

IMPACT OF EARTHQUAKE ON TOURISM SECTOR IN NEPAL

*Shiba Prasad Rijal**

ABSTRACT

This paper aims at highlighting the impacts of catastrophic Gorkha earthquake of April 25, 2015 on tourism sector of Nepal and is based on secondary data collected through literature narratives from published and unpublished sources. The 7.6 magnitude earthquake struck a large part of central Nepal and heavily affected the tourism business and livelihoods based on tourism. The overall economic loss due to the earthquake was equivalent to US\$ 7 billion, and the disaster effect on tourism sector was estimated at 81241 million, 11.5 percent of total. Of the total amount, 76 percent represents the value of destroyed physical assets, and 24 percent reflects the losses and higher costs of production of goods and services arising from the disaster. The impact of earthquake was clearly observed on tourist arrival. The inbound tourist arrival was below pre-earthquake levels even after nine months of the earthquake, and fell to a six-year low in 2015. The impact of earthquake on economy and livelihoods was enormous. The overall economy was almost paralyzed for a long time. The recovery and the development of tourism business are closely tied with the reinstating of important tourism infrastructure and facilities.

Key Words: cultural heritage, earthquake, economy, gross domestic products, tourism infrastructure, livelihoods, tourism business.

INTRODUCTION

Tourism comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes (WTO, 1999 cited in Gautam, 2011). It is one of the largest industries of Nepal in terms of employment, sources of foreign exchange and revenue and has remained an integral part of Nepalese economy since many years. Natural disaster with catastrophic consequences can have serious effects on tourism for obvious reasons as it destroys the natural environment and the things which the industry relies on. The catastrophic earthquake (7.6

*

Dr. Rijal is Reader in Geography Education at Central Department of Education Tribhuvan University, Kirtipur, Kathmandu, Nepal.

magnitude) of April 25, 2015 and subsequent numerous aftershocks (four aftershocks were greater than magnitude 6.0, including one measuring 6.8 of May 12, 2015) have severely struck the central parts of Nepal. The earthquake heavily impacted the tourism business and livelihoods based on tourism in Nepal.

The impact of earthquake in tourism business is clearly observed throughout the world. Tourism sector in the Canterbury region of New Zealand was heavily impacted due to earthquake of 2010 as 70 percent of operators reported a decline in international visitor arrivals to their business after the earthquakes of 2010. Orchiston, Vargo and Seville (2012) claimed that tourism data showed below pre-earthquake levels even after eighteen months of the earthquakes in this Canterbury region. Likewise, Murakami, Kawamura and Suzuki (2012) reported that the earthquake and resulting tsunami directly affected the international inbound tourism in Japan. The number of foreign visitors to Japan suffered a great decline compared to the previous year. World Travel and Tourism Council (2012) has also stated that the impact of earthquake was significant on Japanese Travel and Tourism. Japanese travelers remained at home and international visitors stayed away, international inbound arrivals fell by 62 percent in April 2011 over the same months in 2010 (Zibanai, 2014). ISDR (2001) also reported the impact of earthquake on tourism of Turkey. Tourism of Turkey was heavily impacted by the earthquake popularly known as Izmit earthquake of 17 August 1999. The earthquake affected an area of 31,250 square kilometers and one-third of Turkey's population. As estimated by the World Bank, the loss of earthquake in tourism sector was 200 million dollar and income tax related loss was around 32 million in 1999. Besides, the earthquake has created major economic and social problems in other related sectors too. Likewise, Tourism sector of Andaman and Nicobar Islands of India was severely affected by the earthquake induced Tsunami in 2004 (UNESCO, 2006). The number of tourists visiting this destination sharply reduced after the earthquake. It is claimed that the lives of the low-income communities involved in tourism have reached at 'pause' stage and the tourism industry will never be exactly the same again, as some of the Tsunami-induced changes were irreversible.

The contribution of tourism sector in Nepali national economy is significant and this sector was badly impacted by the devastating earthquake of April 25, 2015 and subsequent aftershocks. The present

paper aims at highlighting the impacts of earthquake on Nepalese tourism business and livelihoods associated with tourism. The first section of this writing presents general overview regarding the earthquake and associate loss/damages due to earthquake in different parts of the world and also deals with study methods and materials. The subsequent section provides general features of Nepal and highlights on spatial extent and damages of the earthquake. The third section discusses is the role of tourism in terms of trend of tourist arrival, contribution of tourism on Nepalese economy and impact of earthquake on tourism business and livelihoods based on tourism.

METHODS AND MATERIALS

The present study is primarily based on secondary data and experience-based approach and employs literature narratives as sources of data. Relevant data were collected from published documents through internet search. Data regarding damages due to earthquake were acquired from Post Disaster Need Assessment (PDNA) report of the government of Nepal 2015. Likewise, information/data related to tourism were acquired from tourism statistics published by Department of Tourism, Government of Nepal. Tourist arrival data for the year 2015 was collected from online news publications. The analysis is based on both quantitative and qualitative assessments. The impact of earthquake on tourism is primarily assessed by comparing the trends of tourist arrival for nine months of two consecutive years 2014 and 2015 before and after the devastating earthquake.

GENERAL FEATURES OF NEPAL

Located in the central Himalaya in between China and India, Nepal covers an area of 147,181 square kilometers and as of census 2011 provides home for 26.6 million people. It is one of the poorest countries of the world. Poverty is acute, the population living below poverty line in Nepal accounts for 23.8 percent (GoN, 2015). The per-capita income (PPP) was US\$ 1160 in 2014 (GoN and UNDP, 2014). Agriculture is the principal economic activity providing livelihoods to three-fourths of its population and accounting for 33 percent of the gross domestic products (GDP) in 2015 (GON, 2015). However, a large proportion of people rely their livelihoods on tourism and associated activities. Tourism, a major provider of employment, contributed a lot to foreign exchange earnings and revenue. The World Travel and Tourism (2014) claimed that the direct contribution of travel and tourism to GDP in 2013 was NRs. 68.8 billion (3.9 percent of GDP). Its total contribution to GDP and employment was 8.2 and 7.0 percent respectively.

The spectacular landscape, diverse and exotic cultures of Nepal represent considerable potential for tourism. Tropical to tundra type of climate found within a short north-south physical span of about 150 kilometers is also an asset of Nepal for the tourists of different climatic zones of the world. Its unique natural landscapes along with cultural beauties offer a wide scope of tourism activities.

Nepal being a mountainous country, four-fifth of its land area is covered by hills and mountains and is characterized by complex geological structure. The sharp vertical landscape renders the country highly vulnerable and disaster prone due to its fragile geology and steep topography. As cited in National Strategy for Disaster Risk Management Report of Government of Nepal (2009), Nepal ranks 11th globally most vulnerable countries to earthquake. The middle zone of Nepal is believed to be sitting on high earthquake intensity zone. The Himalaya region is recognized as a young mountain system of the world and was formed by the collision of the Indian Plate with Tibetan Plate around 55 million years ago. The movement of plate is still on and the mountain building process continues from the collision and the mountain is still on making process (Dahal, 2015). Rapid growth of population, poor land use planning, haphazard settlements, and poorly implemented building code are the common features of Nepal which aggravate the impacts of earthquake. At the same time, Nepal has very limited capacity to cope with such catastrophic disasters due to low level of technological development and poverty.

EARTHQUAKE, ITS SPATIAL EXTENT AND DAMAGES

On Saturday, 25 April 2015 at 11:56 local time, a massive 7.6 magnitude earthquake as recorded by Nepal's National Seismological Centre, struck Barpak of Gorkha district, about 76 kilometer northwest of Kathmandu. The catastrophic earthquake was followed by hundreds of aftershocks greater than magnitude 4.0 (NPC, 2015). Among them, four aftershocks were greater than magnitude 6.0, including one measuring 6.8 which struck 17 days after the first big one on May 12, 2015 with the epicenter near Mount Everest. The epicenter of main shock was at the depth of approximately 15 km (9.3 mile) below the surface (NPC, 2015). This is the most powerful disaster to strike the country since the 1934 Nepal-Bihar earthquake.

The earthquake caused widespread damage in large parts of central Nepal covering 31 out of 75 districts. Out of the 31 districts, 14 were heavily damaged and another 17 neighboring districts were partially affected (Figure-1). The catastrophic earthquake resulted in huge loss of human lives, physical

infrastructure, and natural resources. A total of 507,017 homes have been completely destroyed and 269,190 partially damaged. Death toll has reached 8,790 while 22,300 people have been injured and about 300 accounted as missing (NPC, 2015). As estimated in Post Disaster Need Assessment Report, about eight million people, almost one-third of the total population of Nepal, have been impacted.

The destruction by earthquake was widespread which included residential and government buildings, heritage sites, schools and health posts, rural roads, bridges, water supply systems, agricultural land, trekking routes, hydropower plants and sports facilities. About 2,900 structures of cultural and religious heritage value with touristic importance were affected. Thousands of private residences built on traditional lines, historic public buildings as well as ancient and recently built temples and monasteries were destroyed fully or partially. The total estimated damages to tangible heritage amounted to NRs. 16.9 billion (NPC, 2015).

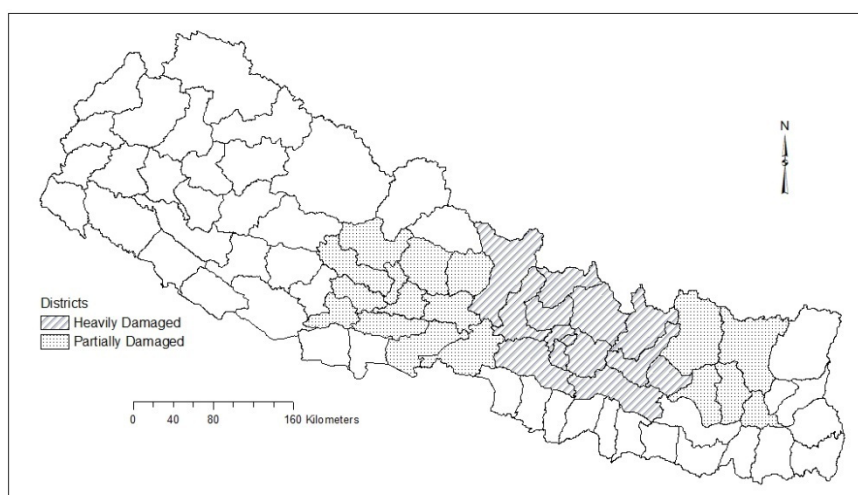


Figure-2: Districts of Nepal by Earthquake Damage Category.

ROLE OF TOURISM ON NEPALESE ECONOMY

Tourism is the largest and rapidly growing industry worldwide. Undoubtedly, it is one of the largest industries of Nepal in terms of employment, sources of foreign exchange and revenue and has remained an integral part of Nepalese economy and an economic driver since many years. It is a major provider of employment (Kruk, Hummel and Banskota, 2007), as it provides direct and indirect employment in service sector related to hospitality, travel, trade and many related sectors and

creates backward and forward linkages in the production system (Sharma, 2000). The total earning, as percentage of GDP and percentage of total foreign exchange earnings from tourism for the period of 10 years from 2004/05 to 2013/14 is presented in Table 1. This clearly indicates that the total earning from tourism has been rising except for the year 2010/11. More than 8 percent foreign exchange earning was received from this sector contributing 2.4 percent share to GDP in 2010.

Table-1: Total Earnings and its Share on National Economy

Year	Total earning (millions)	As % of GDP	As % of total foreign exchange earnings
2004/05	10,464.0	1.8	4.7
2005/06	9,556.0	1.5	3.6
2006/07	10,125.0	1.4	3.7
2007/08	18,653.0	2.3	5.5
2008/09	27,960.0	2.8	6.5
2009/10	28,139.0	2.4	8.1
2010/11	24611.00	1.8	5.0
2011/12	30703.80	2.0	4.8
2012/13	34210.60	2.0	4.7
2013/14	46374.90	2.6	5.0

Source: Government of Nepal (GoN), 2014.

Table-1 clearly indicates that the contribution of tourism on people's livelihood is significant. A large number of people based their livelihoods directly or indirectly in tourism sector which provides varieties of services and facilities to tourists. These activities include hotel industry, transportation and communication, tourist and trekking guides, tourist police, porters, training institutes and schools, production and marketing of local products, banking, music, hawkers of curio products and the like nature.

IMPACTS ON TOURISM SECTOR

Loss/Damage on Infrastructure

The catastrophic earthquake has significant impact on tourism sector in Nepal. The assessment of impact of earthquake on tourism sector is based on the amount of damage and loss on cultural heritage, tourism facilities and revenues and trends of tourist arrivals after the earthquake. The overall economic loss due to the earthquake was huge (Table-2). The total value of disaster effect (damage and loss) as estimated by NPC

(2015) was 706 billion or equivalent to US\$ 7 billion. Of that amount, NPR 517 billion (or 76 percent of the total effects) represents the value of destroyed physical assets, and NPR 189 billion (24 percent of the total effects) reflects the losses and higher costs of production of goods and services arising from the disaster. The total disaster effect (loss and damage) on tourism sector was more than 11 percent (Table-2).

Table-2: Disaster Effect of Earthquake on Tourism Sector (NPR Million)

Disaster effect	Total	Tourism sector	Percent of total
Damage	517434	18863	2.67
Loss	189027	62379	8.38
Total:	706461	81241	11.50

Source: Calculated from NPC, 2015.

The subsequent loss on revenue generation from tourism is huge. NPC (2015) estimated that the decline in revenue from ticket sales at monuments within the Kathmandu Valley was worth of NPR 600 million (US\$ 6 million) over the next 12 months. However, the exact estimation of disaster effects on livelihoods of local people is beyond the scope of present research.

Along with others, Nepalese tourism industries were severely damaged. As noted earlier, the earthquake affected about 2,900 structures with a cultural and religious heritage value. The estimated damage and loss of earthquake in cultural heritage sector (Table 3) shows that a total damage in heritage site was NRs 7875 million and loss amounting to NRs1409 million. Of the 10 cultural heritages of Kathmandu valley listed in the world heritage sites, 7 were damaged (NPC, 2015). Likewise, the damage and loss in monasteries and historic structures was estimated to NRs 8948 million. Total damage and loss in cultural heritage sector amounted to NRs 16910 million and 2312 million respectively. As estimated in Post Disaster Need Assessment Report, the total estimated damages to tangible heritage amounts to NPR 16.9 billion (US\$ 169 million).

Table-3: Estimated Damage and Loss from Earthquake in Culture/heritage Sector, 2015

Subsector	Disaster effects (NPR Million)		
	Damage	Loss	Total
Heritage site in 16 districts	7875	1409	9284
Monasteries and historic structures	8135	813	8948
Temple in remote areas	900	90	990
Total:	16910	2312	19222

Source: NPC, 2015.

Heavy damages and losses were reported in hotels, home stays, eco-lodges and trekking routes (Table-4). These damages were most concentrated the popular tourist destinations in Langtang, Gorkha-Manaslu, Khumbu, Charikot, Kalinchok, Jiri, Dhanding, and the Rolwaling area. The total damage in hotel properties was estimated at NRs. 16295 million. Estimated damage in home stays and eco lodges was NRs 1720 million and NRs 415 million respectively. Likewise, most of the trekking routes in these areas were obstructed. Loss in tour operator sector was also huge, estimated to NRs 4924 million. Many people who based their livelihoods directly or indirectly on these sectors lost their jobs. A heavy loss in revenue collection was observed from tourism, air transport and restaurant due to sharp decline in the number of tourist arrivals.

Table-4: Estimated Damage/loss from Earthquake on Tourism Sector, 2015

Subsector	Disaster effects (NPR Million)		
	Damage	Loss	Total
Hotels	16295	-	16295
Home stays	1720	495	2215
Eco lodge	415	-	415
Trekking trails	46	5711	6137
Tour operator	7	4924	4931
Tourism revenues	-	47013	47013
Air transport revenues	-	4720	4720
Restaurant revenues	-	11	11
Total:	18863	62874	81373

Source: Derived from NPC, 2015.

Impacts on Economy and Livelihoods

The impact of earthquake can clearly be seen in the trends of tourist arrivals. Figure-2 compares the trends of tourist arrivals for nine months of two consecutive years 2014 and 2015 indicating the sharp decline after the earthquake. As reported in The Kathmandu Post, a daily newspaper, the tourist arrivals fell to a six-year low of 538,970 in 2015 after the April 25 earthquake. Nepal received 251,148 fewer tourists in 2015, the decline of tourist arrivals was almost 32 percent compared to the 2014 figure (Prasain, 2016). The impact of the killer quake was bigger for Nepal’s tourism industry with arrivals plunging 55.59 percent to 97,510 during the four-month period (May-August) following the disaster. However, the contribution of subsequent Tarai unrest cannot be undermined in this regard. The exact number of tourists was even low. The total figure of tourist arrivals (Figure-2) includes rescue personnel and volunteers who converged into Nepal to help the earthquake victims and were also counted as tourists. Harmful rumors especially from media are equally responsible among several factors, for this decline. The decline was sharp for two months of earthquake.

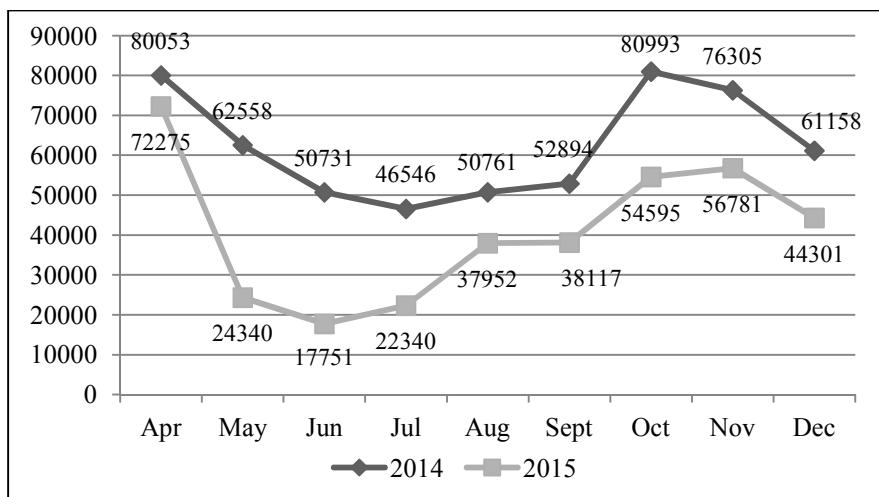


Figure-2: Trend of tourist arrival in Nepal

Source: Bhuj, 2016 (Republica Daily, January 12).

Tourism is a major economic driver and one of the main options of livelihoods of people of Nepal (Sharma, 2000) involving a large proportion of national workforce in providing different facilities to the tourist. The activities directly related to tourism includes hotels, travel/trekking agencies,

tourist/trekking guides, tourist police, porters and others. Besides, many people are involved in industries, micro-enterprises, transportation and other tourism related activities in producing goods and services to the tourists. The impact of earthquake on livelihoods of people who depend on these activities was huge. All these activities were almost paralyzed for long due to earthquake and many people lost their jobs. Many people especially low income earners- laborers, porters and women were severely affected. According to NPC (2015), the earthquakes affected the livelihoods of about 2.287 million households and 5.6 million workers. And the losses across the affected districts amounted to 94 million workdays and NPR 17 billion of personal income in FY 2015-2016.

CONCLUSIONS

The devastating Gorkha earthquake has resulted in significant negative impacts on the tourism industry, national economy and people's livelihoods based directly or indirectly on tourism in Nepal. The impact of earthquake is clearly observed on the trend of tourist arrivals after the earthquake, which was declined sharply. Among others, the rumors especially from media were equally responsible for this decline. The inbound tourism data was below pre-earthquake levels even after nine months of the earthquake. The industry has still not bounced back to where it was before the earthquake. The need for recovery is immediate and urgent. The recovery of tourism business is closely linked with the rebuilding of tourism infrastructure and cultural/religious attractions of touristic importance that were destroyed by the earthquake. And the development of tourism business is closely tied with the timely reinstating of important tourism infrastructure that will drive future tourism businesses of the country.

WORKS CITED

- Bhujju, K. (2016, January 12). "Visitor numbers in 2015 not so low but tourism suffered." *Republica daily*. p. 1.
- Central Bureau of Statistics (CBS). (2012). *National population and housing census, 2011*. Kathmandu: CBS.
- Dahal, R.K. (2015). Engineering geological issues after Gorkha earthquake 2015 in Nepal - a preliminary understanding, Paper presented in 10th *Asian regional conference of IAEG (2015)*, Retrieved from <http://www.ranjan.net.np/index.php/resources/geology-of-nepal>
- Gautam, B.P. (2011). "Tourism and economic growth in Nepal, *NRB. Economic review*, 32 (2).

- Government of Nepal GoN (2009). *National strategy for disaster risk management, 2009*. Kathmandu: Ministry of Home Affairs.
- GoN (2015). *Economic survey, fiscal year 2014/15*, Kathmandu: GoN, Ministry of Finance.
- GoN & UNDP. (2014). *Nepal human development report 2014: Beyond Geography, Unlocking Human Potential*. Kathmandu: GoN and UNDP.
- Jibanai, Z. (2014). "Is the tourism industry a fragile heavy weight? Validation through a literature review of tourism system shocks." *Journal of tourism management research*. 1(1): 1-13.
- Kruk, E., Hummel, J. & Banskota, K. (Eds.) (2007), *Facilitating sustainable mountain tourism*, (Vol. 1 Resource Book). Kathmandu: ICIMOD.
- Ministry of Culture, Tourism and Civil Aviation. (2015). *Nepal tourism statistics 2014*. Kathmandu: Author.
- Murakami, K.H., Kawamura, H. & Suzuki, K. (2012). "Analyzing the impact of earthquake on tourists' activity: Travel blog mining." *International journal of advancements in computing technology (IJACT)*, 4(22), doi: 10.4156/ijact. Vol. 4. issue 22.27.
- National Planning Commission (NPC) (2015). *Nepal earthquake 2015: post disaster needs assessment* (Vol. A: Key Findings). Kathmandu: NPC, Government of Nepal.
- Orchiston, C., Vargo, J. & Seville, E. (2012). *Outcomes of the Canterbury earthquake sequence for tourism business*. Resilient Organisations Research Report 2012/09, ISSN 1178-7279.
- Prasai, S. (2016, January 22). "Arrivals hit 6-year low as quake, agitation take toll." *The Kathmandu Post*. p. 1.
- Sharma, P. (2000), "Tourism and livelihood in the mountains: Regional overview and the experience of Nepal." In M. Banskota, T.S. Papola and J. Richter (eds.), *Growth, poverty alleviation and sustainable resource management in the mountain areas of South Asia*. Kathmandu: ICIMOD.
- The World Travel and Tourism Council. (2012). *The Tohoku pacific earthquake and tsunami: Impact on Japan travel and tourism*. London: Author Retrieved from www.wttc.org.

The World Travel and Tourism Council. (2014). *Travel and tourism: Economic impact 2014 Nepal*. London: Author, Retrieved from www.wttc.org.

UNESCO (2006). *Impact of the tsunami on the tourism industry and ecosystem of the Andaman and Nicobar Islands, India*. South-South Co-operation Programme Working Paper Number 36

United Nations Secretariat for the International Strategy for Disaster Reduction (ISDR) (2001). *The socio-economic consequences of the earthquake at Izmit, Turkey (17 August 1999)*. New York and Geneva: United Nations.