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The Impact of Natural Disasters on Economic Growth: A Study of Kerala Floods

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Abstract

Natural disasters have potentially large economic impacts on developing nations. There is a small, but growing literature analyzing these impacts on variables such as gross domestic product. In this study the state of Kerala are studied to measure the impact that disasters have had on economic growth especially tourism industry. It is hypothesized that the number of natural disasters that a country faces has a negative impact on economic growth rate as measured by GDP. As the quantity of disasters experienced in any given year increases the overall disruption of the economy is predicted to be greater, thus leading to lower levels of economic growth in the short term. The causes of the high frequency of severe natural disasters have become popular research topics, and the findings have improved the understanding of the relationship between human activities and the environment. However, the exploration into the relationship between natural disasters and long-run economic growth in Kerala tourism has not been minimal. This paper fills this gap by investigating the economic effects of post-disaster rebuilding activities in the current Kerala economic environment.

Keywords: Natural Disasters, Economic Growth, Tourism, Kerala.

Introduction

In late August 2018, severe flooding affected the south Indian state of Kerala due to unusually high rainfall during the monsoon season. It was the worst flooding in Kerala in nearly a century. Over 445 people died, 15 are missing within a fortnight, while at least a million 45 people were evacuated, mainly from Chengannur, Pandanad, Aranmula, Aluva, Chalakudy, Kuttanad and Pandalam. All 14 districts of the state were placed on red alert. According to the Kerala government, one-sixth of the total population of Kerala had been directly affected by the floods and related incidents. The Indian government had declared it a Level Calamity or 'Calamity of a severe nature'. Thirty-five out of the fifty four 13 dams within the state were opened for the first time in history. All five overflow gates of the Idukki Dam were opened at the same time, for the first time

in 26 years. Heavy rains in Wayanad and Idukki have caused severe landslides and have left the hilly districts isolated². The situation was regularly monitored by the Prime Minister and the National Crisis Management Committee coordinated the rescue and relief operations

Table 1: Rain Fall from 1 June 2018-17 August 2018

District	Rainfall (mm)	Normal (mm)	Increase %
Alappuzha	1648.1	1309.5	29%
Ernakulam	2305.9	1606	48%
Idukki	3211.1	1749.1	89%
Kannur	2450.9	2234.9	10%
Kasaragod	2549.94	2489.1	12%
Kollam	1427.3	985.4	51%
Kottayam	2137.6	1452.6	50%
Kozhikode	2796.4	2156.5	30%
Malappuram	2529.8	1687.3	52%
Palakkad	2135	1254.2	75%
Pathanamthitta	1762.7	1287.5	44%
Thiruvananthapuram	920.8	643	45%
Thrissur	1894.5	1738.2	16%
Wayanad	2676.8	2167.2	26%
Kerala			

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Causes Heavy Flood In Kerala: Kerala received heavy monsoon rainfall on the mid evening of August 8 resulting in dams filling to capacity; in the first 24 hours of rainfall the state received 310 mm (12 in) of rain. Almost all dams have been opened since the water level has risen close to overflow level due to heavy rainfall, flooding local low-lying areas.¹⁸ For the first time in the state's history, 35 of its 13 dams have been opened³.

Most of the regions affected by this monsoon were classified as ecologically-sensitive zones (ESZs) by the Western Ghats Ecology Expert Panel, the Gadgil Committee. Most of the recommendations and directions by the committee was either neglected or rejected. Chairman of the committee Madhav Gadgil accused the state government and its irresponsible environmental policy for the recent landslides and floods. The Government of Kerala argued in the Supreme Court that the sudden release of water from the Mullaperiyar Dam by the Tamil Nadu government was one of the reasons for the devastating flood in Kerala⁴. The Tamil Nadu government rejected the argument saying that Kerala suffered the deluge due to the discharge of excess water from 80 reservoirs across Kerala, spurred by heavy rains from within the state; It also argued that the flood surplus from the Idukki dam is mainly due to the flows generated from its own independent catchment due to unprecedented heavy rainfall while the discharge from Mullaperiyar dam was significantly less.

Though it is difficult to attribute a single event to climate change, its possible role in causing the heavy rainfall event over Kerala cannot be discarded²⁴. Recent research indicates that rising temperatures have led to huge fluctuations in the monsoon winds carrying the moisture from the Arabian Sea, resulting in heavy-to-extreme rains over the Western Ghats and central India, lasting for two to three days.

Impact of Flood in Kerala: A state official told AFP that 370 people have died, while The Economic Times has reported that 33,000 people have been rescued.⁸²⁶²⁷ The Kerala State Disaster Management Authority has placed the state in a red alert as a result of the intense flooding.²⁸ A number of water treatment plants were forced to cease pumping water, resulting in poor access to clean water, especially in northern districts of the state. Over 5,645 relief camps⁴ have been opened at various locations to accommodate the flood victims. It is estimated that 1,247,496 people⁴ have found shelter in such camps.³⁰³¹ The flooding has

affected hundreds of villages, destroyed an estimated 10,000 km (6,200 mi) of roads and thousands of homes have been damaged or destroyed⁵. The Government has cancelled Onam celebrations, whose allocated funds have been reallocated to relief efforts.

Kerala Economy and Tourism: Tourism is an important contributor to the growth of service sector in Kerala. The total revenue (including direct and indirect means) generated from tourism during the year 2015 comes to 26,689.63 crores showing an increase of 7.25 per cent over the last year. During the last decade, the total revenue from tourism registered a compound annual growth rate (CAGR) of 11.33 per cent. It grew from 7,738 crores in 2005 to 26,689.63 crores by 2015. The annual growth rate of income from tourism reveals a fluctuating trend between 2005 and 2015. Between 2013 and 2015, a declining tendency of the growth rate was noticed: from 12.22 per cent in 2013 to 7.25 per cent by 2015.

Table 2: Contribution of Tourism Sector to Total Employment between 2009 and 2015, in per cent

Share in Employment (in per cent)			
Country/ State	Direct Impact	Indirect + Induced Impact	Total Impact
India	4.4	5.8	10.2
Kerala	9.9	13.6	23.5

Foreign Exchange Earnings: The foreign exchange earnings from tourism increased from 1552.31 crores in 2005 to 6949.88 crores by 2015 registering a CAGR of 14.6 per cent. The earnings from foreign tourism showed a steady increase over the years, except for the year 2009 when the global financial crisis affected the flow of foreign tourist Arrivals and led to a decline in foreign exchange earnings. Figure 9.8 captures the data on foreign exchange earnings of Kerala over the last ten years⁷.

Table 3: Allocation and Expenditure on Tourism in the State Plan over Various Plan Periods, in lakh

Period	Total Plan Outlay	Outlay for Tourism	Percentage share of Tourism	Actual Expenditure
I Plan	3003	—	—	—
II Plan	8701	13	0.15	8
III Plan	17000	50	0.29	22
Annual Plan	14254	31	0.22	19

Period	Total Plan Outlay	Outlay for Tourism	Percentage share of Tourism	Actual Expenditure
IV Plan	25840	50	0.19	55
V Plan	56896	71	0.12	79
Annual Plan	39296	130	0.33	132.27
VI Plan	148755	672	0.45	556.8
VII Plan	221100	850	0.38	833.69
Annual Plan	144200	650	0.45	816.95
VIII Plan	687648	5301	0.77	5707.85
IX Plan	1575500	19266	1.22	17397.8
X Plan	2522643	2777	0.11	2487.68
XI Plan	4560547	48873	0.15	61774
XII Plan	1E+07	110140	0.29	67506.24*

Objectives of Paper:

- To study the impact of Flood in the State of Kerala.
- To analyze the impact of Flood on Tourism Industry in Kerala.
- To compare the impact of Kerala and Other State

Research Methodology: The paper is based on secondary data. The data has been collected from internet and News papers, Graph and percentile method has been used to analyze the data.

Research Method :Netnography: Netnography is online ethnography conducted in a specific manner. It is an interpretive research method that adapts the traditional, in-person participant observation techniques of anthropology to the study of the interactions and experiences that manifest through digital communications (Kozinets 1998). The word “netnography” is a portmanteau combining “network” and “ethnography” and was a particular kind of research process which was developed and named in 1995 by Robert Kozinets during his dissertation research at Queen’s University on Star Trek fans. Netnography was originally a consumer research method, but use of the method has spread to a range of other disciplines, including education, library and information sciences, hospitality, tourism, computer science, psychology, sociology, anthropology, geography, urban studies, leisure and game studies, and human sexuality and addiction research.

Data Collection: In a netnography, data takes two forms: data that the researcher directly copies from the computer-mediated communications of online community members, and data that the researcher

inscribes. Although some netnographies have been conducted using only observation and download.

Data Analysis: Netnography is based primarily upon the observation of textual discourse, ensuring trustworthy interpretations requires a different approach than the balancing of discourse and observed behavior that occurs during in-person ethnography. Although the online landscape mediates social representation and renders problematic the issue of informant identity, netnography seems perfectly amenable to treating behavior or the social act as the ultimate unit of analysis, rather than the individual person.

Findings: Kerala Floods 2018: Flood-Hit Kerala’s Tourism Industry Grinds to a Halt. Kerala is reeling under the aftermath of the devastating flood, so do the tourism industry, which has been hit hard by the deluge. The southern state, which is considered as one of the top tourist destinations, is still recovering from the impact of floods that claimed lives of over 300 people.

The tourism industry in Kerala, which accounts for 12 percent of the state’s economy, has come to a grinding halt as the floods damaged roads, airports, rail lines, forcing tourists to cancel their trips. “International flights are cancelled. Since its Onam, and at the same time we have monsoon tourism, we expected good business but suddenly hotels, restaurants, and home-stays are empty,” he added. As the situation has subsided, the locals and the government are trying to bring Kerala back to normalcy. Tourism industry estimates losses worth Rs 20 billion due to Kerala floods.

The tourism industry in Kerala is estimating losses worth Rs 20 billion due to the floods which include Rs 15 billion as the opportunity lost during the last two months and another two to three months. Sabarimala, one of the major pilgrim centres in South India, has seen a loss of around Rs One billion and is expecting the situation to remain bleak during this pilgrimage season if at least a bridge is not built for the pilgrims to travel to the Lord Ayyappa Temple.

The properties were not affected except for Kumarakom. While the damage was massive in the hill stations of Munnar and Wayanad, properties were not affected, but the road connectivity has been affected. Tourism in Kerala is a Rs 300-350 billion industry. Opportunity lost due to the floods is expected to be at Rs 15 billion for the last two months and the next couple of months.

Conclusion

Kerala had witnessed 10.94 per cent growth in 2017, compared to the previous year, with 1.91 million foreign travellers and 14.6 million domestic tourists visiting the state⁸. Tourism contributes over 10 per cent to the state GDP. Kerala was promoting the Neelakurinji blooming in Munnar, which is still cut off from the rest of the state due to many landslides. The Neelakurinji blooms once in 12 years and has been a big draw for local public and of late, the tourism department has been promoting it to incoming tourists as well. Flooding on the scale seen in Kerala could have killed 10 times more people a decade ago, but India's disaster management capacity has improved significantly in that time Kerala received over 40 per cent more rainfall than usual this monsoon, forcing authorities to release water from dozens of dams, which compounded the flooding. But other man-made problems were also to blame. Kerala is one of India's wealthiest states and has seen rapid unplanned development in recent years, with luxury resorts, residential complexes, power plants and mines built on floodplains, often in violation of the rules.

Ethical Clearance: Completed

Source of Funding: Self

Conflict of Interest: Nil

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