
Tourism, Risk Management, Sustainability options, the India Story

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ABSTRACT

The 2004 Indian Ocean earthquake and tsunami, within hours in some cases brought sorrow to many countries, India too suffered with Tamil Nadu reporting damage and deaths in Chennai, Velankanni, Cuddalore, Kanyakumari, Poompuhar, and Nagapattinam to mention a few. It was the year end, and many were traveling to various places to spend time with family and friends in tourist centers. The reported deaths were 8000. All places of tourism of various hues. In 2013, the sudden rapid melting of ice and snow on the Kedarnath Mountain which in turn flooded *Chorabari* Lake upstream and eruption of the Mandakini River inundated the Pilgrimage town of Kedarnath, catching the pilgrims with surprise and the others who were unaware of the impending disaster downstream. The reported deaths were 5000. The heart of Pilgrimage tourism for the devout. ‘Gods own Country,’ Kerala in 2018 had to declare red alert in all its 14 districts, more than a million souls had to be evacuated from Chengannur, Aranmula, Kozhencherry, Ayiroor, Ranni, Pandalam, Kuttanad, Malappuram, Aluva, Chalakudy, Thrissur, Thiruvalla, Chellanam, Vypin Island, Palakkad, the list is endless; More than 490 were reported dead, 15 missing. The severe floods, due to high rainfall, land-slides which made small villages and towns disappear; was scary. Kerala is a known tourism hub. Whether it is tourism or ecotourism, one question asked, are we prepared for any Disaster that may occur at any point in time? Are the Destination Management Organizations prepared to face any eventuality. The research paper is a work in progress and makes an effort to answer questions from across India through case studies, if the Tourism system indeed is ready to face disasters.

Keywords—Tourism/Ecotourism, disaster, preparedness, tourists

1. Introduction

Events like earthquakes, tsunamis, floods, bush fires, hurricanes, droughts and heatwaves have always occurred and these events have formed part of the wider ‘riskscape’ that humans have learned to manage and live with (Rossello et al., 2020). Shondell-Miller (2008) mentions, that disasters constitute abrupt changes that shock the system in which tourism is embedded. Jin (et al., 2019) believe that most disasters have profound impacts on individuals, organizations and communities, and consequently on tourism activities. Ilan Kelman (Bath Spa Geography, 2023) succinctly put it, ‘disasters are not natural – but do not blame climate change,’ and he spelt out in a phenomenal way, “a disaster is a situation requiring outside help for coping,” which stands out in helping the layman and the professional to understand the nuances. Kelman (2020) in his well-researched *Disaster by Choice*, states in crystal clear words, “...we feel the need to fight natural forces, to reclaim what we assume is ours, and to protect ourselves from what we perceive to be wrath from outside our communities. This attitude distracts us from the real causes of disasters: humanity's decisions, as societies and as individuals. It stops us accepting the real solutions to disasters: making better decisions..... there is no such thing as a natural disaster. The disaster lies in our inability to deal with the environment and with ourselves.” The repercussions of a disaster are likely to affect tourism directly at a destination country, but indirect consequences for travel to and from the affected region

are also conceivable. Disasters have been striking various regions of the world as long we can remember. As Wang (2009) whilst mentioning the disasters that included; i) the Asian Financial Crisis of 1997; ii) the earthquake of 1999; iii) the September 11, 2001 attacks on the United States of America and iv) the outbreak of SARS in 2003 in Taiwan created a multitude of issues for the region; states, prior literature on the impact of natural disasters on tourism provided evidence that the tourism industry could be significantly affected by the disasters immediately after the crisis event; however, these destinations could always resume or exceed its former production values within a period of just one to two years. This is a clear construct, which means, that the tourism system has to learn and unlearn from the past issues and problems that occurred in a destination and evolve, curate and develop methods of disaster prevention, thereby ushering in a scenario of improvement that will provide for confidence in the tourism system and help the industry to mitigate and move ahead. Sunil Varghese (Varghese, 2021), Director with Dune Wellness Group (<https://dunewellnessgroup.com>), was a witness to his resort north of Pondicherry in the Villupuram District of Tamil Nadu being destroyed on account of the 2004 Tsunami and the land that was close to the sea, further went saline. Freeda (2021) writes, Dimitri Klein and Sunil Varghese ensured the disaster of 2004 Tsunami did not stop them, they rebuilt and planted saplings and grew vegetables in the forty acres of land that they held in a sustainable manner and drew best practices from across the world. Clearly, we see that, though places remain vulnerable to hazards; but the entrepreneurship ensures that there is an element of mitigation towards further disaster that one can anticipate, having seen on.

It is not only about the disaster that occurs in a destination or a region that attracts tourists from all over. It is how one can mitigate, prior to the disaster and manage the incidence of destruction and impact on human beings or how one can spring-back once the disaster has struck a tourism destination. Jin (et al., 2019) states, since the tourism industry could be struck at different levels by different types and scales of crisis events, an advanced understanding of the impact of the crisis events would aid the tourism industry and relevant authorities for policy-making and strategy planning purposes.

2. Indian Tourism, Disaster issues and the vulnerabilities

Kundan (2018) speaks about the fact that the Indian Nation is undoubtedly a paradise for the tourists, it is clear that India will witness massive growth in the tourism industry from the domestic and Foreign Tourism Arrival (FTA) perspective. But it is also a bitter truth that India though Max Muller in his *India: What can it Teach us* states, “if I were to look over the whole world to find out the country most richly endowed with all the wealth, power and beauty that nature can bestow, in some parts a very paradise on earth, I should point to India.....” (Singh, 2018). The same India; is the world's most disaster-prone area in which 59% of land is vulnerable to earthquakes; 8.5% of land is vulnerable to Cyclones and 5% of land is vulnerable to Flood (Mohapatra et al., 2012). It is clear, as mentioned by McEntire (2014), the vulnerability is the exposure of being harmed on account of a disaster and the ‘gaps’ that exist between proactive and reactive approaches to disaster; which further helps in the preparedness and the aspects of response that we are able to create in a scenario. Kundan (2018) further elucidates, scholars have contested on the notions of hazards and vulnerability. Manandhar and McEntire (2014) speaking about disasters, development and resilience, the need to explore the comprehensive nuances of vulnerability management; state that, a catastrophe happens when hazard interacts with vulnerability. This sums up the way we in India would respond to a disaster or an impending disaster. Clearly from an essence of philosophy and science, we as a nation that needs to be clear on our approach to the vulnerabilities of nature, that will lead to disasters that are imminent, it is our preparedness and the attitude that we espouse as a nation and as a people.

3. Kedarnath, the unprecedented event of 2013

‘The Kedarnath floods may be only a small precursor to never-seen-before mega floods,’ says Maharaj K. Pandit, Director, Centre for Inter-disciplinary Studies of Mountain and Hill Environment,

Delhi University (Jolly, 2013). Many Scientists believe that the high precipitation on June 16, 2013 rapidly filled up Chorabari Tal, a glacial lake less than 4 km upstream of Kedarnath, and the continuing downpour the next morning caused the lake to overflow and possibly burst out from its loosely packed rim of moraines (glacial sediments) and the rest is history, Kedarnath was marooned, Rambara, a village downstream disappeared, literally to say from the face of earth. Kedarnath, at that point was bustling with pilgrims, when disaster struck and more were enroute on the sixteen kilometers trek (see Illustration 1) journey as stated by Kedarnath Temple (n.d.) from Gaurikund and some were returning after the pilgrimage.

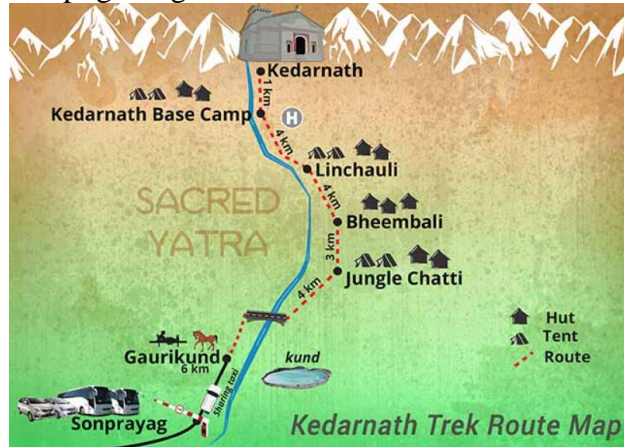


Illustration 1. Kedarnath Trek Route Map (Kedarnath Temple, n.d.)

Kedarnath is an important pilgrimage centre in what has been referred to as the *Dev Bhoomi* (Land of the Gods) that is Uttarkhand (Juyal, 2023). A look at the statistical information of the Government of India, Ministry of Tourism is very critical about the number of visitors who come to the Land of Gods, for Pilgrimage, Leisure, Adventure from far and wide (Table 1). Gupta et al., (2018) state that Uttarakhand was carved out of north western Uttar Pradesh (UP) on 9 November 2000, as the 27th state of India. The state covers a total geographical area of 53,483 sq. km of which 86% is mountainous and 65% is covered by forests. It shares international boundaries with China (Tibet) in the north and Nepal in the east. The Indian states of UP and Himachal Pradesh lie on its southern and north western boundaries respectively. The average annual rainfall of the state is 1896 mm and average annual temperature is 21.8°C (ref. 19). These factors along with altitude which varies from 560 to 7816m resulting in multitude of landscapes, which entice visitors throughout the year.

| | 2017 (MoT, GoI, 2019) | 2018 (MoT, GoI, 2019) | 2019 (MoT, GoI, 2021) | 2020 (MoT, GoI, 2021) | 2021 (MoT, GoI, 2022) |
|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Domestic | 34359989 | 35609650 | 37585920 | 7005264 | 19434475 |
| FTAs | 133725 | 151320 | 152273 | 41339 | 8532 |

Table 1. Visitors to Uttarakhand, Domestic and Foreign Tourist Arrivals (FTA)

Was Kedarnath sitting on a tinder box? Was an event of disaster waiting to happen? Was the destination taking more visitors than the carrying capacity? Were the geological and geographical changes being monitored? These were questions that would come to each of us who research in the domain of tourism. Kedarnath has had record visitors, along with the other Char Dham destinations, which by October, 2022 had a record or over 40 lakh pilgrims paying obeisance across the four destinations (Mishra, 2022). The data of visitors coming to Kedarnath can be seen from table (2) which has shown an ever-increasing number after the 2013 tragedy. A look at the numbers prior to the 2013 event and the aftermath will help assuage the direction in which we need to proceed.

| | 2017 | 2018 | 2019 | 2020 | 2021 |
|--------------------------|-----------------------------|-------------------|--------------------|-----------------------------|------------------------------------|
| Domestic visitors | 471235 (Sacred Yatra, n.d.) | 732241 (HT, 2022) | 1000821 (HT, 2022) | 134881 (Sacred Yatra, n.d.) | 242985 (Uttarakhand Tourism, n.d.) |

Table 2. Kedarnath Tourism Statistics (2017 to 2021)

True, the question is are we making an effort to understand the event not only for Kedarnath but for the other sensitive destinations. A look at the data from 2012 to 2016 will help us to assess, what needs to be done and how we should ensure carrying capacity or manage the visitor swell? A typical ‘V’ curve can be seen in the way Kedarnath attracted visitors, nay, let’s say, pilgrims; though in 2014 there was a dip to an extent where only 40832 visited the place of worship despite the devastation (Illustration 3).

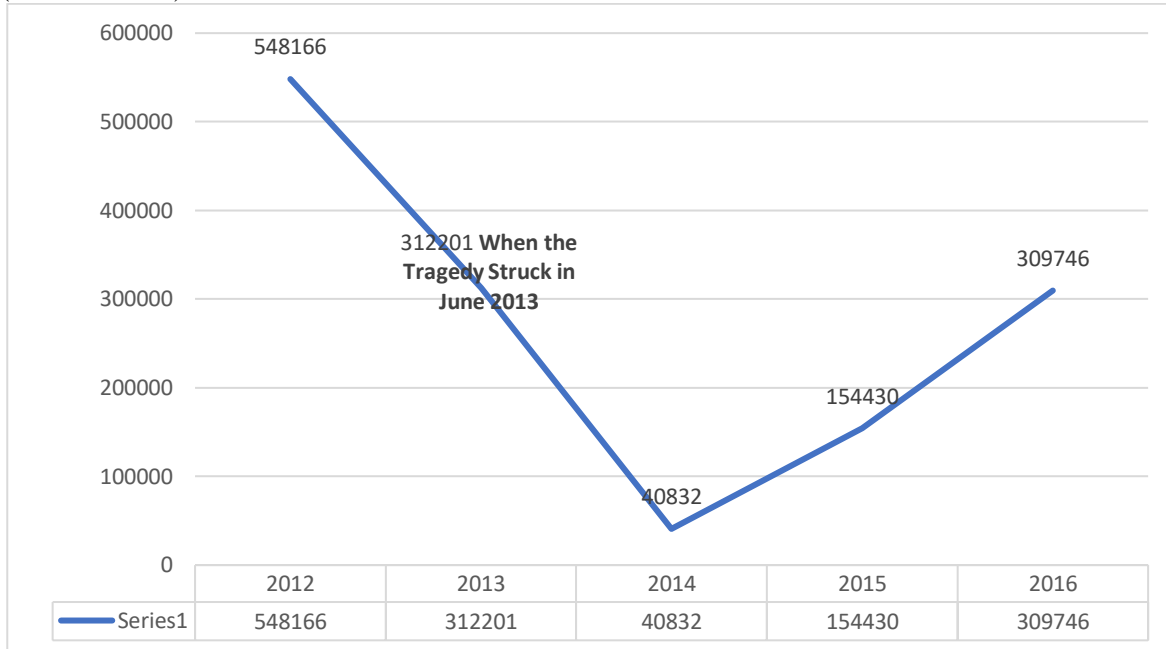


Illustration 2. Domestic Visitors to Kedarnath from 2012 to 2016 (Sacred Yatra, n.d.)



Illustration 3. Kedarnath temple view after the Disaster (Adobe, n.d.)

Speaking about Disaster Risk Reduction (DRR) and Communication, Palandurkar & Patel (2022) note that, Kedarnath, was affected by two distinct events in the summer of 2013. First, a minor flash flood from the Saraswati catchment was recorded at 1745 hours on June 16. Second, a flood-cum-debris flash flood was recorded at 0645 hours on June 17 due to the overflowing of the Chorabari lake (Illustrations 4 and 5). The overflow of the lake is attributed to more than adequate precipitation in the region since June 6 that increased the lake volume and led to a peak discharge of 1352 cumecs (cubic meters per second) and an avalanche that led to the breaking of moraine dam. Jolly (2013) reported that, the two researchers of the Dehradun based, Wadia Institute of Himalayan Geology’s (WIHG) glaciology station, located at the base of Chorabari Lake (Illustration 5), recorded their observations with an innate sense of foreboding; that the ‘lake was filling up too fast’ and trouble was

inevitable. The researchers saw the tent and the lake rim collapse and getting washed away, only saving their lives by a whisker as they clambered up a hill and reported to their Scientists much later.

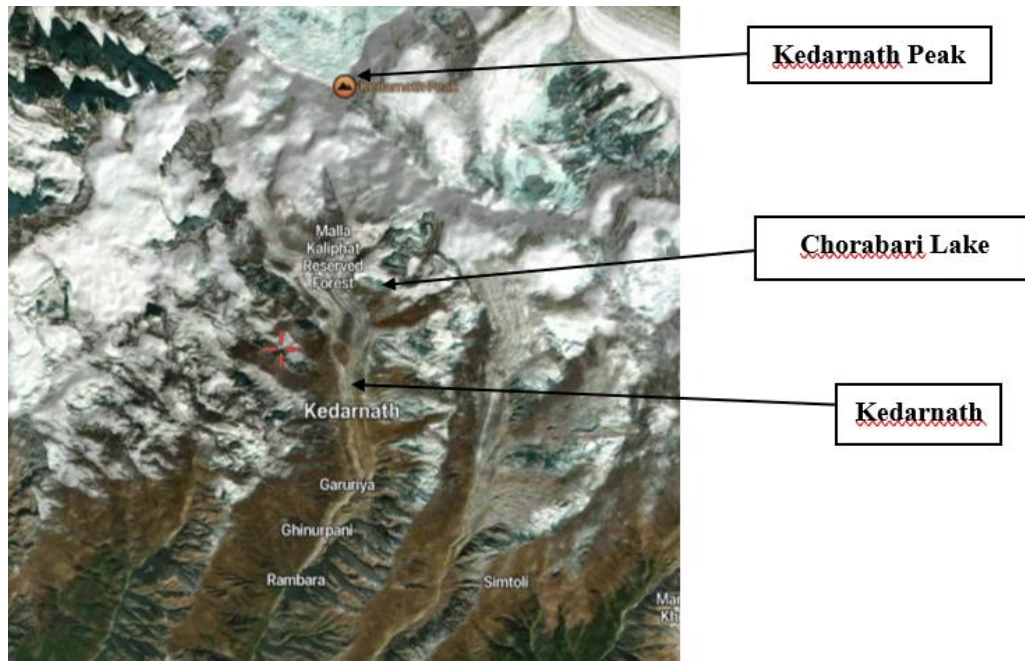


Illustration 4. Satellite Picture depicting the location of Kedarnath Pilgrim Site and Chorabari Lake (Satellite Pro, n.d.)



Illustration 5. Satellite Picture of Chorabari Lake (Satellite Pro, n.d.a)

Speaking with Ashutosh Chandel (Chandel, 2022), a Tour Operator (www.caremytrip.com) in Dehradun who is known for quality tour options to Char Dham and other destinations across India, mentions, “if 2013 was an alarm, 2021, Chamoli hydro power disaster was a wake up for each one us.” Ashutosh states, “I do not want to put the visitors at risk who come with the best of religious fervor and those on a holiday come to take back the best of memories.” His question was, “what is to be done?” He continues, “Tourism, in all its essence, be it pilgrimage, adventure, Yog, Ayurved or just leisure cannot be stopped.” Ashutosh further mentioned, there is “over tourism and the travel trade is aware of the same, it has led to hotel accommodation facilities that squeeze through in places which should be left open. The visitors want it and the tourism system makes its efforts to provide for it.” “There should be sensitization to ensure that the carrying capacity of these fragile places, are managed well, without any risk to the visitors and the local community alike.” When the researchers queried about the carrying capacity; Mr. Ashutosh (Chandel, 2022) mentioned, “yes, if the Government places a limitation, a restriction on the numbers, then, yes all will follow, but then, it is all about the numbers, that has brought economic activity in the *Dev Bhumi*.” Post the 2013 episode at Kedarnath was there a decline in the visitation rates (VR); the immediate answer is a yes, 2014 the numbers dipped to 40,832 (Sacred Yatra, n.d.) (Illustration 2); but once the event was being forgotten,

the numbers went on the rise (Table 2). Ashutosh confirms this and mentions, “we had a lot of queries and some prospective visitors said, keep us in a safe place such that we do not get stuck in any unfortunate tragedy.”

4. Gaja Cyclone and the impacts on Kodiakarai to Kodaikanal, Tamil Nadu

Kishore Shivagupta (Shivagupta, 2022), runs an eCommerce small medium enterprise (SME) called Trip Kraft based in Bengaluru, which curates, customized outbound, and domestic holidays for travelers and himself an avid traveller, mentions, “disasters are a dampener to the travel business, big or small. We saw Covid-19 bringing the travel trade down to its knees; this is nothing short of a human-made disaster and we were not prepared for it. Natural disaster (s) will spring a surprise to anyone, tourism and travel business is just one spec of the economic system.” Kishore adds, “we were curating tours to Kerala and the hill stations of Tamil Nadu when some of the floods occurred and Gaja cyclone, which hit the Tamil Nadu coast, meandered hinterland and created a chaos in the Dindigul district, Kodaikanal to be exact.” “It just happened,” mentions Kishore. “We could not do anything, there was no connectivity of any kind; the travelers for whom I had customized a six-day tour, were simply not reachable for about two-days.” He further adds, “we cannot blame anyone for any natural event that occurs, that leads to a disaster; but prior knowledge will surely help to plan or create a mitigation plan; but then, disasters are sudden events, one just needs to pray that there is no loss of life.”

It is not that, Kodaikanal was the first to get affected by Gaja, the landfall was near Nagapattinam, and Kodiakarai which is place of tourist importance was the first to get hit. Swarna (et al., 2022) speaking about Kodiakarai mentions that, Kodiakarai village appears to be non-descript and beyond the reach of visitors; but it opens a mosaic of Ecotourism opportunities, which bring in variety to the Community Based Ecotourism (CBE) model through the Ecotourism Management Committee (ETMC), special purpose vehicle (SPV) in Tamil Nadu, and thereby becomes a role model, a best practice bench mark for the forest administrator and the community. The ETMC was established in 2014. A Birders Paradise, Point Calimere is a wetland complex that has been given the Ramsar Site Status in 2002. It plays host to thousands of migratory birds that come from far flung areas, and the Greater Flamingos too are important and unique visitors. Geographically, the sanctuary is a site of mudflats, mangroves. Mariappan (2013) states that the wildlife sanctuary was set up on 17.26 sq. km. of swamp land in 1967 for the conservation of Blackbuck, and endangered and endemic species and the Government of Tamil Nadu has expanded Point Calimere Wildlife Sanctuary by adding 12,407.27 hectares of the Great Vedaranyam Swamp in Tiruvarur, Nagapattinam and Thanjavur districts. With a need to protect and develop the fauna and flora of the area, the Tamil Nadu Forest Department (TNFD) has brought the reserve forests of Muthupet, Thuraikadu, Vadakadu, Maravakadu, Thamarankottai, Palanjur in Pattukottai and Thiruthuraiipoondi taluks and Kodiakadu of Vedaranyam taluk, under the new wildlife sanctuary. Kodiakarai Village in Vedaranyam part of the Point Calimere Wildlife Sanctuary, (Vedaranyam Range, Nagapattinam Wildlife Division, Tiruchirapalli Circle) (10°17'16.08" N 79°51'54.36" E) according to Mr. Murugan (Murugan, 2022), the President of the ETMC, “Kodiakarai was one of the first to be hit by Gaja, the trees, were like small twigs, the fisherman boats were all over the place, the Kodiakarai tourist centre had to be shut because there was excess water. The animals in the sanctuary area suffered as the place got inundated. There were just small patches of land that could be seen. The famous salt pans in the Kodiakarai, Vedaranyam area stood still for a few days. Though we had a bulletin for the fishermen not to go to the sea; others suffered. Power failure, loss of mobile connectivity leading to loss of day visitors to the destination ensured further losses. We were making efforts to get back after the Covid-19 saga, Gaja played a bad role in our lives and pushed us back a few years behind, and we had to start from scratch again.” Following the landfall, the cyclone moved into the Tamil Nadu state and proceeded towards Thanjavur and other places, Kodaikanal faced the brunt. In fact, as one teacher of Geography

in a school in Kodaikanal, rightly observed, “very rare to have seen a cyclone cross peninsula India from coast to coast; Gaja was the one to watch.”

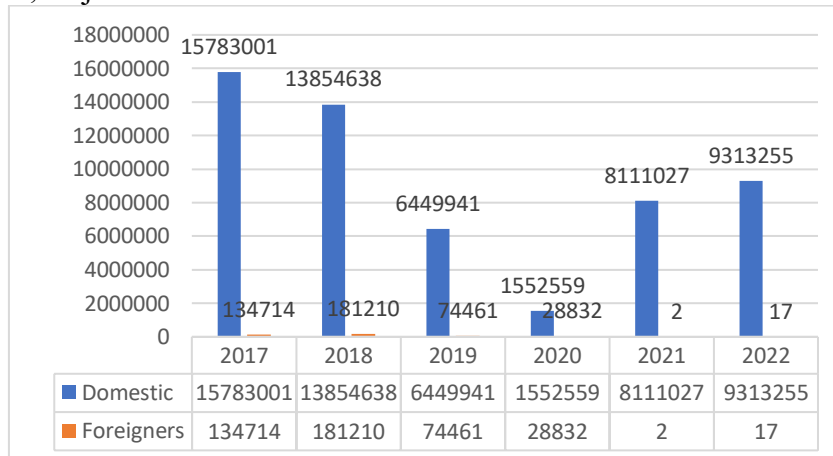


Table 3: Tourism Statistics for Kodaikanal. Source: Tourist Office, Kodaikanal. Note: Data for 2022 from January to October)

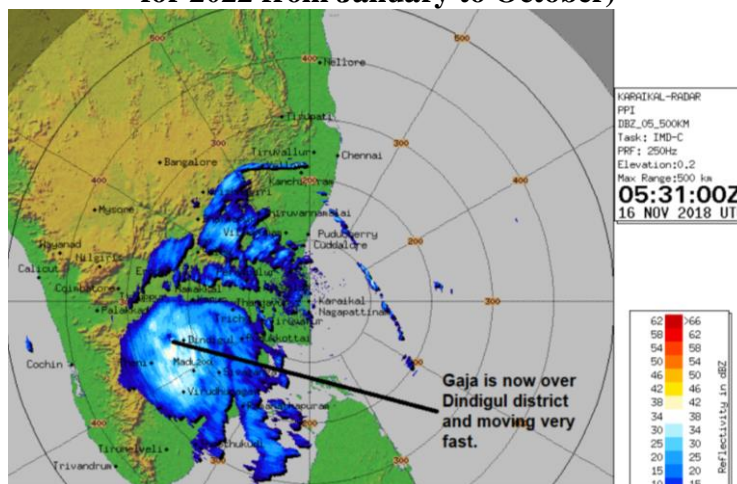


Illustration 6: Gaja over Dindigul District, where Kodaikanal is located. (Tamil Nadu Weatherman, 2018)

A tourism officer based in the Tamil Nadu Tourist Officer in Kodaikanal, who wanted to remain anonymous but provided for good information, mentioned that, “Gaja came as a surprise. Those who watch the weather forecast on Television; Gaja was enormous in its own way.” The officer mentions, “most of us thought, it will hit the Kodiakarai coast line and wither away; but then, nature had other plans.” “The Cyclone turned into Tamil Nadu and meandered so quickly that very soon it was knocking the doors of very well visited hill station, Kodaikanal; leading to a disaster; which none was prepared.” “Gaja struck us when we were asleep; the power lines, nearly 4285 electric poles (Karnik, 2020) were down, so too the mobile connectivity and internet. It was only in the wee hours of the morning that we realized that things were wrong; with power lines fallen, mobile towers immobilized; there was a standstill.” The officer also mentioned, “it took almost ten days for the power to come to normality in some places like Attuvampatti,” (Joseph, 2018). “We even heard of mudslides in a few areas leading to the closure of roads, which ensured, the tourists coming to Kodaikanal and those returning were stuck in the hill town,” the officer lamented.

TNN (2018) had reported, about hundred old trees had got uprooted and the road stretch between Battalagundu and Kodaikanal, the primary feeder road to the hill station, and from Perumalmalai to Pannakadu were blocked. The mudslides that triggered on account of heavy rains, saw four construction workers being buried alive as well. The rains, and the ensuing troubles that came about after November 16, 2018, were to be seen to be believed. Joseph (2018) reported that a popular tourist attraction, Berijam Lake; which allowed entry to a few vehicles on a day-to-day basis to ensure the

carrying capacity, was the worst affected, and mentioned that the District Forest Officer (DFO) of the day reported that nearly seven-thousand species of pine and eucalyptus trees were uprooted in the two forest ranges of Kodaikanal and Perumapallam. Clearly, a disaster that could not have been avoided; considering the fact that it took everyone unawares.

The research team also connected with a few of the local Tour Guides in Kodaikanal to understand how the Gaja Cyclone disaster had struck them. Bala, a local Tour Guide lamented, “if Covid-19 took away our livelihood, Gaja struck at a point in time, which is considered as the ‘off season,’ some even say, second season.” It is a time, besides, the locals from Tamil Nadu, visitors from Kerala, Karnataka and from the northern parts of India come in large numbers; there was sudden halt to the visitation by these group, which impacted every business in Kodaikanal area.” Taufeeq (Taufeeq, 2023) a tourism and hospitality entrepreneur from Poombarai about thirty-five kilometers from Kodaikanal stated that, “Gaja, it passed over the beautiful hill slope village of Poombarai and Kookal; which took the brunt of the cyclone.” He mentions, “the trees getting uprooted and the fear of mudslides, kept everyone away from these destinations for about three-weeks and we could not do much about the same.” Taufeeq, who organizes nature, treks and has tent accommodation in a place that can only be accessed by off road vehicles, stated, that, “a group of trekkers were stuck in his place for two-days till they were able to get to Kodaikanal and make their way back to their hometown; it was at that point in time,” he mentions, “if we had advanced knowledge of the natural events to happen, we could have brought the visitors out to safer zones and ensured safety for all concerned.” A *Gram Panchayat* ward member of the Kookal area who spoke with the researchers unofficially stated, “we do a lot of step cultivation, we were worried that the area will have landslides if the rain does not subside and cyclone moves away at the earliest.”

The researchers made a closer study of how one can access Kodaikanal, a popular hill station in Tamil Nadu for visitors from all over the country. One of the tour operators who did not want to air views officially, mentioned, that most if not all the five access routes are prone to trees getting uprooted and even mudslides. The routes from Palani (3), Adukkam (4) and Thandigudi (5) have seen the maximum trees being uprooted and mudslides. Though the main Batlagundu route too at times, which gets the maximum traffic has trees getting uprooted. When this is the case scenario, there is a disaster always waiting to happen. Gaja has proved the same. Hence, one needs to plan and ensure for the visitors, who spend a lot of money and resources and come to see Kodaikanal and other places nearby.

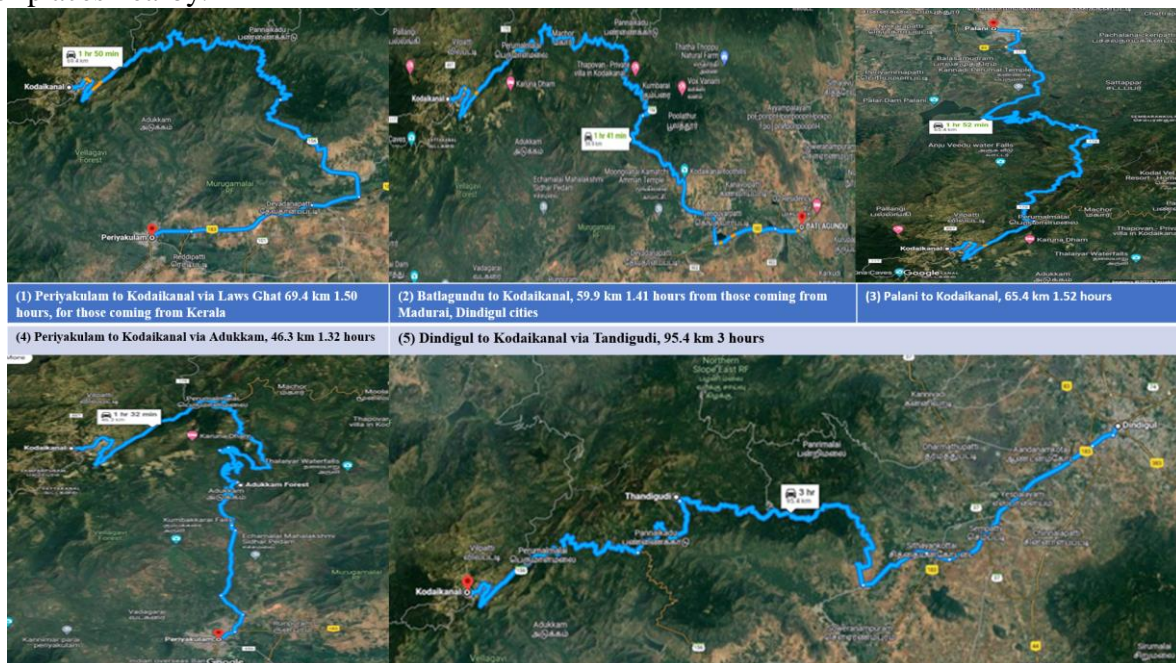


Illustration 7. The five routes to Kodaikanal (Map Source: Google Maps)

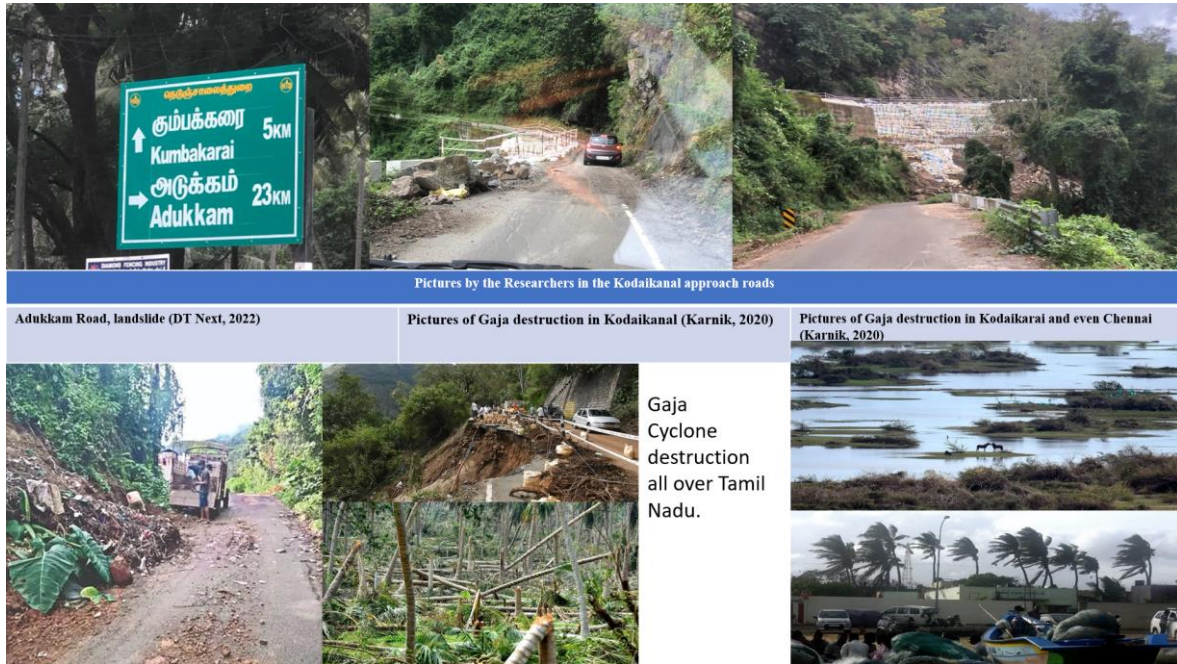


Illustration 8. Pictures of the destruction in the Kodaikanal and other areas.

5. Gods’ own country, faces the wrath of nature

Kerala a trendsetter in tourism and its various varieties; has created a niche for itself in a multitude of ways. Whether it is CBE or recreating house boats on the backwaters of Kerala, or the boat races; Kerala Tourism and all its stakeholders are trendsetters. The very concept that everyone in a district is involved in Tourism and its bounties was understood through the District Tourism Promotion Council (DTPC) headed by the Collectors, which functioned as a well-oiled machinery and engaged all of the community to work towards tourism and the economics that surrounds it. The Statistics (Table 3) of Domestic and FTAs is a clear indication where Kerala, often referred to as, Gods’ Own Country stands.

| | 2017 (MoT, GoI, 2019) | 2018 (MoT, GoI, 2019) | 2019 (MoT, GoI, 2020) | 2020 (MoT, GoI, 2022) | 2021 (MoT, GoI, 2022) |
|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Domestic | 14673520 | 15604661 | 18384233 | 498872 | 7537617 |
| FTAs | 1091870 | 1096407 | 1189771 | 340755 | 60487 |

Table 4. Kerala Tourism Statistics (2017 to 2021)

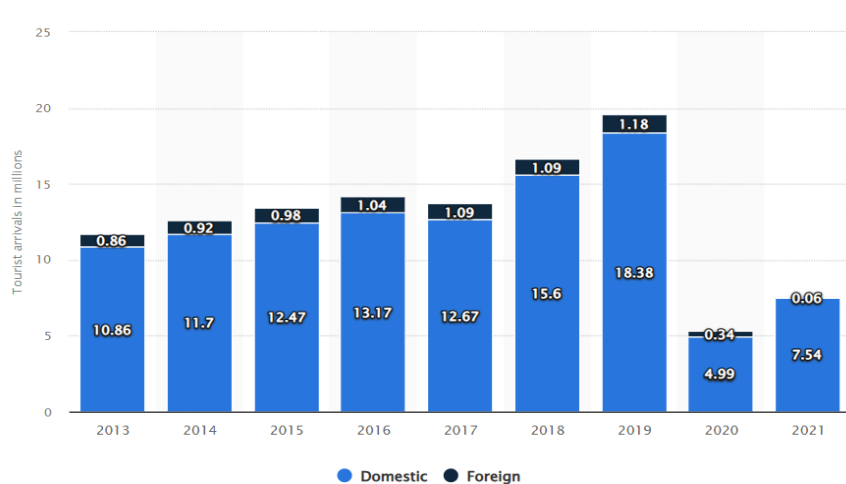


Illustration 9. Foreign and Domestic Tourism Arrivals across Kerala (2013-2021) (Keelery, 2022)

Visitors make a beeline to Kerala to visit various destinations because of the choices they have. Whether it is the hill areas of Kerala, or the beaches, the backwaters, the temples, the homestays, the boat houses, Ayurveda, Yoga, the treatment under health tourism, Kerala has it all. It is not only the domestic tourist but the FTA also are second to none in regards to Kerala. Besides, the people of Kerala who travel within, the top five states that send domestic holiday makers to Kerala is a clear indication that the tourism system is always in a welcome mood and provides for the best to the visitor. Table (4) clearly consolidates the argument for a two-year time frame of 2020 and 2021 (Kerala Tourism, n.d.).

| | State | 2020 | 2021 |
|---|--------------------------------|----------------|----------------|
| 1 | Kerala (Local Populace) | 6137243 | 3646520 |
| 2 | Tamil Nadu | 451473 | 379421 |
| 3 | Karnataka | 290096 | 299216 |
| 4 | Maharashtra | 153912 | 125713 |
| 5 | Andhra Pradesh | 67513 | 53943 |
| 6 | Delhi | 57943 | 68088 |

Table 4: Top five states in India that send Domestic holidays makers to Kerala (besides local tourists from Kerala)

Tamil Nadu and Karnataka, who are the immediate neighbours of Kerala, send in the maximum number of domestic tourists considering the proximity and the ease with which the visitors can travel by any mode of transport. Tamil Nadu has always occupied the number one position in regards to sending domestic holiday makers to Kerala, so much so, even in 2018 when the first great flood impacted Kerala in 2018 and all fourteen districts (Illustration 10) were placed on red alert (BBC, 2018), visitors from Tamil Nadu numbered 13.98 Lakhs (Business Standard, 2019). The story of Kerala and its tryst with the floods can be stated through the disasters that the state saw in 2018 and 2019 and continues to do so in the later years as well. The focus of this research will be on the 2018 and 2019 events, which created havoc in every walk of life.

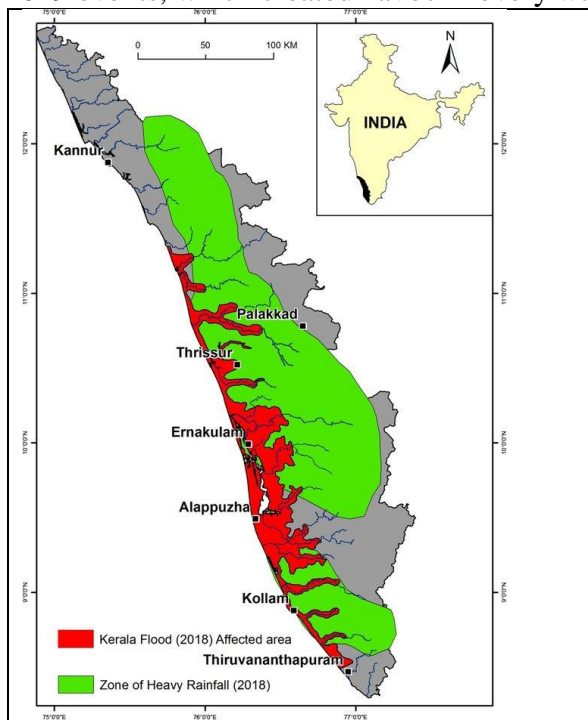


Illustration 10: Rain-and flood-affected parts of Kerala in the 2018 floods (Ramasamy, et al., 2019)

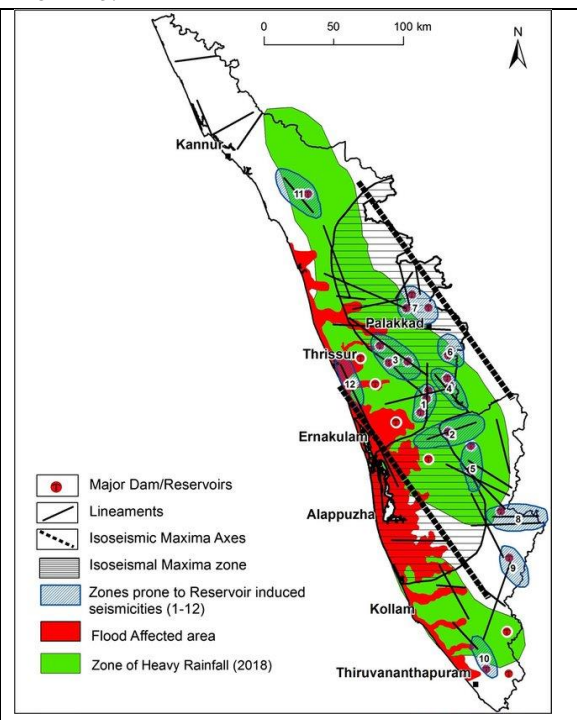


Illustration 11: Zones prone to reservoir-induced seismicity (Ramasamy, et al., 2019)

Kerala Floods of 2018:

Describing the floods of 2018 as the ‘worst in a century,’ Pinarayi Vijayan lamented that, “more than 223,000 people were living in 1500 emergency relief camps; in an event that has never happened in the history of Kerala” (BBC, 2018). Manoj (2019) in a research study had mentioned, so too, many others, the last deadly event witness in Kerala was in 1924. ToI (2018) had reported that nearly fourteen Lakh people had been displaced and 231 deaths had occurred, with umpteen number of individuals declared missing. Environmentalists too reported the cause of the floods and ensuing hazard leading to an unprecedented disaster; it was deforestation and failure to protect the ecologically fragile mountain range (Western Ghats) in the area were to blame. Besides, the Indian Meteorological Department (IMD) stating that rainfall in Kerala was abnormally high at 37% (BBC, 2018). Declared ‘calamity of a severe nature’ (Level 3 calamity) by the Central Government (Raghavan, 2018); teams from the Natural Disaster Response Force (NDRF) (www.ndrf.gov.in), National Disaster Management Authority (NDMA) (<https://ndma.gov.in>), Defence Forces, Central Armed Police Forces (CAPF) and the local administration in Kerala; led by the State Disaster Response Force (SDRF) were in full force in the rescue and relief operations. The public too has pitched in the rescue and relief measures by helping in the operations. Calling the Fishermen of Kerala, as ‘Supermen without Capes,’ ToI (2018b) had reported that about 18,000 fishermen had saved more than 54,000 lives in Ernakulam district alone.

A retired Government Employee, Mr. Mohandas (Mohandas, 2022), who earlier had served as the Secretary to the Wayanad DTPC in the first decade of the 21st century, mentioned, “it was unprecedented an event that happened in 2018; no one expected this, no doubt, the south-west monsoons come and go every year; it was the excessive rains and the flooding that created a ‘doomsday’ scenario for the state.” When the researchers asked Mohandas about the readiness of the states in regards to the hazards and disasters; his reply, was in the negative. Mohandas lamented, “when the economy and the economic activity especially in tourism and hospitality is going on well, none are bothered or even worried about an impending disaster, we face it, without answers and at times, there is an element of disbelief in one and all.” Mohandas, mentions, “we need to be prepared, for any eventuality, climate change, deforestation, excessive urbanization, new infrastructure projects have given opportunities for events of this kind; which not only take away the lives of people; but also, properties.” Mohandas with a teary eye mentioned, people who had houses and properties in the hill side, today, have none; considering that the landslide took away their homes along with family members and those who survived have to start life anew, literally from scratch.” When pressed by the researchers about what should the Tourism stakeholders do for ensuring the vicious cycle of ‘Disaster, respond, recover, repeat’ (UNDRR, 2020) is broken, he responded, “the tourism system will look up to the Government (State and Centre) to create a hazard or disaster mitigation scenario in the Tourist destinations. There should be capacity building for all those involved in Tourism through the DTPC and the Collectorate; which is the connect point to the Administration. The *Gram Panchayat* which is a major force should also play a dominant role as they are ones who have a direct connect with the community. Each of the citizen in any district, not only in Kerala, but any part of India, should be like an Emergency Response Team (ERT) member. The multitude of associations of Tourism and Hospitality organizations, resort owners, boat owners, should share the burden of at least contributing to a fund to the tune of 1% or 2% of their profits which will help in augmenting and assuaging the need for capacity building and wherever possible build infrastructure that will ensure minimum damage to human life and property; besides, this, afforestation programs and creating ‘zero’ harm to the environment will ensure that we are better prepared for any eventuality.” Mohandas ended the discussion, with an element of surrealism and stated, “2018 onwards, it has been floods and heavy rains; after we prepared for an earthquake close to Kerala in the Arabian Sea and an ensuing Tsunami.....the only aspect to be done is, be prepared.” Tourism, which accounts for 12% (Outlook, 2018) of the states’ economy that accounts for about INR 30,000 crores and provides employment to around 1.4 million people of the state (Sood, 2018); had come to a halt, the damaged

road, rail lines, airports, fear of landslides, disease, had ensured visitors had cancelled their trips to Kerala. Sood (2018) further reported that the districts of Alappuzha, Ernakulam, Idukki, Pathanamthitta, Thrissur and Wayanad, which have been most affected by the floods, were also among the top tourist destinations of Kerala.

The researchers found in the field study, that there were people willing to speak and discuss, but, did not want to make an official comment for any record or research. Most of them agreed, that the primary cause of the disaster, was human in nature, whether it was deforestation, or the excess water released from the dams, construction activity, climate change in its innate sense. What surprised the researchers, so to the readers of this papers will be the fact that once the great rain, and flood water receded, when communities were making efforts to get to normality; Kerala of 2018 had another disaster. Devasia (2018) reported that, "...after the flood: rivers dry up, mercury rises and earthworms die as state gears up for drought after deluge..." a clear indication that something was wrong, as a faculty member of Law, who wanted to remain anonymous, mentioned, "*vis major* (Latin)" (Superior force); it is surely the 'hand/act of God' in Gods own country. The researchers were not only astonished, but spoke further to realise that, we should stop playing with nature; it is natures' way of giving back or reclaiming what it has lost. It was a scenario that was untold, unheard leading to a lot of confusion in the minds of the people, who had seen a deluge, and now suddenly are without water, which impacted the crops and drought scenario created which led to all speaking of getting back to science and following the natures of doing things (Devasia, 2018). If one thought the curse of nature, the flood of 2018 could be placed in the back burner and the tourism system of Kerala and its people could move ahead, rebuilding; 2019 proved to another disaster year, with the flood of 2019, as if to say, a sequel has arrived and people and the tourism industry along with other businesses face the brunt and fury of nature.

Kerala Floods of 2019:

Menon (2019) reports the facts that, when the Kerala tourism system was showing signs of recovery and revival, the floods of 2019 struck in August which left Kerala in dire straits. A total of 121 people died, over two-lakh people impacted by the floods, were shifted to 1318 relief camps (India Today, 2019). A total of eighty landslides were reported within a span of two-days, and many were buried alive and were never found. The districts most impacted were Wayanad, Malappuram, Kozhikode, Kannur, Palakkad, Thrissur and Ernakulam.

Destinations and its service providers, the people, the communities were barely coming back to normalcy, when road were blocked on account of rains for more than two weeks. Post the 2018 there was a reasonable recovery in the travel trade which ensured there was an increase in 6,39, 271 tourists were seen between April and June of 2019. FTAs accounted for 1,83,320 in the second quarter of FY18-19. A growth rate of 8.74 per cent as in comparison to the same period in 2018. The floods of 2019 ensured, rescheduling of tourism events which led to further dwindling of the visitors. This was an alarm bell for any tourism researcher and practitioner, the dependence or over-dependence on tourism would lead to a scenario wherein the community practicing tourism for its livelihood will suddenly be jobless, thereby leading to a scenario of no or zero income. Many from the academia and even practitioners in various discussion forums, argued the fact that the best way to mitigate a community from any hazard/disaster if they are linked to tourism, travel and hospitality (TTH) would be engage in multiple business, some of them may be unrelated to tourism. But then what if the choice of the community, its people is tourism and tourism alone. Balaji, A.K., who works in Munnar area with The Grand Cliff (www.thegranciff.com) mentioned that, "though Munnar did not have much of an impact on account of the 2018 and 2019 floods, it was Covid-19 that proved to be a disaster." He continues, "Tourism no doubt came to a standstill, on account of the fact that, people stopped traveling on seeing the terrible scenes of the floods and mudslides; 2021-22 was very reasonable in tourists coming back; this tantamount to the resilience that was scene all across. By 2022-23 tourism was becoming normal, the Arab Visitors were good in numbers; but it was the Europeans who were not traveling towards Kerala. However, that was made up with the Domestic

holiday makers traveling in larger numbers.” When the researchers spoke of the challenges of the disasters that hit Kerala tourism, Balaji mentions, “on account of the flood events and Covid-19 a lot of manpower moved away from Kerala, and many of them even switched careers away from Tourism. So much so there is a human capital shortage in the tourism business even in 2023.”

Resilience was word that was expressed by Manoj (2019) in a study that was conducted to study the methods in which Kerala tourism gets back to track. Responsible Tourism (RT) was one such suggestion that had come through. But there have been eerie reporting and studies that had showcased and warned as Oommen (2008) put it the danger of overlooking the environmental sustainability in development activities in the state. While referring to the growing environmental issues in Kerala from the perspective of the state’s economic development model viz., “Kerala model of development” the Oommen (2008) has pointed out in detail the environmental and ecological issues that the state faces at present; the current scenario being critically referred to as one of “Ecological Overkill” in the research. The day-by-day worsening situation of the natural environment in Kerala and its adverse impact on the long-term sustainability of tourism has been noted by many researchers, pointing out the need for environment-friendly (nature-friendly) tourism models like ecotourism and its variants like rural tourism, responsible tourism etc. But then, was someone paying heed?

Any sane voice that speaks of making efforts to ensure, protect, preserve and conserve is all likelihood will be berated; so, too was Prof. Madhav Gadgil, who headed the Western Ghats Ecology Expert Panel (WGEEP) whose report of 2011 had recommended several areas in Kerala which come under the Western Ghats to be classified as ‘ecologically sensitive,’ to which the Government of Kerala had opposed the recommendations of the panel (Onmanorama, 2018). Prof. Gadgil commented in relation to the disaster and stated that, the flooding has definitely brought to light existence of illegal stone quarries or large number of unauthorised constructions on river beds, he said, adding, “In this sense it is definitely a man-made calamity where intense rainfall and human intervention have made it a serious disaster” (The Week, 2018).

One can thereby see that the two milestones of floods and rains that Kerala faced in 2018 and 2019, that a disaster will cripple any economy or a strong industry. Kerala, which made positive recovery efforts in 2018 and 2019, but had to face the fury of deluge again in 2019 was meandering towards a pandemic called Covid-19 (Corona Virus), like all other parts of the world. What would have been going on in the mind of the Tourism and Hospitality stakeholder; now that they were on a road to recovery on the Tourism front in particular and economy in general; and were already hearing stories stemming out of China about a Virus by November, 2019 and within two months, as reported by Menon et al., (2020), Kerala was the first state affected by COVID-19, and the first coronavirus case was confirmed in Thrissur district on 30th January 2020. By early March the state soon had the highest number of active cases in India mainly due to a huge number of cases imported from other countries and states. Well, the saga for Kerala continued unfortunately into 2020 and the primary sufferer was tourism, on account of quarantine, lock-down and zero movement of people. True UNDRR (2020) has stated, we will need to recover better, reduce risk, build resilience, focus on prevention, for prevention saves lives; but if another impending disaster is in the making, then it tantamount to a double whammy. Yes, we have to be prepared for the same.

6. Tourism system role and strategies for Disaster Management

Ritchie (2008) laments that, despite the growing number of natural hazards and disasters little research has been conducted on tourism disaster management and planning. Everything is reactive, and not proactive. It is not about response and recovery; it is about reduction and readiness. Hence, we are dealing with a dichotomous situation, wherein, we react, respond and make all efforts to recover; after an event has occurred. UNDRR (n.d.) has rightly mentioned, “Hazards do not have to turn into disasters. To break the vicious cycle of ‘Disaster, respond, recover, repeat’ (UNDRR, 2020), we need a better understanding of disaster risk, in all its dimensions.” We will need to recover better, reduce risk, build resilience, focus on prevention, for prevention saves lives. What are the odds of breaking the vicious cycle is a question that will come up on the minds of one and all. The tourism

and hospitality stakeholders, should actually not ponder over; but quickly adopt and ensure a practice that will help in ensuring ‘hazards do not have to turn into disasters.’

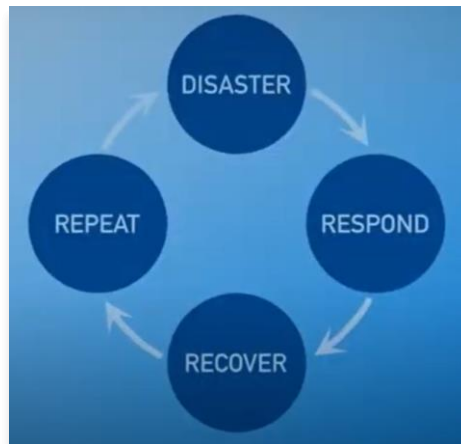


Illustration 12: Grab from the UNDRR documentary (UNDRR, 2020)

True the issues of hazards, vulnerability and disaster are intertwined and provide each of us a unique and tacit opportunity to be involved in ensuring there is disaster risk reduction mitigation scenario, which in turn will ensure a prepared community, a ready nation, a people who acknowledge that places are vulnerable; and a disaster can strike at any given point in time. With a town like Joshimath (Jyotirmath/Jyotir Math) Cantonment, located at an altitude of 2100 metres, is a city with religious importance in the state of Uttarakhand. It is also the junction point for travellers visiting a multitude of tourist destinations is also a centre point for those embarking on the Char Dham Yatra (Badrinath, Kedarnath, Gangotri and Yamunotri) (eUttaranchal, n.d.a); for those proceeding on mountain expeditions. Joshimath has been in the news for some time now on account of fact that houses are collapsing, there has been water seeping in the houses, and town is confirmed to be sinking due to its geographic location of being along a running ridge (Tripathi, 2023) and located on a site of an ancient landslide as reported by the YC Mishra committee; who made a categorical statement, that the old landslide zone would sink, if there was further development and recommended a complete halt to the construction activity (Ramani, 2023). What do we do with such a scenario? Where does the planning start? What is to be done with the community that lives in the town? Thence, it can be said, Joshimath, which is at the confluence of Rivers Alkananda and Pindar (ToI, 2023) may never get juxtaposed to the cycle of Disaster, respond, recover, repeat; and the Government will move the people from the zone where there is danger lurking; but then what next is the question? Places are vulnerable, there are hazards lurking, and disasters may happen at any point in time. We need to watch out the next for Joshimath, and what measures of mitigation the Government will take. Whether we conclude to say, Joshimath and its position is vulnerable and it is hazardous; well, the disaster is what is on the mind of one and all. ToI (2023) has reported that not only Joshimath, but Rishikesh and Nainital are also in line. A look at the maps provided in illustrations (14 and 15) (eUttaranchal, n.d.) will clearly enable the reader to make an interpretation of what is being stated.

does not have a solid and a stable foundation. The report, *inter-alia*, states “**Joshimath is a deposit of sand and stone – it is not the main rock – hence it was not a suitable place for the coming up of a township. Vibrations produced by blasting and heavy traffic will also lead disequilibrium in natural factors**”. The said Report warned

Illustration 13: Grab of the YC Mishra Report statement on Joshimath, 1973 submitted in the High Court of Uttarakhand (Livelaw, 2023)

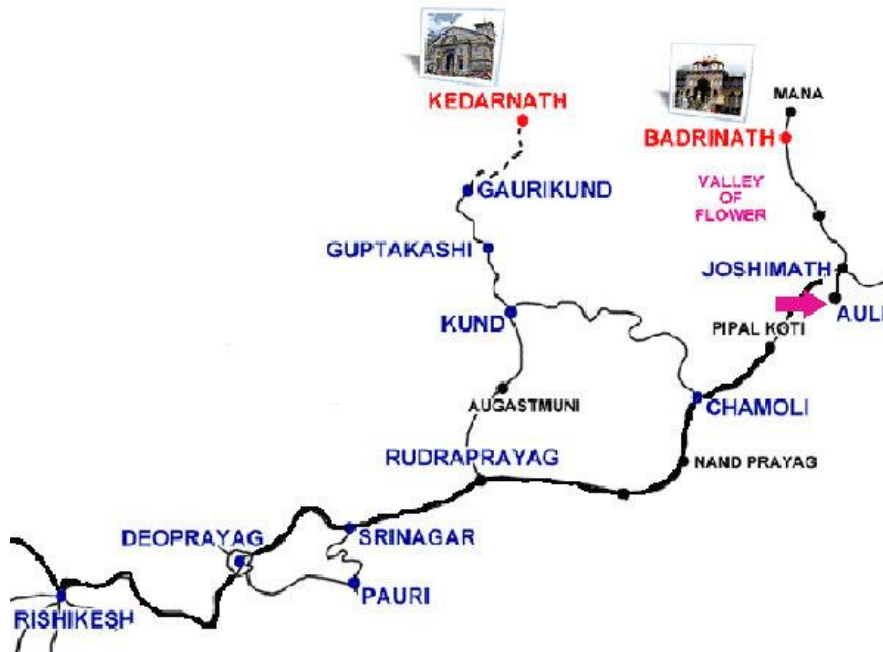


Illustration 14: Map showing the tourist destinations from Joshimath (eUttaranchal, n.d.)

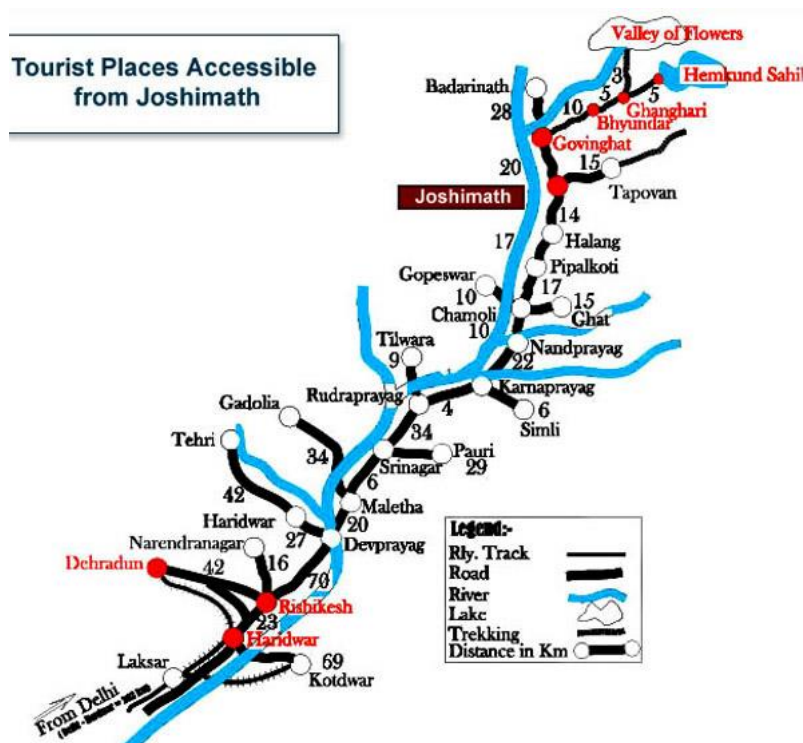


Illustration 15: Map showing the tourist destinations from Joshimath with distances (eUttaranchal, n.d.)

| Year | Number of Pilgrims | Destination | Pilgrims | |
|------|----------------------------------|-------------|------------|------------|
| 2022 | 45 Lakhs | | 2022 | 2019 |
| 2021 | Curtailed on account of Covid-19 | Badrinath | 17.6 Lakhs | 12.5 Lakhs |
| 2020 | Curtailed on account of Covid-19 | Kedarnath | 15.6 Lakhs | 10 Lakhs |

| | | | | | |
|--|------------|--|---|-----------|-----------|
| 2019 | 32.1 Lakhs | | Gangotri | 5.3 Lakhs | 4.8 Lakhs |
| 2018 | 26.2 Lakhs | | Yamunotri | 4.8 Lakhs | 4.6 Lakhs |
| 2017 | 21.9 Lakhs | | Table 6: 2019 and 2022 Pilgrim data at the Char Dham Locations (Singh, 2022) | | |
| 2016 | 14.5 Lakhs | | | | |
| Table 5: Char Dham Total Pilgrims (2016 – 2022) (Singh, 2022) | | | | | |

It is clear from the number of Pilgrims who proceed towards the Char Dham and to Joshimath, one needs to plan and strategize for the better. As mentioned by Ashuthosh (Chandel, 2022), “it is better late than never.” He further added, “Pilgrims will come, whatever the risk may be. Uttarakhand has seen the way people flocked after the Kedarnath event, it is the *Aastha* (belief) that one has and the pilgrims will come....the tourism system is aware that it will surely not be a number game in the future; we have seen the impacts of ‘over tourism,’ we will need to modify the way we operate.” He added another input and mentioned, “the tourism system will adjust, the Government should help lead the way.” “Carrying capacity should be the way forward.” Joshimath will surely be a turning point, and the tourism system, the community and the Government await the next move in this vulnerable landscape. The words of veteran environmentalist Anil Joshi, a Padma Bhushan awardee, who is founder of Dehradun-based Himalayan Environment Studies and Conservation Organisation are not in vain, he has stated, “Owing to repeated negligence by the authorities concerned, the Joshimath issue does not come as a shock to me. The matter had been flagged in 1976 but no one took note of it. It is time that we focus on our hill towns as a priority and take immediate steps to prevent further deterioration” (ToI, 2023)

Conclusions

Whilst the researchers set out to document the case studies, we were aware that we have not documented many in the present paper. But one facet that stood out was, how can the Tourism System in particular ensure an understanding of all the nuances of hazards and disasters and provide for the safety of the visitors and the local community. We as citizens will surely hold the Government at the federal and states levels to support in any initiative that will lead to ensure management of hazards and disasters. True there should be strength and resolve in the tourism stakeholders to either stop tourism in a landscape where one can and will expect disaster, if we as an industry are not prepared for the same. Needless to say, going ahead would lead to much of ripple effects, which should be curtailed. There should be strength and resolve in the tourism stakeholders to either stop tourism in a landscape where one can and will expect disaster, if we as an industry are not prepared for the same. Saying ‘No’ to tourism should be part of the repertoire.

Education and training of the community and the visitors on a large scale about the hazards and the impending disasters would ensure an understanding and a preparedness – face any eventuality. The Gram Panchayats across the nation who are the primary connect to the community, should be the pivot which will ensure faster coordination, rescue and relief measures as and when they arise. True the NDRF and the SDRFs along with the other administrative machinery do play a role in disaster management; the Panchayats would help in training measures and knowledge sharing considering the connect to the landscapes and ensuring that the community becomes the ‘first responders.’ Hazard and disaster management teams should be a natural progression in any area and landscape which will prove the readiness of the entire administration with the tourism system playing its role to ensure minimum or zero deaths. Preparedness is the best panacea, a mitigation for any hazard/disaster that would occur in the country and around the world. If at the Gram Panchayat level, we speak of lowest level of Administration; it is also required, that Travel and Hospitality Associations viz., Federation of Hotels and Restaurants Association of India (FHRAI) (<https://www.fhrai.com>), Travel Agents Association of India (TAAI) (<https://www.travelagentsofindia.com>), Indian Association of Tour Operators (IATO) (<https://iato.in>), Travel Agents Federation of India (TAFI) (<http://tafionline.com>), Hotel Association of India (HAI) (<http://hotelassociationofindia.com>), Federation of Associations in

Indian Tourism and Hospitality (FAITH) (<https://www.faithtourismindia.in>), SKAL International – India (<https://skal.org>) and the Tourist Guides’ Federation of India (TGFI) (<https://www.tgfi.org.in>), work in tandem to create ‘tool kits’ for their members who will be the champions of ensuring hazards, vulnerabilities and disaster are faced and managed well.

Pradeep (Pradeep, 2023) a veteran Tour Guide with the Ministry of Tourism, Government of India, who works in the Southern Indian states; mentions, “.....training for all the folks involved in tourism and hospitality, i.e., the hoteliers, the tour operators, travel agents, the drivers, the coach managers, the managers in trains, the airport staff, the staff at monuments, the guides, all need to be trained in an informal and formal environment, which will take us a long way in mitigating the vulnerabilities that are present, leading to disasters that we have never anticipated....” Preparedness is the best panacea, a mitigation for any hazard/disaster that would occur in the country and around the world. Thoughts reiterated by a Ganesh V, (Ganesh, 2022) a forest officer working with the Government of Karnataka as Assistant Conservator of Forests (ACF), who mentioned that, “lot of visitors come to the forest areas like Bandipur, Nagarhole in Karnataka and also other forests in other states; forest are vulnerable to forest fires and they can strike at any time, especially in the summer months; the question is are the tour operators and the visitors prepared for the same. The forest staff has been trained to ensure for the forests, flora, fauna and the people; the visitors to should be educated about the eventualities. This primarily helps to avoid loss of life.” The researchers also gather that following the Joshimath issue, the Uttarakhand Government is contemplating a cap on the number of pilgrims to be allowed at each of the four key Dhams (Shrines) of Badrinath, Kedarnath, Gangotri and Yamunotri (Singh, 2023). This is news to the ears; but then is too little, too late. Singh (2023) further reports that Yatra is expected to commence in April; and all eyes will be towards the State and Central Governments and the decisions that they will take to ensure. The UNDRR (2020) speaks of the framework of Disaster, respond, recover, repeat (DRRR) and encourages all to break this vicious cycle, for which we need to recover better, reduce risk, build resilience and focus on prevention. Tierney (2019) whilst discussing the challenges of conducting research in the aftermath of disasters and critiques the concept of disaster resilience, which has come to be seen as a key to disaster risk reduction. The question is are we ready for the same?

The researchers did log in with help of an Artificial Intelligence (AI) specialist of a Global Information Technology company; who wanted to remain anonymous and got to question ChatGPT with a question as follows: *How should India manage Tourism Destinations and the ensuing disaster of earthquakes, floods, mudslides, tsunami and cyclones?*

The reply of ChatGPT is something to be seen and checked by one and all.

India should manage tourism destinations by implementing a comprehensive disaster management plan that includes risk assessment, emergency preparedness, and response measures. This plan should be regularly reviewed and updated to ensure it is effective in dealing with natural disasters such as earthquakes and floods. Additionally, the government should work with local communities and tourism operators to educate visitors about the risks and how to stay safe during a natural disaster. Finally, it is important to ensure that the disaster management plan is well-coordinated with other government agencies and non-governmental organizations to ensure effective response in case of a disaster.

ChatGPT Jan 9 Version. Free Research Preview. Our goal

References

1. Adobe (n.d.) Kedarnath temple overview after the Disaster of 2013. Retrieved from <https://stock.adobe.com/in/images/kedarnath-temple-aerial-view-after-kedarnath-disaster-2013->

- [heavy-loss-to-people-property-happened-worst-disaster-landslide-flood-cloudburst-in-india/376219131?as_campaign=ftmigration2&as_channel=dpcft&as_campclass=brand&as_source=ft_web&as_camptype=acquisition&as_audience=users&as_content=closure_asset-detail-page](https://www.bbc.com/news/world-asia-india-45216671)
2. BBC (2018, August 17) Kerala Floods: Monsoon waters kill hundreds in Indian State. Retrieved from <https://www.bbc.com/news/world-asia-india-45216671>
 3. Bath Spa Geography. (2023, January 26). *Ilan Kelman: 'Disaster are not natural-but don't blame climate change'* [Video]. YouTube. <https://www.youtube.com/watch?v=hBwaX1pf-ZQ>
 4. Business Standard (2019, February 26) Kerala hopes to increase tourists to state by 2020. Retrieved from https://www.business-standard.com/article/news-ians/kerala-hopes-to-increase-tourists-to-state-by-2020-119022600893_1.html
 5. Chandel, Ashutosh (2022, November 18). Personal Communication [WhatsApp]
 6. DT Next (2022, August 5) Mudslide on Adukkam Road throws life out of gear in Kodai. Retrieved from <https://www.dtnext.in/tamilnadu/2022/08/05/mudslide-on-adukkam-road-throws-life-out-of-gear-in-kodai-2>
 7. Devasia, T.K., (2018, September 12) Kerala, after the flood: rivers dry up, mercury rises and earthworms die as state gears up for drought after deluge. Retrieved from <https://www.firstpost.com/india/kerala-after-the-flood-rivers-dry-up-mercury-rises-and-earthworms-die-with-state-set-for-drought-after-deluge-5166821.html>
 8. eUttaranchal (n.d.) Uttarakhand Tourism. Retrieved from <https://www.euttaranchal.com/tourism>
 9. eUttaranchal (n.d.a) Chardham Packages. Retrieved from <https://chardham.euttaranchal.com>
 10. Freeda (2021, October 25) Pondy beyond the French Town! Through the Lens of a sandy Eco Village. Highway my beckoning. <https://www.highwaymybeckoning.com/unesco-sites-in-india-the-latest/>
 11. Joseph, Praveen J., Paul (2018, November 26) Tourist spot Berijam still feels after effects of Gaja. Retrieved from <https://www.dtnext.in/tamilnadu/2018/11/26/tourist-spot-berijam-still-feels-after-effects-of-gaja>
 12. Ganesh (2022, November 2) Personal Communication [WhatsApp]
 13. Gupta, Stutee; Anand, Shikha and Gwal, Srishti (2018) Inbound tourism in Uttarakhand, India, before and after the 2013 Kedarnath disaster – evidence derived from social networking sites using GIS. *Current Science*, 114(8), 1755-1759
 14. HT (2022) Pilgrim influx to Kedarnath Dham crosses 10.08 lakh, breaks all previous records. Retrieved from <https://www.hindustantimes.com/india-news/pilgrim-influx-to-kedarnath-dham-crosses-10-08-lakh-breaks-all-previous-records-101660735593471.html>
 15. India Today (2019, August 19) Death toll in flood-hit Kerala rises to 121, 40 injured. Retrieved from <https://www.indiatoday.in/india/story/death-toll-in-flood-hit-kerala-rises-to-121-40-injured-1582258-2019-08-19>
 16. Jin, Xin; Mingya, Qu and Bao, Jigang (2019) Impact of crisis events on Chinese outbound tourist flow: A framework for post-events growth. *Tourism Management*. 74:334–344. DoI: <https://doi.org/10.1016/j.tourman.2019.04.011>
 17. Jolly, Asit (2013, July 15) Kedarnath calamity a proof of long ignored threat by melting Himalayan glaciers. Retrieved from <https://www.indiatoday.in/magazine/nation/story/20130715-uttarakhand-tragedy-floods-alarm-for-himalayan-glaciers-764472-2013-07-04?onetap=true>
 18. Juyal, Navin (2023, January 6) Joshimath's tragedy again shows us how fragile Uttarkhand's Himalayas are. Retrieved from <https://www.downtoearth.org.in/blog/climate-change/joshimath-s-tragedy-again-shows-us-how-fragile-uttarakhand-s-himalayas-are-86982>
 19. Karnik, Vaishnavi (2020, November 24) As Cyclone Nivar approaches, A look back at Gaja – the last storm to hit Tamil Nadu (Photos). Retrieved from <https://weather.com/en-IN/india/news/news/2020-11-24-photos-of-cyclone-gaja-which-hit-tamil-nadu-in-november-2018>
 20. Kelman, Ilan (2020) *Disaster by Choice, how our actions turn natural hazards into catastrophes*. Oxford University Press. ISBN: 9780198841340

21. Keelery, Sandhya (2022, December 12) Foreign and Domestic Tourism Arrivals across Kerala (2013-2021). Statista. Retrieved from <https://www.statista.com/statistics/1027282/india-tourist-arrivals-in-kerala-by-type/>
22. Kedarnath Temple (n.d.) Gaurikund to Kedarnath Trek: Route Map, Time and Distance Guide (16 km). Retrieved from <https://kedarnathtemple.com/gaurikund-to-kedarnath-trek/> NOTE: The website is by no means an official site of the Kedarnath Temple, but the information provided is genuine and can be used by any visitor.
23. Kerala Tourism (n.d.) Kerala Tourism Statistics-2021, Highlights. Retrieved from https://www.keralatourism.org/tourismstatistics/tourist_statistics_202120220530122636.pdf
24. Kundan, Sagar (2018) Disaster Evermore, Threatened Tourism: Rethinking Disaster Management for Indian Tourism Industry under the uncertainty of extreme weather and climate change. *Disaster Advances*. 11(6) 4-14.
25. Livelaw (2023, January 12) Judgement of the High Court of Uttarakhand. PC Tewari Vs State of Uttarakhand and others, WPIL No. 67 of 2021. Retrieved from https://www.livelaw.in/pdf_upload/pc-tewari-vs-state-of-uttarakhand-and-others-uttarakhand-high-court-453744.pdf
26. Mohandas (2022, November 4). Personal Communication [Email]
27. Manandhar, Rejina and McEntire, David A., (2014) Disasters, Development and Resilience: Exploring the need for comprehensive Vulnerability Management. In Kapucu, N., and Lio, T.K., (Eds). *Disaster and Development: Examining Global Issues and Cases*. Springer. DoI: https://doi.org/10.1007/978-3-319-04468-2_2
28. Manoj, P.K., (2019) Tourism sector in Kerala in the post-flood scenario: strategies for its sustainable growth with a focus on Responsible Tourism. *Think India Journal* 22(33) 167-174
29. McEntire, David A., (2014) An evaluation of Risk Management and Emergency Management. Relying on the concept of comprehensive vulnerability Management for an integrated perspective. Springer. DoI: https://doi.org/10.1007/978-94-017-9328-5_12
30. Menon, C., Jaideep, Rakesh, P.S., John, Denny, Thachathodiyl, Rajesh and Banerjee, Amitava (2020) What was right about Kerala's response to the COVID-19 pandemic. *BMJ Global Health*. 5(7). DoI: <http://dx.doi.org/10.1136/bmjgh-2020-003212>
31. Menon, S., Sruthi (2019, August, 30) Two consecutive floods leave Kerala tourism in dire straits. Retrieved from <https://thefederal.com/states/south/kerala/two-consecutive-floods-leave-kerala-tourism-in-dire-straits/>
32. Mishra, Ishita (2022, October 13) Char Dham yatra sees record footfall this year. Retrieved from <https://www.thehindu.com/news/national/other-states/char-dham-yatra-sees-record-footfall-this-year/article66001254.ece>
33. Mohapartra, M., Mandal, G.S., Bandyopadhyay, B.K., Tyagi, Ajit and Mohanty, U.C., (2012) Classification of cyclone hazard prone districts of India. *Nat Hazards* 63:1601-1620. DoI: <https://doi.org/10.1007/s11069-011-9891-8>
34. MoT, GoI (2019) India Tourism Statistics, 2019. Retrieved from <https://tourism.gov.in/sites/default/files/2020-04/India%20Tourism%20Statistics%202019.pdf>
35. MoT, GoI (2020) India Tourism Statistics, 2020. Retrieved from <https://tourism.gov.in/sites/default/files/2021-05/INDIA%20TOURISM%20STATISTICS%202020.pdf>
36. MoT, GoI (2021) India Tourism Statistics, 2021. Retrieved from <https://tourism.gov.in/sites/default/files/2022-04/India%20Tourism%20Statistics%202021.pdf>
37. MoT, GoI (2022) India Tourism Statistics, 2022. Retrieved from https://static.pib.gov.in/WriteReadData/userfiles/IndiaTourismStatistics2022English.pdf?utm_campaign=fullarticle&utm_medium=referral&utm_source=inshorts
38. Murugan (2022, December 12). Personal Communication [WhatsApp]

39. Onmanorama (2018, August 19) Environmentalist Gadgil says Kerala floods is a man-made disaster. Retrieved from <https://www.onmanorama.com/news/kerala/2018/08/19/madhav-gadgil-says-kerala-floods-man-made-disaster.html>
40. Oommen, M. A., (2008) Reforms and the Kerala Model. Economic and Political Weekly. Vol. XLIII, No.2. 22-25.
41. Outlook (2018, August 27) Kerala Floods 2018: Flood-hit Kerala's Tourism Industry Grinds to a Halt. Retrieved from <https://www.outlookindia.com/website/story/kerala-floods-2018-flood-hit-keralas-tourism-industry-grinds-to-a-halt/315589>
42. Palandurkar, Ishani and Patel, M., Praharsh (2022, March 15) The tale of two disasters: Role of science communication for disaster risk reduction. Retrieved from <https://www.indiawaterportal.org/articles/tale-two-disasters-role-science-communication-disaster-risk-reduction>
43. Pradeep, S., (2023, January 6). Personal Communication [WhatsApp]
44. Raghavan, T.C.A, Sharad (2018, August 20) The Hindu explains: 'Calamity of a severe nature.' Retrieved from <https://www.thehindu.com/news/national/the-hindu-explains-calamity-of-a-severe-nature/article61501741.ece>
45. Ramani, Vandana (2023, January 9) Joshimath crisis: Why a 43-year-old report on the Uttarkhand city is prophetic. Retrieved from <https://www.moneycontrol.com/news/business/joshimath-crisis-why-the-1976-mishra-committee-report-on-joshimath-is-prophetic-9829361.html>
46. Ramasamy, S.M., Gunasekaran, S., Rajagopal, N., Saravanel, J. and Kumanan, C.J., (2019) Flood 2018 and the status of reservoir-induced seismicity in Kerala, India. Natural Hazards, Springer Nature. DoI: <https://doi.org/10.1007/s11069-019-03741>
47. Ritchie, Brent, W., (2008) Tourism Disaster Planning and Management: From Response and Recovery to Reduction and Readiness. Current Issues in Tourism, 11(4) 315-348. DoI: <https://doi.org/10.1080/13683500802140372>
48. Rossello, Jaume, Becken, Susanne and Santana-Gallego, Maria (2020) The effects of natural disasters on international tourism: A Global Analysis. Public Health Emergency Collection. Elsevier. DoI: <https://doi.org/10.1016/j.tourman.2020.104080>
49. Sacred Yatra (n.d.) Kedarnath Pilgrim Stats. Retrieved from <https://www.sacredyatra.com/kedarnath-pilgrim-stats.html>
50. Satellite Pro (n.d.) Kedarnath. Retrieved from https://satellites.pro/India_map#30.697879,79.042511,12
51. Satellite Pro (n.d.a) Kedarnath. Retrieved from https://satellites.pro/India_map#30.771779,79.071178,14
52. Shivagupta, Kishore (2022, December 14). Personal Communication [WhatsApp]
53. Shondell-Miller, DeMond (2008) Disaster tourism and disaster landscape attraction after Hurricane Katrina. International Journal of Culture Tourism and Hospitality Research 2(2): 115-131. DoI: <https://doi.org/10.1108/17506180810880692>
54. Singh, K., Natwar (2018, May 20) What India taught Max Muller. Retrieved from <https://www.tribuneindia.com/news/archive/features/what-india-taught-max-muller-591922>
55. Singh, Kautilya (2022, November 20) Char Dham yatra ends with closing of Badrinath Shrine. Retrieved from <https://timesofindia.indiatimes.com/city/dehradun/char-dham-yatra-ends-with-closing-of-badrinath-shrine/articleshow/95633687.cms>
56. Singh, Kautilya (2023, January 25) Joshimath sinking: Char Dham yatra to be done 'as per capacity' Retrieved from <https://timesofindia.indiatimes.com/city/dehradun/char-dham-yatra-to-be-conducted-as-per-carrying-capacity/articleshow/97293441.cms>
57. Sood, Jyotika (2018, August 21) Livelihood hit as tourism bears the brunt of Kerala floods. Retrieved from <https://www.livemint.com/Politics/cm1bfVWtMfiP0Y99nbLstL/Livelihoods-hit-as-tourism-bears-the-brunt-of-Kerala-floods.html>

58. Swarna, Freeda Maria M., Khan, Shaheed; Kumar, S., Praveen and Kannan, R., (2022) Ecotourism, the opportunities for Women Entrepreneurs in the Forest Areas of Tamil Nadu. *International Journal of Research and Analytical Reviews (IJRAR)*. 9(2) 908-923. E-ISSN: 23481269.
59. Taufeeq (2023, January 5). Personal Communication [WhatsApp]
60. TNN (2018, November 18) Four Workers die in Kodaikanal landslide triggered by Gaja. Retrieved from <https://timesofindia.indiatimes.com/city/madurai/4-workers-die-in-kodaikanal-landslide-triggered-by-gaja/articleshow/66673506.cms>
61. Tamil Nadu Weatherman (2018, November 16). Cyclone Gaja Update – Dindigul, Madurai, Virudhunagar, Theni all in firing line now. [Status Update]. Facebook. <https://www.facebook.com/tamilnaduweatherman/photos/cyclone-gaja-update-dindigul-madurai-virudhunagar-theni-all-in-firing-line-now-i/2400098546884082/>
62. The Week (2018, August 19) Environmentalist Gadgil says Kerala floods is also a man-made disaster. Retrieved from <https://www.theweek.in/news/india/2018/08/19/environmentalist-gadgil-says-kerala-floods-man-made-disaster.html>
63. ToI (2018, August 24) Sudden water release by Tamil Nadu from Mullaperiyar a reason for deluge: Kerala to SC. Retrieved from <https://timesofindia.indiatimes.com/india/sudden-water-release-by-tamil-nadu-from-mullaperiyar-a-reason-for-deluge-kerala-to-sc/articleshow/65519730.cms>
64. ToI (2018b, August 21) Kerala Floods 2018: Fishermen of Kerala – Supermen without Capes. Retrieved from <https://www.timesnownews.com/mirror-now/in-focus/article/kerala-floods-2018-fishermen-of-kerala-supermen-without-capes/272890>
65. ToI (2023, January 27) Not just Joshimath, ground's also slipping under Rishikesh, Nainital. Retrieved from <https://www.msn.com/en-in/news/other/not-just-joshimath-ground-s-also-slipping-under-rishikesh-nainital/ar-AA16MEeQ?ocid=msedgntp&cvid=f49b4defa1744d079f455052de8ee99d>
66. Tierney, J., Kathleen (2019) *Disasters a sociological approach*. Polity. ISBN: 9780745671024
67. Tripathi, Siby (2023, January 7) Why is Joshimath sinking? Alarm bell in hill town ringing since 1976. Retrieved from <https://www.indiatoday.in/science/story/why-is-joshimath-sinking-alarm-bells-in-hill-town-ringing-since-1976-2318223-2023-01-06>
68. UNDRR (n.d.) *Understanding Disaster Risk*. Retrieved from <https://www.preventionweb.net/understanding-disaster-risk>
69. UNDRR (2020, July 27). *Prevention saves lives* [Video]. YouTube. https://www.youtube.com/watch?v=93TJ_3tAojE&t=79s
70. Uttarakhand (n.d.) Retrieved from Uttarakhand Touris, (n.d.) *Tourist Statistics Year 2021 of Major Tourist Destinations*. Retrieved from <https://uttarakhandtourism.gov.in/sites/default/files/document/type/Year%20Statistics%202021%20PDF.pdf>
71. Varghese, Sunil (2021, August 4). Personal Communication [Email]
72. Wang, Yu-Shan (2009) The impact of crisis events and microeconomic activity on Taiwan's international inbound tourism demand. *Tourism Management*. 30(1) 75-92. DoI: <https://doi.org/10.1016/j.tourman.2008.04.010>