 2: Expected and realized number of individual visits of tourists in the region of Asia and the Pacific in the period 2004-2009 where blue and dark red histograms mark expected and realized number of tourists in millions [13].

number of tourist visits was 7.7% higher than planned, in the three next years, realized number of tourist visits was lower, and in 2007 and 2009 they were higher than planned. It is evident that the method for the assessment of expected number of tourists had increased values before the catastrophe and decreased values two years after the catastrophe. Without judging whether the assessment method remained the same before and after the catastrophe or was modified by its influence, it is clear that the catastrophe, besides endangering tourist turnover, introduces uncertainty into the planned tourism turnover.

#### 4 Conclusion

For the purpose of analyzing the influence of tsunami of 26th December 2004 on the tourism of the region, two indices were analyzed: participation of tourism in overall economy of a country and scope of tourism turnover, before, during and after the tsunami. It is shown that tourism is significantly represented in the economies of many countries of the region hit by tsunami, both as per the participation of tourism in GNP and also as per the number of employees in tourism. Then, it is shown that trends of scope of tourism turnover before the tsunami were rising in majority of the countries as per all three parameters: number of individual visits of tourists, average duration of stay in days and realized income.

The destructive power of the tsunami can be seen from the examples above in the paper. This paper presents the situation in tourism in Southeast Asia before the disaster, and after, as well as its ability to diversify and to be sustainable.

General conclusion can be drawn out of this: that tourist economy can, under certain conditions and after major catastrophes, relatively quickly recover which is harder to do for some other economic branches. However, the tsunami had far-reaching effects on the tourism industry of Southeast Asia.

Tsunami also influenced the decisions of the tourist on the place of vacation. Almost every third tourist's decision was influenced by the tsunami. Also, the influence of tsunami is evident in the method for the assessment of the expected number of tourists which overestimated the values prior to the catastrophe and underestimated the values in two years after the catastrophe.

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