

Crowd Management in India



Photo: ADM

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ABOUT THIS ISSUE

Stampedes have been a recurring phenomenon in India. Tragedies of people being trampled to death have taken place at religious gatherings, mass processions, election rallies and even at music concerts. According to the National Crime Records Bureau (NCRB), a total of 3216 incidents of stampede have taken place in India between 2001 and 2014, leading to 2421 casualties. Moreover, 79% of all such stampedes in India occur at places of worship. The high incidence of such stampedes in India highlights the need for effective crowd management in the country.

This issue of Southasiadisasters.net is titled 'Crowd Management in India' and focuses on the important theme of controlling and managing crowds at mass gatherings in India. It discusses important issues related with crowd management ranging from what causes stampedes and what can be done to prevent them. Behavioral factors like the high tolerance for crowded spaces among Indians leading to higher cases of stampedes have also been discussed in the issue.

At the institutional level, stampedes are often seen as isolated events caused by the excesses of a frenzied crowd to be dealt by successive governments by offering compensation to the families of victims. This issue tries to build a new narrative around stampedes attributing them to systemic gaps in the country's crowd management capacities and suggest ways of bridging this gap. ■

- Kshitij Gupta, AIDMI

INTRODUCTION

Understanding Crowds

India is no stranger to large gatherings or crowds. Crowded railway stations, market squares and temple complexes are all commonplace. Given the ubiquity of crowded places, Indians tend to have a high tolerance for them. Thus, it is important to understand how crowds operate.

As soon as the word "crowd" is heard, the first instinct is to "manage" them, if not control them. Given the unusual number of stampedes taking place at religious congregations in the country it is important to manage these crowds both efficiently and creatively. Through the work of All India Disaster Mitigation Institute (AIDMI) in India across nine states, sixty nine districts and over thirty five cities it has been found that all crowds do not need to be managed or controlled; that all crowds are not unruly or out of control; that in fact crowds offer energy and numbers to move towards something creative and constructive in society from time-to-time.

In AIDMI's resilience building work in four most important temples of Gujarat - Somnath, Dwarka, Pavagadh, and Dakor - it was clear that crowds that gather around and in the temples on daily as well as occasional basis do pose a risk and can cause a major disaster like a stampede. But it was also evident that crowds have their own ways of working out cautious movements, harmonising pace, re-orienting direction, and avoiding injuries. But this informal, self-organising, local ways of crowds are hardly studied, which is why they've never been used to enable crowds to self-manage. In fact there are hardly any crowd studies available in India though crowds are everywhere. What AIDMI has found in its work with these temples is that crowds can act and commit to be and remain safe, can re-organise and re-orient, can balance between internal and external processes that lead to risk, and evolve

a coherence to its members for a given time and place. This is not an effort to romanticise crowds, but to leverage the inherent creativity and capability of a crowd for the common good.

Rahul Mehrotra, India's leading architect, has re-introduced Kumbh Mela, world's largest gathering to us. Kumbh Mela is self organising, seamless, cost effective, safe, and a bliss to all who attend this world's largest crowd. In fact he argues that such traditional gatherings offer us a new and more rooted way of planning cities and settlements in India.

At a presentation of his book on Kumbh Mela at L.D. Institute of Indology in Ahmedabad what became clear to me was the need to change the design and delivery of the environment within which crowds gather and operate. That is, changes in the ability of decision makers to understand crowds; changes in coordination and collaboration as well as the mobilisation of crowd management; and change in institutions and institutional capacities to respond to the needs and energies of crowds.

So if we were to launch crowd studies in India what will be its top four research priorities? First, start with the history of crowds that gather at say the Jagannath temple in Bhubaneswar or the Jama Masjid on Eid in Delhi. Second, find out where can crowd studies be placed among academic disciplines - in city planning, emergency management, security, and more. Third, look at crowds as people, individuals with will and concern both. Fourth, design and develop programmes and events that help us better understand the inherent good of crowds.

These first steps can go a long way in ensuring that our country does not have to suffer tragedies like stampedes in the future. Crowds do not remain a problem but become a solution. ■

- Mihir R. Bhatt

BSDMA and Crowd Management

India is home to a large number of festivals, pilgrimages, religious and social gatherings such as Durga Puja, Chhath Puja, Kumbh Mela, Ramzan, Rath Yatra and Hats, Bazaars, Processions, etc. Given their religious, social and cultural significance, most of these occasions attract thousands and millions of people/devotees.

An event of Mass Gathering is generally characterized by huge number of people accumulating in a very limited space in a short span of time. Such events, though observed for a limited time, sometimes attract a crowd, which if not managed carefully can lead to a catastrophe. The following are some critical crowd management issues which should be considered by the organizers of any mass gathering:

1. Mix of visitors on the basis of age, physical fitness, gender
2. Religious sensitivity of the devotees for religious functions
3. Managing the waiting time for the devotees at the gathering.
4. Ensuring cleanliness of the venue
5. Providing a reasonable degree

of comfort to the waiting devotees.

6. Medical assistance for the sick or injured people.
7. Special arrangements for infants, children, old and infirm devotees.
8. Special security measures to avert potential terrorist attacks.

If the above concerns are not properly managed then stampedes can take place at such events.

Special events always require special management measures, including non-routine investments of public resources to cope with the large crowds they draw. Some of the crowd control strategies are listed below:

1. Evaluate temple capacity, inclusive of all waiting areas considering reasonable waiting time - compare with requirement.
2. Shorten duration of religious procedures for faster turnaround.
3. Carry out crowd congestion analysis - identify bottlenecks in crowd movement.

4. Make provision for adequate space in waiting areas to reduce claustrophobia.
5. Quick exits with proper and well-lit signage.
6. Forced ventilation in waiting areas to prevent heating and air quality deterioration
7. Multiple queues for different types of visitors: elderly, women and children, differently abled.
8. Crowd safety training to employees/staff and security personnel - implement active and passive surveillance.
9. Improve access to premises from outside - alter location of offerings shops, decentralisation of markets and shops near the gathering.

Different regions, religions and faiths have their own ways of celebrating their festivals. Generally, these celebrations end up becoming an event of mass gathering. With such events, it becomes imperative for the local administration/government to get involved and make arrangements to keep the conduct of the events as smooth as



Photo: AIDMI.

Devotees thronging the Tirupati Balaji temple, Tirumala, Andhra Pradesh.

possible. They need to prepare themselves according to all aspects of disaster management, health, hygiene and medical care, mass casualty management, media relations, security of people, and care for vulnerable groups, etc.

Identification of main organizer/sponsor and other key stakeholders prior to event and regular consultation with them is also important, since many a times last minute changes are made which require adjustments in the planning of events and crowd management. Many a times it is observed that the administration avoids adopting a

multi stakeholder approach along with identification of new risks.

The Bihar State Disaster Management Authority (BSDMA) took the initiative to develop case studies of Mahakumbh 2013 in Allahabad, Chhath Puja, World Yoga Convention and other events in Bihar and recommendations were made for providing end-to-end solutions to various issues relating to crowd management. This exercise provided several key lessons to the administration and became the basis for training in the form of mock-drills to all the concerned officials of the local administration.

One of the basic and fundamental principles for disaster planning is building worst-case scenarios based on the previous history of the event and lessons learnt from similar events elsewhere, to roll out the plan accordingly. A participatory approach with the active involvement of various stakeholders, players including the local representatives and the local community will go a long way in ensuring smooth conduct of events of mass gatherings. ■

- Anil Kumar Sinha,

Sr. Advisor and Mentor, Hazard Risk Management and Climate Change Adaptation; Former Vice Chairman, BSDMA, Bihar

CROWD AND DRR

Crowdsourced Potential for Disaster

There is a saying of Nepali folk wisdom: "*Hool ma jiu jogau, anikal mabiu jogau!*" It translates as, "In an unruly crowd, save your body: in a famine save seed for next season's planting!" This wise counsel tells us that within a crowd lurks the potential for death and destruction. How to first understand that risk, and second how to work towards obviating it or at least significantly minimizing it is the challenging task before us all.

The possibility of increased levels of tragedy in crowded places is due not just to normal population increase but to a lifestyle forced on us all with modernization that has brought industrialization, urbanization, rapidity of transport and communication as well as ease of banking and food delivery. Indeed, no modern industrial economy can function without a large population base concentrated within a very small space. The modern factory and similar production sites may be the primary locale of such population density, but the secondary locales they spawn to cater to other needs of such demographics are no less a source of panicked stampedes or deliberate terrorist attacks. Think of a large

hospital, government service center, entertainment sites, inter-city transport hubs and many other such places.

Although it is assumed that modernization slowly does away with old cultural practices and traditions like religious gatherings, it is often noted that modernization increases the scale and significance of such events. For instance, the Kumbh Mela in Allahabad, an ancient tradition said to be the largest gathering of humans in the world, certainly did not see thirty million people at the confluence of Ganga and Jamuna in a day a century ago. However, with the ease of modern transport, mobile phones, TV publicity and ease of food supply, massive crowds started thronging the Kumbh.

Furthermore, celebrity concerts, football or cricket matches, political road shows, college admissions and many such social engagements will continue to increase in size in the future as people seek meaning an identity in their lives. Such places also become locales of political statements, including that of terrorism. DuryogNivaran, the South Asian Network of scholars, social

activists and public servants promoting an alternative perspective on disasters, has as its founding philosophy the idea that "*disasters are an unfinished business of development*". What lies behind this statement is the understanding that disaster mitigation is at the same time a constant rethinking of development, revisiting its premises and exploring alternative ways of achieving the same ends not just with less cost and better efficiency but less risk for the longer-term future. In so doing, we must also turn in reverence to the Sage of Sabarmati who not so long ago said that the world has enough for our needs for not enough for our greed. The Gandhian idea of *gram swaraj*, the simpler life-style based around village self-sufficiency, might have been side-lined by the imperatives of modern capitalism but its search for a de-congested, materially simpler but culturally richer life-style has become more pressing today. This special issue is a small step in that re-thinking to avoid potential, and wholly unnecessary, tragedies in crowded places in the future.

- Dipak Gyawali, Pragma, Nepal Academy of Science and Technology; Chair, Nepal Water Conservation Foundation

Planning for Crowd Management – Religious Events

India has experienced major crowd related disasters over past years. The majority of these disasters are related to religious festivals. Statistics show that more than 70% of crowd related disasters in India have occurred during religious celebrations. The day is not far when we will experience such incidences in events like musical concerts, exhibitions, *firework display*, sporting events and places like malls, Cinema theatres, market places, etc.

Events where large congregations take place are either held in an Indoor Complex or in an open area/ground. Religious gatherings in India are generally held indoors as well as outdoors. The safety and security of the place of event is the responsibility of the organizers/Trusts/ Owner of the premises and the local administration. The main reason for crowd disasters during religious events in India has been identified as "lack of Planning" on the part of organizers, which involves, Risk assessment, Crowd management and control measures, Resource management and efficient coordination among the stakeholders, though there are exceptions to this statement.

Characteristics of Religious Events

Each religious event in India has its own set ritual/peculiarity. With the years passing by the rituals and proceedings remaining the same the varying factors (vulnerability) has drastically changed and there is always a resistance from the organizers to modify the rituals or proceedings to reduce the vulnerability. Notwithstanding the different peculiarities of each religious place, there is always a commonality in strategy

formulation and management principles. Intelligent application of these strategy and principles will greatly reduce the uncertainty associated with planning & organizing for a safe and secure event.

Planning for the Event

Incident or Event planning should follow a set process for its development. In a religious event plan, the process begins with understanding the Event followed by emergency management activities. The flow chart as visualized shall be as under:

Understanding the Event

Most of the religious events in India are of set pattern however there is a need to discuss the event proceeding with the concerned authorities to identify variations necessary in consideration of increasing vulnerability, if any. Considering the scope of the event and previous knowledge on the subject the following need to be worked out:

- Area of interest (geographical area)
- Celebration Period
- Anticipated Human Density
- Existing & Required Infrastructure and Facilities.

For example the anticipated human density during 2015 Maha Kumbh Mela was worked out based on population growth in the country and in the region. Accordingly availability of infrastructure and facilities were assessed and gaps identified.

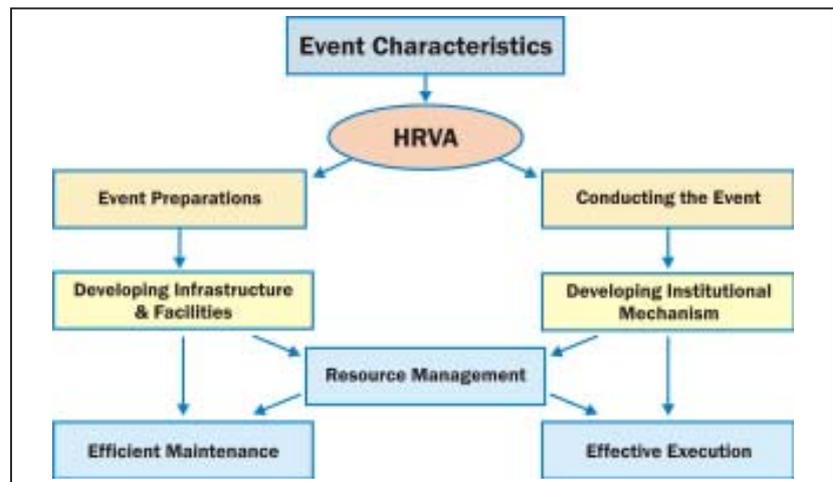
Understanding the Risk

A holistic & detailed hazard, vulnerability, risk & Capacity analysis need to be worked out considering safety & security of pilgrims and local population. The analysis should not only cover the main event location but also cover adjoining area, which has direct consequence in conduct of the event.

For example the Hazard, Risk, Vulnerability Assessment (HRVA) conducted for Maha Kumbh Mela included Core area of Ram Kund & Kushavart area and the routes leading to the location and nearby religious places likely to be visited by the pilgrims etc.

Initiating Crowd Management Measures

The HRVA determines the preventive/mitigation measures need to be initiated in terms of



infrastructure and facility development. These measures are compared with the existing infrastructures and facilities and the gaps are identified. The requirement of additional permanent/ temporary infrastructure and facilities are identified and work plan along with its financial budget is prepared. On approval build up activities are undertaken during Pre Event Period.

The procedural complexities and financial constraints can be easily resolved by integrating private/ corporate and community stakeholders in the entire process.

Initiating Crowd Control Measures

This involves actual conduct of event. A detailed institutional structure needs to be created considering anticipated contingencies and accordingly resources are deployed on ground for effective monitoring and controlling measures.

The concept of "Incident Response System" in overall management of event has been found to be an effective & efficient management System. The principles of Unified Command, Unity & chain of Command, span of control further helps in effective and efficient control measures. Mega event of

Maha Kumbh Mela 2015 was successfully conducted adopting IRS management system..

Command & Control Mechanism

The scientific advancement in the field of information technology for collection, collation, assessment and dissemination of information need to be integrated in the overall command and control set up. The concept of Emergency Operation Centre found to be very effective tool in monitoring & controlling of an event spread over large area & having involvement of all line departments, NGOs, CBOs, Central forces. This concept was effectively operationalized during Maha Kumbh Mela & was a great success.

Contingency Planning

Contingencies also emerge from risk Analysis which needs to be planned and integrated in to overall resource management. Additional resources, facilities, routes etc. need to be planned and staging areas created for timely response. Detailed SOPs need to be prepared and rehearsed for achieving operational effectiveness. With the limited resources there is a need to identify primary and secondary tasking to resources to ensure that there are no voids created.

Documentation

The reality in our failure to arrest recurring disasters, resulting in loss of lives and property, is our failure to reassess past event performance in absence of proper documentation. A well prepared document act as torch bearer to expose to positive and negative aspects experienced. We need to capitalize on success stories and get rid of shortcomings observed.

The IRS management system has an integral arrangement for documenting the entire event proceeding in a most systematic way. This will greatly help future organizers to understand the reasons for failures or success.

Conclusion

Management and Control of Crowd related events vary as per the location, type of event, composition of patrons and hence no two events or situations are identical. This paper provides an approach to planning for management special events. The management principles though common, they need to be modified to suit to event requirement. ■

- Col V N Supanekar (Retd),
Director & Professor, Center for
Disaster Management, YASHADA,
Pune



Photo: AIDMI.

Most of the big temples in India have a crowded market in their premises. The above photo is from Shiv Mandir near Parshurampur, Sheohar, Bihar.

Maha Kumbh Allahabad – Lesson and Learning for India

Kumbh Mela is a mass Hindu pilgrimage of faith in which Hindus gather to bathe in a sacred or holy river. Traditionally, four fairs are widely recognized as the Kumbh Melas: the Haridwar Kumbh Mela, the Allahabad Kumbh Mela, the Nashik-Trimbakeshwar Simhastha, and Ujjain Simhastha. These four fairs are held periodically at one of the following places by rotation: Haridwar, Allahabad (Prayaga), Nashik district (Nashik and Trimbak), and Ujjain. The main festival site is located on the banks of a river: the Ganges (*Ganga*) at Haridwar; the confluence (*Sangam*) of the Ganges and the Yamuna and the invisible Sarasvati at Allahabad; the Godavari at Nashik; and the Shipra at Ujjain. Bathing in these rivers is thought to cleanse a person of all sins.

At any given place, the Kumbh Mela is held once in 12 years. There is a difference of around 3 years between the Kumbh Melas at Haridwar and Nashik; the fairs at Nashik and Ujjain are celebrated in the same year or one year apart. The exact date is determined according to a combination of zodiac positions of the Jupiter, the Sun and the Moon. At Nashik and Ujjain, the Mela may be held while a planet is in Leo (Simha in Hindu astrology); in this case, it is also known as Simhastha. At Haridwar and Allahabad, an *Ardha* ("Half") Kumbh Mela is held every sixth year; a *Maha* ("Great") Kumbh Mela occurs after 144 years.

The festival is one of the largest peaceful gatherings in the world, and considered as the "world's largest congregation of religious pilgrims". There is no precise method of

ascertaining the number of pilgrims, and the estimates of the number of pilgrims bathing on the most auspicious day may vary. An estimated 120 million people visited Maha Kumbh Mela in 2013 in Allahabad over a two-month period, including over 30 million on a single day, on 10 February 2013 (the day of Mauni Amavasya).

The Maha Kumbh Mela is reportedly the world's largest gathering of people. Estimates peg the number of devotees swarming Allahabad's banks between 70 and 100 million. During the six-week festival, pilgrims press to take a holy dip in the Sangam, the confluence of the Ganges, Yamuna, and mythical Sarasvati rivers. The water is believed to wash away sins and offer relief from the cycle of rebirth.

The local government's ability to successfully manage this human tidal wave is even more impressive when placed in context. According to the World Bank, roughly one-third of India's population lacks access to electricity. However, in a city constructed and later deconstructed in a matter of weeks, electricity, safe drinking water, and police protection are all provided. It's an instructive achievement.

The Kumbh is also a first-rate example of an effective public-private partnership. According to Harvard researchers and the Indian government's Mela Administration, the state lays out the Kumbh Mela city grid and its various sectors, including roads, 41 police check posts, 36 fire stations, and 30 hospitals. However, nearly 5,000 private (many religious)

organizations plan the inner tent cities, which hold as many as 700,000 tents. NGOs run the missing persons units in coordination with the state police. Making this task more difficult is the city's elasticity, as its parameters are partially determined by the annual river recession, which comes into full view only in October. The entire city "pops up" in the subsequent two months.

At the Kumbh city, a range of government departments work in unison to ensure that there are no stampedes, accidents, epidemics or other public health disasters as millions of pilgrims pass through. And yet, the Mela is just a temporary space that must eventually be dismantled; most of the city is built out of makeshift, disposable or reusable materials that are often stored for future use.

The transitory nature of the Kumbh Mela makes it easier for the formal and informal to work simultaneously, but smoothly.

Good Governance

Deploying cities that privilege the temporary could be extremely useful in the context of refugee camps or housing for urban migrant populations. While the Kumbh system may not be completely flawless, but its model of governance definitely has helpful lessons.

The Kumbh is organized with the co-ordinate efforts of the central government, the state government and the municipal authorities, and there is a hierarchy of governance to be followed on paper. "But these hierarchies flip during the actual



Pilgrims crossing a make-shift bridge at Maha Kumbh Mela in Allahabad.

Source: http://drop.ndtv.com/albums/NEWS/kumbh-mela/kumbh_mela3.jpg

implementation, when the person on the ground is given a lot more authority along with accountability,"

The Kumbh has survived as a successful institution and urban system primarily because it has a single purpose and is bound by the faith of millions of Hindu pilgrims. But flexible-yet-accountable governance is also a major factor.

The railway stampede, initially a significant cause for alarm and skepticism regarding the festival's organization, actually occurred outside the Kumbh's jurisdiction, underscoring just how dangerous large gatherings like this can be without well organized management. Meanwhile, the Kumbh site saw police use an integrated computer system to register displaced or missing persons, frequent announcements on loudspeakers, well-placed identification posters, pictures on nine giant LED screens, and

Smartphone applications to guide loved ones back to one another.

The Kumbh, while far from problem-free, is a notable example of the state's ability to accomplish significant feats in short order, not usually considered its forte. With an urban population set to double over the next 20 years, India should harness the exceptional planning

skill displayed at the Kumbh. This would be one small step in capitalizing on a demonstrated potential to transform the lives of many living in India's most impoverished conditions. ■

- Dr. Bhanu Pratap Mall,
Executive Secretary, Poorvanchal
Gramin Vikas Sansthan (PGVS),
Lucknow, Uttar Pradesh, India



The Quick Response Team is a backup of trained guards and officers to handle the emergency calls. Quick Response Team members are well trained in handling Crowd Management, Fire Fighting and Rescue operations.

The Quick Response Team members ideally are trained and prepared to fulfill the roles required by the specific situation and for quickly rush to the incident place and provide assistance with all latest equipment to deal with any kind of emergencies. ■

Crowd Management in Dahod District, Gujarat

As we know that Gujarat is one of the most hazard prone states in India facing a multitude of disasters. Over the last few years it has faced floods, cyclone, and earthquake. Not only the natural disaster but also faced the man-made disasters. These have resulted in a loss of human lives and property in different parts of the state. Since last many years, the Government of Gujarat has taken up various initiatives related to disaster management, which gained momentum after the establishment of the Gujarat State Disaster Management Authority (GSDMA). GSDMA has been established with the mandate of preparing comprehensive disaster management strategy for the state. The approach in this regard, now, is on preparedness and mitigation instead of the traditional model of relief and rehabilitation.

Regarding the district of Dahod, Dahod is the eastern gateway of Gujarat and was carved out of Panchmahal district in 1979 and the district is spread across 8 Talukas and Dahod Taluka is the district headquarter and Dahod shares its border with Rajasthan state in the north and Madhya Pradesh state in the east. Dahod district known as a tribal district due to the large number of tribals residing there.

Regarding the crowd in Dahod district, in different parts of the district the people get together in one place and the place known as *Haat Bazaar*. Organized every Thursday, the *Haat Bazaar* draws large

crowds and the biggest crowd at assembles at a village called Gangardy in Garbada Taluka. In that approximately 10000 people come from entire the district of Dahod, and if we cannot manage the crowd then a lot of incidents arise at the place like accidents, fire, poisoning, and others. Hence, crowd management is always needed.

In Dahod district crowd management is especially required during the *Holi Mela*, a fair which takes place during the festival of Holi because of the importance of this festival for the tribals. Before this fair, the District Collector organizes a meeting at District level on crowd management and invites the officials from Police Department, the health department, RTO department, revenue department and fire department. In that they discuss on entry and exit point at place, traffic control, defined parking place, arrangement of the security staff from the home guard department, from the police department and from

the SRPF department and defined their roles and responsibility, and informed to the health department for the arrangement of the emergency ambulance at place and regarding it in Dahod district at the time of the *Holi* festival. They also arrange for extra ambulances at the site of the fair.

Early warning and communication are also discussed at this meeting. A district level disaster control room has been established and it has been working round the clock to inform the revenue department regarding any kind of emergency message.

In case such a message is received, collector gives the instruction to the all agencies that all Agencies should use the Incident Command System (ICS) as a basis to structure a law enforcement response to crowd management events. And all agencies should perform their role and responsibility at a place of the crowd.

And for the purpose of awareness building, regarding the disaster, at the place of the crowd we arrange the poster exhibition or stall keeping so that people can participate the mock drill regarding the fire and evacuation.

In case any untoward incident does occur, then we document all the details and submit them to GSDMA and the relief commissioner or state control room. ■

- Pravinsinh Rathod,
Ex-DPO, Collector Office,
GSDMA, Dahod

Since last many years, the Government of Gujarat has taken up various initiatives related to disaster management, which gained momentum after the establishment of the Gujarat State Disaster Management Authority (GSDMA).

Bhadrapadi Fair in Ambaji

Usually on each fifteenth day of Full Moon Day of each month as per the Vikram Samvat, year of Indian Hindu calendar, Ambaji celebrates a spontaneous Religious Fair and Festival with "Lok Mela". A big mass of devotees use to come here to worship Maa Ambaji on each day of Poornima during the year. But on the fifteenth day (Full Moon Day) of the months of Asho, Kartik, Chaitra, and Bhadrapad, the Spirit of Festival and Religious Fairs increases at their peaks, due to the significance of these holy days in the worship of Shakti Swaroopini Mata Ambica.

The people and devotees also enjoy all these Four Festivals of purnima, with Darshan, Ohm Havan and Traditional Garba Dances. Moreover, the cultural shows of Gujarati Bhawai, a purely ancient folk dance and "Play of Gujarat" are also the prime attractions of these festivals. Around 15 to 20 lakh people inside and outside of Gujarat join this Bhadarapadi Fair in Ambaji.

DRM Program, Public Awareness and its spread

Public awareness is the key activity of Disaster risk management programe. Public gathering in Ambaji on Bhadarvi poonam is a huge platform to make the community aware of DRM. For the first time a display gallery was prepared where different government officials from different government departments presented their various achievements, Schemes and Activities in front of Public.

Disaster Management Branch of Palanpur district presented Dos n Don'ts during disaster, Dos n don'ts before and after disaster so that maximum awareness can be disseminated at mass gathering. Disaster Management Branch of Palanpur district also requested people to give their suggestion and comments on such event.

An Important step by EOC (Emergency Operation Center):

1. Distribution of IEC material:

Stalls for distributing IEC material were set up at four places of Ambaji. Around 1,10,500 copies of IEC material were distributed in the public for spreading awareness.

2. Public Awareness Point:

The people who are coming Bhadravi purnima fair are used to take rest and night stay in service camps on the road sides. Disaster Management Branch of Palanpur district display awareness material to the people who are taking rest at various service camps. They also put hording on the various road sites.

3. Public awareness activity on Disaster Risk Management Program through BHAWAI (Local Gujarati street play) Awareness Information was delivered through entertainment at various four places of Ambaji. The people really like this activity of DRM program. ■

- Nirmal Sharma, Ex-District Project Officer, GSDMA, Palanpur



A procession being taken out by devotees at Bhadrapadi fair, Ambaji, Arravali, Gujarat.

The Necessity of Crowd Management at Religious Places

In the past few years, India has witnessed many stampedes in the religious places with a number of lives lost. Mostly, during occasions at religious places, influx of millions of pilgrims takes place. Hence, such gatherings create a tremendous amount of pressure on the authority where any occurrence of a disaster will result in widespread human and infrastructural loss and damage. Increasing participation in festival and events combined with higher "density of tolerance" of the people makes venues and places of mass gathering (especially places of worships) in India extremely vulnerable and prone to disasters.

People believed that "A temple is not only a place of worship, but it is also a place of learning; about the religion, language, culture, tradition, i.e. what is right and what is wrong, and how we should behave in order to live a happy life and so on." Hence, it is imperative that the

temples or any such venues or places of religious and cultural significance be safeguarded against the occurrence of disasters.

In the mentioned table, it is possible to see the major disasters seen lately in places such as temples during religious festivities.

As we see in the table of the past disasters "Stampede" was one of the major disaster and thousands of people died because of the mismanagement of crowd. Recently, the 1st Indian Conference on Crowd Management (ICMC 2017) was held at Gujarat Institute of Disaster Management (GIDM) by The Renewing and Empowering Society's Progress Enhancing Capacities through Technologies (RESPECT) to make opportunity designed to strengthen Crowd Management at places of mass gathering by bringing major stakeholders together at one place.

This is important because India is home to the largest religious gathering in the world called the Kumbh Mela.

What is the Kumbh Mela?

The Kumbh Mela is the confluence of Indian cultures and the symbol of spiritual awakening. It is the eternal flow of humanity and also believed to be the largest religious gathering on earth. The Mela alternates between Nasik, Allahabad, Ujjain and Haridwar every three years. Depending on what position the Sun, Moon, and Jupiter hold in that period in different zodiac signs, the venue for The Kumbh Mela is finalised. During such times, it is necessary to control the crowd with a cultural view. In the recent Kumbh Mela which was also known as 'Simhastha Kumbh Mela' was held in Ujjain, Madhya Pradesh. A stampede took place at this Mela, where seven people were killed and around ninety others were injured when

Place	Date	Type of disaster	Consequences
Puttingal temple complex in Paravoor village, Kollam district, Kerala state	April 11th, 2016	Fire during a fireworks display	106 people were killed
Outside a Hindu shrine in the Thai capital	August 17th, 2015	Attack	Killed 27 people, including foreign tourists, media reported
Chitrakoot area of Satna district of Madhya Pradesh	August, 2014	Stampede	10 pilgrims were killed and about 60 were injured
Kumbh Mela, Train station in Allahabad, Uttar Pradesh	February 10th 2013,	Stampede	36 people died in this episode and at least 39 were injured
Bridge near the Ratangarh Mata Temple in Datia district, Madhya Pradesh	October 13th 2013	Stampede	Killed 115 people and injured more than 110
Kalubai temple in Satara district, Maharashtra	2005	Stampede	300 were killed
Raghunath Temple Jammu	2002	Two suicide bombers stormed the temple	killed 14 and injured 45
Akshardham Temple Gandhinagar, Gujarat	2001	Terror attack, use of automatic weapons and hand grenades.	33 people were killed and 80 others were wounded
Sabarimala temple in the Indian state of Kerala	1999	Stampede	53 people were killed



Dates of Maha Kumbh Mela at Nashik, Maharashtra, India.

heavy rains accompanied by lightning and squall flattened and uprooted the makeshift tents of pilgrims.¹

The DM Act stands as the fundamental guide to be revisited under the purview of the disaster management cycle.

As per the national DM Act 2005, the DDMA has the power to ensure that the vulnerable areas are identified and the mitigation and preparedness measures are taken up by the Government Department at all levels of the district.

In view of the recurring stampedes at places of mass gathering, including religious places, and typically ad-hoc responses to those, the National Disaster Management Authority (NDMA) has published a guide line for State Government, Local Authorities, Administration and Organizers which is called "Managing Crowd at Events and Venues of Mass Gathering" in 2014 which are to be followed which involves congregation of individuals. The guidelines for crowd control at places of mass gatherings, suggesting deployment of snake line approach, constant monitoring of crowds for developing

Event/venue managers can involve NGOs and civil defence in traffic control, people flow control, medical assistance, sanitation and mobilization of local resources in case of disaster. It's also suggested administration should take care of all the necessary approvals and also make proper arrangements for the event schedule, venue, transport, medical, food, hygiene and emergency facilities.²

Thus, it is important to develop a holistic approach in managing unexpected events. Preparing Crowd Management Plan should be an exercise which considers the issues, challenges, and use of technology in venues and events of mass gatherings in India, which are mainly focused on shrines and religious places with the help of the authorities and other stakeholders in averting tragedy. ■

- Dharmik Purohit, AIDMI

1 <http://globalpress.hinduismnow.org/events/tragedy-strikes-ujain-kumbh-mela-stampede-kills-seven-injures-90-firstpost/>

2 <http://timesofindia.indiatimes.com/india/NDMA-issues-guidelines-for-crowd-control-at-large-gatherings/articleshow/24274548.cms>

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