

Impact of Kumbh Mela on Environment

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Abstract— India being a country of diversity brings along celebrations and performances of rituals. Where Ghats are one of the integral centers for many of these activities. Crores of people visiting the major ghats every year across multiple cities bring some great concerns. Most of the practices performed on the ghats have a purpose to purify the inner soul of beings. A pilgrimage which is held alongside of some sacred rivers at specific locations on the Ghats in India, Which holds a very important Place in the hinduism.

Ghats are integral part of Indian landscape mainly along sacred river, highlighted their diverse purpose Daily Rituals, Prayers, Cremation ceremonies. People come together during a social event where they gather to bath, pray and also to participate in events.

Architecture, where on ghat we can find some carvings and sculpture dedicated to deities, adds more religious value to the ghats.

Keywords—Ghat, Kumbh mela, waste management, water quality, environmental impacts, sustainable waste management.

I. INTRODUCTION

This Ghat is a series of steps that lead to water bodies, namely rivers and Lakes. These Ghats are usually used for religious, ceremonial purposes etc. According to the Hindu religion, some rivers are described as sacred rivers, and it is believed that performing various purposes, including Religious rituals, bathing, and cremation, can lead to God's place in heaven. This psychology of humans/pilgrims plays an important role in social and Cultural activity at the Ghats. The banks of river ganga, Yamuna, Godawari and shipra are the main Ghats for kumbh mela, millions of people visit these places, during this large gathering a celebtaions with faith which has great significance of bathing as the main ritual in the holy river, believed to free sins and bring positivity to life. The Kumbh Mela is a massive Hindu pilgrimage and festival, considered the world's largest peaceful gathering. It's a deeply religious event where devotees believe bathing in sacred rivers cleanses sins and aids in achieving liberation. Held every three years, the Mela rotates among four pilgrimage sites on four holy rivers, creating a cycle that spans twelve years. Each Mela lasts for several weeks and includes not only ritual bathing but also fairs, religious speeches, and gatherings of monks. The Kumbh Mela is a unique fusion of faith, community, and culture, making it a landmark event in Hinduism.

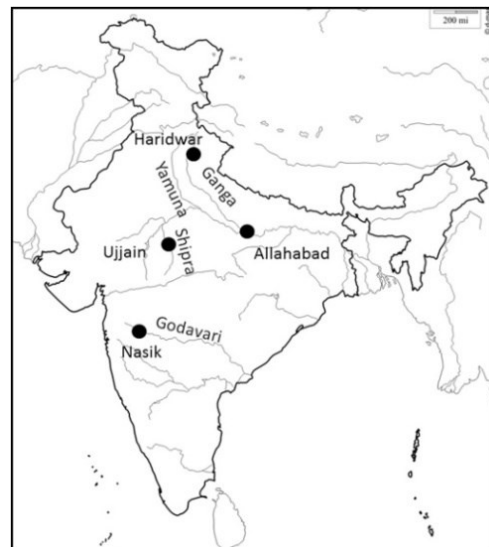
These large gatherings bring along many environment challenges. The increase in waste generation because of large number of people, often Hampers the management. The type of waste and its quantity during the kumbh mela has negative impacts on the river water thus polluting the water, adding stress on the sewage system because of increased of number of people makes it even more dangerous. The potential health risk

associated with the river during the kumbh mela. The spread of diseases caused by contaminated water, impacts the pilgrims as well as the local. Potential solutions for the improvement of the environmental condition caused because of waste generation during kumbh mela and minimizing the environmental impacts.

II. LITERATURE REVIEW

The Ghats having various purpose, and also many rituals are been carried out on the Ghats.

Considering, the four Major ghats where Kumbh Mela is celebrated, naming the ghats – Goda Ghat Nasik, Har-ki-Puri Haridwar, Ujjan, Prayagraj.



Location of Kumbh Mela

A. Significance of Ghat in Culture and Religion.

Ghats are integral part of Indian landscape, mainly along Sacred River highlighting their diverse purpose, which includes performing daily rituals, prayers, and meditation and cremation ceremonies. People come together during social events where they gather to bath, pray and also participate in events. Architecture, being a part of our history we can find some carvings and sculpture dedicated to deities, adds more religious value to the Ghats

B. Types of Ghats

A classification system for different ghats based on their function. Some ghats, like the Har Ki Pauri in Haridwar, are

designated for bathing rituals. Others, like the Manikarnika Ghat in Varanasi, serve as cremation ghats. Puja ghats, such as the Dashashwamedh Ghat in Varanasi, are specifically designed for offerings and prayers. Understanding these diverse roles helps us appreciate the multifaceted significance of river ghats in Hindu society.

C. Kumbh Mela: A spiritual Journey

- **Mythological Significance:** The Kumbh Mela endures because of humanity's unwavering quest for the divine, in spite of the reality around it that is always changing. This age-old celebration is timeless because it is weaved from myth and heavenly alignments. It serves as a bridge, bringing us into contact with the knowledge of our forefathers while brightly reflecting the present. This is a celebration of life itself, throbbing with faith and a strong sense of oneness, where religion takes a second seat to a broader gathering. The Kumbh Mela provides a pause in a world when speed is everything, reminding us of the timeless values of spirituality, traditions, and the deep bonds that unite us as a community. From the hallowed dips to the echoing chants and assemblies of holy men, the rituals themselves are symbols of profound spiritual importance that strengthen our faith in a power much bigger than ourselves. [1][2]
- **Socio-cultural Impact:** The Kumbh Mela's profound socio-cultural impact. They examine the event's role in strengthening social bonds by bringing together devotees from diverse backgrounds. The Mela fosters community spirit through shared rituals and cultural exchange, creating a temporary yet vibrant social space.

D. Types of Kumbh Mela.

- **Maha Kumbh Mela:** For Hindus, the Maha Kumbh Mela is an event that comes just once in a lifetime. Every 144 years, or after 12 Purna Kumbh Melas, there is a Maha Kumbh Mela. It takes place just in Prayag. Millions of people bathe in the sacred water during the Maha Kumbh. According to a tradition, Lord Brahma reportedly said that bathing or dipping in the Ganges' sacred water would free people from their sins. Hindus also think that bathing in the Ganges may cleanse individuals and their ancestors going back eighty-eight generations of sins and evils, particularly during Maha Kumbh. The next Maha Kumbh will take place 144 years after the previous one ended in 2013.
- **Purna Kumbh Mela:** In Allahabad, this Kumbh Mela takes place every twelve years. Thousands of pilgrims bathe in the sacred Sangam. Millions of pilgrims attend this well structured and auspicious bazaar. 2013 was the final Purna Kumbh Mela.
- **Ardh Kumbh Mela:** "Ardh" means "half" and "Mela" means "fair" in Hindi. Since the fair is held every six years, it is also known as Ardh Kumbh. It denotes the midpoint between the Purna Kumbh Melas, which are held every twelve years. There are just two locations for the Ardh Kumbh: Allahabad and Haridwar. In Haridwar, the next Ardh Kumbh Mela is scheduled for 2016.
- **Kumbh Mela:** The four locations of the Kumbh Mela are Ujjain, Allahabad, Nashik, and Haridwar. Millions of devotees visit the massively organised Kumbh Mela and

partake in the sacred bath. The timing and location of the Kumbh Mela are determined by the sun's and Jupiter's planetary positions.

E.Environmental concerns and religious faith in Kumbh Mela

- **Water Quality: A paradox of Purification**
 Millions descend upon the ghats during the Kumbh Mela, seeking spiritual cleansing through ritual bathing (snan) in the sacred rivers. While this act holds immense significance, it creates a paradoxical situation for the very waters they revere. The sheer volume of people releases a significant amount of fecal coli form bacteria and other pollutants. Offerings like flowers, puja materials, and even soap – meant to be acts of devotion – contribute to organic and inorganic pollution. This can lead to a decline in dissolved oxygen levels, harming the aquatic life that thrives within these rivers, considered sacred forms of life themselves. Essentially, the very act of seeking purification in the river can unintentionally diminish its ability to purify.
- **Waste Management: A Challenge to Sacred Spaces.**
 The Kumbh Mela generates a staggering amount of solid waste. Food packaging, plastic bottles, disposable utensils, and floral offerings accumulate rapidly, overwhelming existing waste management systems. Inefficient collection and improper disposal can lead to overflowing landfills, littering the ghats and surrounding areas. This not only creates an unsightly environment but also pollutes the rivers themselves. The plastic and other non-biodegradable waste can travel long distances, eventually reaching the oceans, further threatening the delicate balance of the ecosystem. The very act of celebrating on the sacred ghats can unintentionally defile the sanctity of the space.

Location	River	Potential Scale	Waste Generation Concerns	Water quality Concerns.
Prayagraj (Allahabad)	Ganga and Yamuna Sangam	Largest gathering.	Higest potential waste generation due to massive crowds	Higest potential for pollution due to confluence of rivers and sheer volume of pilgrims.
Haridwar	Ganga	Large Gathering.	Significant waste generation, Straining sanitation infrastructure	Increased fecal coliform bacteria and potential microplastic pollution.
Nashik	Godavari	Medium sized Gathering.	Lower waste generation compared to prayagraj and haridwar, but still requires proper management.	Potential for pollution in the Godawari river, especially if waste management is inadequate.
ujjain	Shipra	Smaller gathering.	Relatively lower waste generation, but crucial to manage effectively to protect the smaller river.	Shipra River is already considered a polluted river. Kumbh mela can Exacerbate the issue.

Tab. Comparison of waste and water Quality Concern at All 4 locations

- **Biodiversity loss:** Disrupting the harmony of nature- The influx of millions of pilgrims and the associated infrastructure development for the Kumbh Mela can disrupt the delicate ecological balance of the river ecosystems. Increased noise pollution can disturb aquatic life, while construction activities can damage riverbanks and affect spawning grounds for fish. Additionally, the use of chemical pesticides to control insects during the Mela can further harm aquatic biodiversity. These actions disrupt the harmonious relationship between humanity and nature that the Kumbh Mela itself strives to celebrate. The very act of seeking spiritual connection in nature can inadvertently harm the natural world that is a source of spiritual sustenance.
- **Public Health Concerns:** A shadow cast on the Festivities- Poor sanitation facilities and inadequate waste management during the Kumbh Mela create breeding grounds for mosquitoes and other disease-carrying insects. This can lead to outbreaks of waterborne diseases like cholera, typhoid, and diarrhea, posing a significant health risk to pilgrims and local residents alike. The very gathering that celebrates life and spiritual well-being can unintentionally endanger the health of those who participate.
- **Health Risk Diseases:** The Major health concerns during Kumbh Mela are Because of waterborne diseases. As studied and documented there is a rise in case of cholera, gastrointestinal illness and thyroid fever. Which impacts the health of local residents and pilgrims during the kumbh mela. These diseases are caused because of contaminated water which contains harmful bacteria, parasites and viruses. Along with these waterborne diseases, there are many other health risks which are associated with exposure to micro plastic, meaning the tiny plastic particles are found in aquatic environment.
- **Economic benefits:** Increased worldwide recognition has the potential to enhance local economies by increasing tourists. The Kumbh Mela's tourist inflow can boost local crafts, create jobs, and bring in money for the host cities.
- **Cultural exchange and unity:** A forum for cross-cultural interaction, the Kumbh Mela brings together millions of people from all walks of life. This encourages cultural variety and respect between participants while fostering a sense of unity and shared heritage.
- **Support for sustainable practices:** During the event, encouraging sustainable practices might be aided by UNESCO recognition. This include controlling the effects on the environment, safeguarding pilgrims' safety, and protecting the natural locations where the Kumbh Mela is hosted.
- **Educational Opportunities:** Opportunities for educational activities are provided by the listing, both domestically and globally. The Kumbh Mela can be used as a case study by educational institutions, cultural organisations, and schools to discuss religious customs, intangible cultural legacy, and the value of maintaining cultural diversity.

CONCLUSION

The Kumbh Mela, a captivating display of faith and cultural heritage, presents a complex interplay between religious devotion and environmental impact. This research has explored the multifaceted significance of river ghats in Hinduism, the rich mythology surrounding the Kumbh Mela, and the environmental challenges posed by this massive pilgrimage.

While existing research offers valuable insights into water quality degradation, waste management struggles, and the immediate environmental consequences of the Mela, there is a need to delve deeper. Understanding the long-term ecological impact on river ecosystems is crucial for ensuring the sustainability of this sacred tradition.

This research emphasizes the importance of exploring and implementing sustainable practices during the Kumbh Mela. Biodegradable offerings, improved sanitation facilities, and water conservation initiatives hold immense potential in mitigating environmental damage. Furthermore, fostering a collaborative approach that involves local communities, government agencies, and religious organizations is essential.

By promoting environmental awareness and facilitating community participation, we can strive for a Kumbh Mela that celebrates faith while safeguarding the very rivers that sustain its spiritual essence. The future of the Kumbh Mela lies in achieving a delicate balance between preserving its cultural and religious significance and ensuring the ecological well-being of the sacred rivers that are central to its core purpose.

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